



New Zealand Gazette

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WELLINGTON: MONDAY, 31 JANUARY 2011 — ISSUE NO. 9

ESTABLISHMENT OF INNOVATION BOARD AND SCIENCE BOARD AND OTHER RELATED NOTICES

PURSUANT TO THE
RESEARCH, SCIENCE, AND TECHNOLOGY ACT 2010

This Supplement to the *New Zealand Gazette* contains the following 4 notices issued by the Hon. Wayne Mapp, Minister of Research, Science and Technology, under the Research, Science, and Technology Act 2010:

1. Establishment of Science Board and of Innovation Board
2. Criteria for the assessment of proposals by the Innovation Board
3. Criteria for the assessment of proposals by the Science Board
4. RS&T funding that is not referred to the Science Board or Innovation Board

Each notice contained in this supplement commences on 1 February 2011.

This Supplement also contains a description of relevant funds within Vote RS&T.

The following definitions are used in the notices:

MSI means the Ministry of Science and Innovation

RS&T means Research, Science and Technology

MSI will publish on its website (www.msi.govt.nz) information about the Boards and the process for submitting proposals.

The criteria included in the Criteria for the assessment of proposals for the Innovation Board and the Science Board reflect the criteria to date applied by the Foundation of Research, Science and Technology. For example, the Description of Relevant Funds is consistent with the Ministerial Directions I issued to the Foundation under the Foundation for Research, Science, and Technology Act 1990 in June 2010.

31 JANUARY 2011

NEW ZEALAND GAZETTE, No. 9

Research, Science, and Technology Act 2010

Establishment of Science Board and of Innovation Board

Under section 10(1)(a) of the Research, Science, and Technology Act 2010 (“the Act”), I establish a Science Board and an Innovation Board.

Under section 10(3) of the Act, I specify that the Science Board will be responsible for making decisions for funding used predominantly by research organisations. Funding decisions made by the Science Board will enable New Zealand research organisations to conduct high-quality research that creates economic, social and environmental benefits for New Zealand

Under section 10(3) of the Act, I specify that the Innovation Board will be responsible for making decisions for funding that supports business-led research and development and technology transfer. Funding decisions made by the Innovation Board will support New Zealand businesses to grow by becoming more innovative and internationally competitive; and to increase the benefit New Zealand derives from publicly funded RS&T.

Decision-making criteria for the Science Board and the Innovation Board are published in this Supplement to the *New Zealand Gazette* on 31 January 2010.

Dated at Wellington this 19th day of January 2011.

HON WAYNE MAPP, Minister of Research, Science and Technology.

Research, Science, and Technology Act 2010

Innovation Board — Criteria for assessing proposals for specified Research, Science and Technology funding

INTRODUCTION

In this notice I set criteria for the Innovation Board to adhere to for assessing proposals for specified Research, Science and Technology funding (specified funding). This notice is issued under section 8(1) of the Research, Science, and Technology Act 2010 and uses the following format:

- Specified funding decided by the Innovation Board
- Criteria to be applied
- Administrative processes.

SPECIFIED FUNDING DECIDED BY THE INNOVATION BOARD

The Innovation Board must use one of the following investment tools when making a funding decision in respect of specified funding:

- Business-led R&D
- Commercialisation and Technology Transfer Support (Objective Two).

The Innovation Board can make funding decisions within the following Funds (government output expenses) when using one of the investment tools above:

- Biological Industries Research
- High Value Manufacturing and Services Research
- Environmental Research

The Funds to which each investment tool can be applied are provided in “Description of Funds within Vote Research, Science and Technology” within the Supplement to the *New Zealand Gazette* on 31 January 2011.

CRITERIA TO BE APPLIED

In making funding decisions the Innovation Board must:

- make funding decisions consistent with the following:
 - the Public Finance Act 1989, and
 - the “Description of Funds within Vote Research, Science and Technology” within the Supplement to the *New Zealand Gazette* on 31 January 2011.
- make funding decisions consistent with the criteria specific to each investment tool, which are:
 - Objective of the tool
 - Eligibility criteria
 - Judgement criteria
 - Weightings for judgement criteria
 - Parameters specific to the tool.

In addition to the criteria listed above, the Innovation Board must take into account the overall mix of relevant investments. Detailed criteria specific to each investment tool are set out in more detail in the following pages.

ADMINISTRATIVE PROCESSES

The Ministry of Science and Innovation may issue standing or periodic calls to generate proposals for consideration by the Board. The calls for proposals will be consistent with the criteria above, and will provide guidance for applicants. This guidance may include, where applicable:

- the area(s) of investment in which a funding decision is required
- more detail as to how the criteria in this notice apply to the area of investment
- the investment tool (or initiative within the investment tool) to be used
- the amount of funding available
- specific outcomes sought for a given investment process or decision
- other timeline and process information.

Calls for proposals will be published on the Ministry of Science and Innovation website:
<http://www.msi.govt.nz/>

Criteria Specific to Investment Tools

BUSINESS-LED R&D TOOL

OVERALL POLICY OBJECTIVE

The business-led R&D tool relates to research and development activities led by businesses. The objective of this tool is to increase New Zealand businesses' investment in research and development to support increased productivity.

INITIATIVES

Four initiatives sit within the business-led R&D investment tool.

1. TechNZ Targeted Grants.
2. TechNZ Capability Grants.
3. Technology Development Grants.
4. Technology Transfer Vouchers.

Criteria relating to each are set out in following sections.

1. Technology New Zealand Targeted Grants

POLICY OBJECTIVES

The objectives of this initiative, in addition to the overall objectives of the Business-led R&D tool, are to:

- grow business investment in research and development in areas of government priority
- improve the ability of businesses to develop new or more sophisticated technologies.

ELIGIBILITY CRITERIA

- Only a business or a group of businesses are eligible to receive funding via this tool. A business or group of businesses may nominate a representative to receive funding.
- A business must be a person or entity that is in business and resident in New Zealand, and:
 - where a group of businesses are applying together, each of the businesses involved must meet these criteria.
 - where a business or businesses nominate a representative to receive the funding, the business or businesses must meet these criteria. A nominated representative does not need to meet these criteria.
- Businesses may not be an entity established under or governed by the Education Act 1989, Crown Research Institutes Act 1992, Local Government Act 2002, Local Government (Auckland Council) Act 2009, or the New Zealand Public Health and

Disability Act 2000; or an entity that is 50% or more owned by one or more of those types of entities, and:

- where a group of businesses may receive funding together, such groups may not include one or more of the above types of entities; and
 - where a nominated representative may receive funding, these entities may, however, act as nominated representatives.
- Where a nominated representative may receive funding, the nominated representative may only receive funding when the Board is satisfied that those funds will ultimately be used or applied by or for the benefit of the nominating business or businesses.

Research and development projects that significantly increase a business's technological expertise are eligible to receive funding under this tool.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

Benefits to New Zealand	Risk or Success factors
A. Investment returns	B. Pathway to market (commercial outcomes)
<u>Key Question:</u> Assuming this project is successful, what are the potential commercial returns to the business and the benefits to New Zealand?	<u>Key Question:</u> What is the likelihood <u>the business</u> will successfully commercialise the new technology?
C. Technical stretch and capability building	D. Ability to deliver (R&D outputs)
<u>Key question:</u> Will the research be technically challenging for the business and build capabilities of potential future benefit for the business and New Zealand?	<u>Key question:</u> What is the likelihood <u>the project</u> will deliver the R&D results?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply the following weightings to the above judgement criteria.

Assessment criteria	Weighting (%)
A. Investment Returns	30
B. Pathway to market	30
C. Technical stretch and capability building	20
D. Ability to deliver	20

PARAMETERS SPECIFIC TO THIS INITIATIVE

- The Board must consider the level of co-funding to be provided by the recipient in the case of every grant. On average across the total amount of Technology New Zealand Targeted Grants the funding allocated by the Board must not be more than 50% of the proposed cost of research and development.

- In making decisions, the Board must seek to achieve balance across TechNZ Targeted Grant investments in terms of business maturity. To achieve this, the Board may take into account the overall mix of previous, current and planned investments.
- The majority of targeted grants are to encourage or support high risk “stretch” research and development activities.

2. Technology New Zealand Capability Grants

POLICY OBJECTIVES

The objective of this initiative, in addition to the overall objectives of this tool, is to grow New Zealand businesses' research and development capability by:

- improving their ability to develop new or more sophisticated technologies, and/or
- improving research and development skills and related business management practices.

ELIGIBILITY CRITERIA

- Only a business or a group of businesses are eligible to receive funding via this tool. A business or group of businesses may nominate a representative to receive funding.
- A business must be a person or entity that is in business and resident in New Zealand, and:
 - where a group of businesses are applying together, each of the businesses involved must meet these criteria.
 - where a business or businesses nominate a representative to receive the funding, the business or businesses must meet these criteria. A nominated representative does not need to meet these criteria.
- Businesses may not be an entity established under or governed by the Education Act 1989, Crown Research Institutes Act 1992, Local Government Act 2002, Local Government (Auckland Council) Act 2009, or the New Zealand Public Health and Disability Act 2000; or an entity that is 50% or more owned by one or more of those types of entities, and:
 - where a group of businesses may receive funding together, such groups may not include one or more of the above types of entities; and
 - where a nominated representative may receive funding, these entities may, however, act as nominated representatives.
- Where a nominated representative may receive funding, the nominated representative may only receive funding when the Board is satisfied that those funds will ultimately be used or applied by or for the benefit of the nominating business or businesses.

The research, science and technology and related activities funded under this initiative should result in businesses

- that have not previously undertaken research and development beginning to do so, or
- sustaining on-going research and development activity, or
- improving uptake of external technologies, including international technologies, or

- adopting business practices to support increased or improved research and development activity.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

Benefits to New Zealand	Risk or Success factors
A. Investment returns	B. Pathway to market (commercial outcomes)
<u>Key Question</u> : Assuming this project is successful, what are the potential commercial returns to the business and the benefits to New Zealand?	<u>Key Question</u> : Assuming this project is successful, what is the likelihood <u>the business</u> will realise the commercial returns?
C. Technical stretch and capability building	D. Ability to deliver (R&D outputs)
<u>Key question</u> : Will this project build capabilities of potential future benefit for the business and New Zealand?	<u>Key question</u> : What is the likelihood <u>the project</u> will deliver the results?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply equal weighting to each of the above judgement criteria.

3. Technology Development Grant

POLICY OBJECTIVES

The objective of this initiative, in addition to the overall objectives of this tool, is to improve New Zealand's economic performance by increasing the total level of the investment made by high technology New Zealand businesses in research and development.

ELIGIBILITY CRITERIA

Only individual businesses are eligible to receive funding via this tool.

- A business must be a person or entity that is in business and resident in New Zealand.
- Businesses may not be an entity established under or governed by the Education Act 1989, Crown Research Institutes Act 1992, Local Government Act 2002, Local Government (Auckland Council) Act 2009, or the New Zealand Public Health and Disability Act 2000; or an entity that is 50% or more owned by one or more of those types of entities.

Entities that conduct or commission research and development activities mainly for other persons or businesses are ineligible for Technology Development Grant funding, even if they meet the requirement to be 'in-business'.

In addition to the eligibility criteria above, to be eligible to receive funding a business must:

- have a track record of reasonable spend on research and development activities relative to the revenue of that business (R&D intensity)
- be able to meet due diligence requirements to a standard sufficient to justify a three-year investment from government (including, but not limited to financial viability and suitable management capability)
- have a research and development programme that aligns with the aspirations of the business around growth and is likely to generate wider benefit to New Zealand.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

A. Business and R&D track record	B. Business and opportunity
<u>Key question:</u> Does the business have a successful track record in delivering and exploiting R&D?	<u>Key Question:</u> Is this an aspiring business with an ambition to grow through investment in R&D?
C. R&D programme	D. Benefit to New Zealand
<u>Key Question:</u> How will the R&D programme (and the Grant) contribute to achieving business outcomes?	<u>Key Question:</u> What are the likely benefits to New Zealand from the business's R&D programme?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply the following weightings to the above judgement criteria.

Assessment criteria	Weighting (%)
A. Business and R&D track record	40
B. Business and opportunity	15
C. R&D programme	15
D. Benefit to New Zealand	30

PARAMETERS SPECIFIC TO THIS INITIATIVE

This initiative will support a programme of research and development activities.

The Technology Development Grant is equal to 20% of the eligible expenditure of a business's R&D programme, for three years, up to \$2.4 million per business, per year.

Eligible businesses must have an R&D intensity (the ratio of R&D expenditure to revenue) of 5% or more and revenue of at least \$3 million per year over the three years before a Technology Development Grant commences.

4. Technology Transfer Voucher

POLICY OBJECTIVES

The objective of this initiative, in addition to the overall objectives of this tool, is to increase the transfer of technology and related knowledge between businesses and accredited publicly funded research organisations by supporting business-led projects that develop better linkages between the two.

ELIGIBILITY CRITERIA

- Only a business or a group of businesses are eligible to receive funding via this tool. A business or group of businesses may nominate a representative to receive funding.
- A business must be a person or entity that is in business and resident in New Zealand, and:
 - where a group of businesses are applying together, each of the businesses involved must meet these criteria.
 - where a business or businesses nominate a representative to receive the funding, the business or businesses must meet these criteria. A nominated representative does not need to meet these criteria.
- Businesses may not be an entity established under or governed by the Education Act 1989, Crown Research Institutes Act 1992, Local Government Act 2002, Local Government (Auckland Council) Act 2009, or the New Zealand Public Health and Disability Act 2000; or an entity that is 50% or more owned by one or more of those types of entities, and:
 - where a group of businesses may receive funding together, such groups may not include one or more of the above types of entities; and
 - where a nominated representative may receive funding, these entities may, however, act as nominated representatives.
- Where a nominated representative may receive funding, the nominated representative may only receive funding when the Board is satisfied that those funds will ultimately be used or applied by or for the benefit of the nominating business or businesses.

This initiative will support research and development activities that respond to business needs. The research and development activities will be undertaken by an accredited research organisation.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

1. Project coherence and credibility	2. Project results in technology transfer
Is the R&D project proposal coherent and credible? Is the requested size of Voucher credible given the proposed R&D project?	Will the project result in the transfer of technology and related knowledge between research organisation and business?
3. Project improves linkages	4. Business R&D capability
Will the project improve linkages between the business and the research organisation?	Does the business have limited R&D capability and lack the specific in house research capability to carry out a piece of research?
5. Problem definition and benefit from research organisation	6. Business organisational capability
Does the business have a well defined problem or idea that will benefit from the R&D expertise and services in a research organisation?	Does the business have, or have the ability to develop, the organisational capabilities required to manage their R&D relationship with a research organisation and to apply the R&D results in their business?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply equal weighting to each of the above judgement criteria.

PARAMETERS SPECIFIC TO THIS INITIATIVE

For the Technology Transfer Voucher the funding allocated by the Board is not more than 50% of the proposed cost of research and development.

COMMERCIALISATION AND TECHNOLOGY TRANSFER SUPPORT

The Innovation Board can use Objective Two of this investment tool when making funding decisions.

POLICY OBJECTIVES

The objective of this tool is to increase the benefit to New Zealand derived from publicly funded research, science and technology outputs.

OBJECTIVE

The objectives of this tool are to improve the ability of:

1. research organisations to commercialise the results of their research, science and technology
 - via existing businesses and industry organisations, or
 - in the absence of a well-established industry, through the creation of new commercial entities; and
2. research users to access the skills, knowledge and results generated by publicly funded research, science and technology.

ELIGIBILITY CRITERIA

For Objective 1:

Research organisations are eligible to receive funding under this tool to support activities that develop publicly funded research, science and technology to an 'investor ready' point, including:

- Experimental development and related pre-commercial activities
- Activities that raise research providers' commercial capabilities and skills
- Activities that improve links between publicly funded research providers and potential private sector partners.

For Objective 2:

Research, science and technology users are eligible to receive funding under this tool to support:

- improved science input from research organisations to their activities, including decision making;
- an increase in their engagement with the RS&T sector; and
- greater collective engagement between research users and the science system generally.

PARAMETERS SPECIFIC TO THIS TOOL

- For Objective 1, co-funding is required for funding going to research organisations and their offices
- Research users may include regional councils
- Some activities funded under this initiative may be devolved to research organisations.

- For Objective 1:
 - The Board, or a provider to whom the Board has devolved funds, will use the investment tool to fund a project, or portfolio of projects at an aggregate level, at up to 50% of the eligible costs that the provider will incur. Eligible costs mean the total costs of a project or a group of projects funded under this investment tool.
 - The provider may reprioritise existing funds allocated by the Board (or the entity previously called the Foundation for Research, Science and Technology), up to a maximum of 12.5% of eligible costs and with prior approval from the Ministry of Science and Innovation.
 - The balance of the eligible costs may come from one or more of the sources listed below:
 - The provider's own discretionary funds;
 - Other external funds, such as private sector co-investment, but excluding non-research funds sourced from public sector funding agencies.

RELATIONSHIP TO PREVIOUS INVESTMENT TYPES

Funding has historically been invested in this area using:

- Pre-Seed Accelerator fund.
- Envirolink.

Dated at Wellington this 19th day of January 2011.

HON WAYNE MAPP, Minister of Research, Science and Technology.

Research, Science, and Technology Act 2010

Science Board — Criteria for assessing proposals for specified Research, Science and Technology funding

introduction

In this notice I set criteria for the Science Board to adhere to for assessing proposals for specified Research, Science and Technology funding (specified funding). This notice is issued under section 8(1) of the Research, Science, and Technology Act 2010 and uses the following format:

- Specified funding decided by the Science Board
- Criteria to be applied
- Administrative processes.

SPECIFIED FUNDING DECIDED BY THE SCIENCE BOARD

The Science Board must use one of the following investment tools when making a funding decision in respect of specified funding:

- Long-term non-contestable funding
- Science-led contestable funding
- Partnerships.

The Science Board can make funding decisions within the following Funds (government output expenses) when using one of the investment tools above:

- Biological Industries Research
- High Value Manufacturing and Services Research
- Energy and Minerals Research
- Environmental Research
- Hazards and Infrastructure Research
- Health and Society Research (where not administered by the HRC).

The Funds to which each investment tool can be applied are provided in “Description of Funds within Vote Research, Science and Technology” within the Supplement to the *New Zealand Gazette* on 31 January 2011.

CRITERIA TO BE APPLIED

In making funding decisions in respect to the specified funds and investment tools above, the Science Board must:

- make funding decisions consistent with the following:
 - the Public Finance Act 1989, and
 - the “Description of Funds within Vote Research, Science and Technology” within the Supplement to the *New Zealand Gazette* on 31 January 2011.

- make funding decisions consistent with the criteria specific to each investment tool, which are:
 - Objective of the tool
 - Eligibility criteria
 - Judgement criteria
 - Weightings for judgement criteria
 - Parameters specific to the tool.

In addition to the criteria listed above, the Science Board must take into account the overall mix of relevant investments. Detailed criteria specific to each investment tool are set out in more detail in the following pages.

ADMINISTRATIVE PROCESSES

The Ministry of Science and Innovation may issue standing or periodic calls to generate proposals for consideration by the Board. The calls for proposals will be consistent with the criteria above, and will provide guidance for applicants. This guidance may include, where applicable:

- the area(s) of investment in which a funding decision is required
- more detail as to how the criteria in this notice apply to the area of investment
- the investment tool (or initiative within the investment tool) to be used
- the amount of funding available
- specific outcomes sought for a given investment process or decision
- other timeline and process information.

Calls for proposals will be published on the Ministry of Science and Innovation website:

<http://www.msi.govt.nz/>

Criteria Specific to Investment Tools

LONG-TERM NON-CONTESTABLE FUNDING

POLICY OBJECTIVES

A non-contestable process to support the outcomes sought through the gazette notice of this date "Description of Funds within Vote Research, Science and Technology" and to generate economic, environmental or social benefits for New Zealand.

In particular, this tool will support research, science and technology with the potential to create and support large-scale, long-term programmes of research, science and technology that deliver sector strategies and outcomes important to government and deliver significant economic, environmental and social benefit to New Zealand.

ELIGIBILITY CRITERIA

Government would expect the majority of the research, science and technology funded by this tool to be led by research organisations, in particular, but not exclusive to, Crown Research Institutes, Universities and Independent Research Associations. The following research, science and technology activities are eligible to receive funding under this tool:

- Activities that are large in scale with respect to end-benefits and the size and complexity of the research effort required
- Activities that have significant involvement by users in both governance (setting directions and quality measures, determining capability requirements, evaluating outcomes) and execution (in particular, technology transfer and application).

SPECIAL CRITERIA

In addition to the criteria set out in this notice, when making funding decisions for the Sandpit for 'Developing a sustainable future for freshwater resources', the Science Board must make funding decisions consistent with the Call for Participants issued on 6 December 2010. The Call for Participants is available at

<http://www.frenz.org.nz/Activities/Sandpits/Sandpit1CallText.aspx>

PARAMETERS SPECIFIC TO THIS TOOL

In receiving funding under this tool, entities will become accountable for producing outcomes by:

- using implementation pathways that aim to maximise benefits for New Zealand; and
- delivering research, science and technology that meets appropriate international standards.

RELATIONSHIP TO PREVIOUS INVESTMENT TYPES

Funding has historically been invested in this area using:

- Stable Funding environment 1 and 2
- Outcome based investments.

SCIENCE-LED CONTESTABLE FUNDING

POLICY OBJECTIVES

A contestable process to support the outcomes sought through the gazette notice of this date “Description of Funds within Vote Research, Science and Technology” and to generate economic, environmental, or social benefits for New Zealand.

The tool will fund research, science and technology that has the potential to:

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

ELIGIBILITY CRITERIA:

To be eligible to receive funding under this tool, entities must have the capability to provide basic-targeted and/or applied research, science and technology.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

Benefits to New Zealand	Risk Management or Success Factors
1. Outcome benefits to New Zealand	2. Implementation Pathway
Key Question: Assuming this project is successful, what is the potential contribution it will make to the achievement of target outcomes?	Key Question: What is the likelihood the team will successfully have the research implemented?
3. Research, science and technology benefits to New Zealand	4. Ability to deliver research, science and technology results (outputs)
Key question: Will the research be of high science quality and build or retain capabilities of potential future benefit for New Zealand?	Key question: What is the likelihood the team will achieve their proposed research outputs?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply the following weightings to the above judgement criteria, according to the research type and duration.

Assessment criteria	Applied Medium-term (%)	All Short-term (%)	Basic Targeted (%)
Economic, social or environmental benefits to New Zealand	25	10	15
Research, science and technology benefits to New Zealand	25	50	35
Implementation pathway	25	5	15
Ability to deliver research results	25	35	35

PARAMETERS SPECIFIC TO THIS TOOL

- Research, science and technology projects and programmes supported under this tool will tend to be short to medium term.
- There will be a focus on excellent research as assessed by the quality of the available capabilities, research management processes and potential impact of the targeted outcomes.
- Government would expect the majority of the research, science and technology supported by this tool would be led by research organisations, in particular, but not exclusive to, Crown Research Institutes, Universities and Independent Research Associations.

RELATIONSHIP TO PREVIOUS INVESTMENT TYPES

Funding has historically been invested in this area using:

- New Economy Research Fund
- Transformational RS&T
- Contestable investment processes
- Commercialisation and technology transfer support.

PARTNERSHIPS

POLICY OBJECTIVES

The objective of this tool is to invest in research, science and technology and related activities that increase competitiveness in New Zealand industry by increasing investment in research science and technology through the development of ongoing partnerships with research organisations. The partnerships should:

- provide for early and ongoing user engagement in research, science and technology so as to increase the likelihood of developing successful commercial applications from research outcomes; and
- develop user-capability in engaging productively with researchers, thereby encouraging an increase in the level of private investment in New Zealand-based research, science and technology.

ELIGIBILITY CRITERIA

Partnering arrangements led by research users and involving research organisations are eligible for funding via this investment tool.

Central and local government agencies are not eligible to receive funding under this tool, although they can contribute to partnering arrangements.

The proposed research, science and technology and related activities must:

- address a specific user problem or opportunity for which solutions are likely to increase productivity and profitability;
- incorporate clearly defined pathways to implementation and commercialisation for their intended research outcomes; and
- build the research, science and technology capability and innovation potential of the user.

JUDGEMENT CRITERIA

The Board must assess proposals against the following criteria:

Benefits to New Zealand	Risk Management or Success Factors
1. Outcome benefits to New Zealand	2. Implementation pathway (to outcomes)
<u>Question:</u> Assuming this project is successful, what is the potential contribution the consortium will make to the achievement of target outcomes?	<u>Question:</u> What is the likelihood the consortium will successfully have the research implemented?
3. Research science & technology benefits to NZ	4. Ability to deliver research science and technology results (outputs)
<u>Question:</u> Will the research be of high science quality and build or retain capabilities of potential future benefit for New Zealand?	<u>Question:</u> What is the likelihood the consortium will achieve their proposed research outputs?

WEIGHTINGS FOR JUDGEMENT CRITERIA

The Board must apply the following weightings to the above judgement criteria.

Assessment Criteria	Weight (%)
1. Outcome Benefits to NZ	25
2. Implementation Pathway	25
3. Research Science & Technology Benefits to NZ	25
4. Ability to Deliver	25

PARAMETERS SPECIFIC TO THIS TOOL

- At least 50 per cent cash co-funding from private sector is required during the life of the contract with an annual contribution.

RELATIONSHIP TO PREVIOUS INVESTMENT TYPES

Funding has historically been invested in this area using:

- Research consortia.

Dated at Wellington this 19th day of January 2011.

HON WAYNE MAPP, Minister of Research, Science and Technology.

Research, Science, and Technology Act 2010

Description of Funds within Vote RS&T

This notice refers to Vote Research, Science and Technology funds that were previously specified as schemes under section 8A of the now-repealed Foundation for Research, Science, and Technology Act 1990. These funds will now be administered by the Ministry of Science and Innovation.

The overall objective of these funds is to create value for New Zealand through improved economic performance while continuing to strengthen our society and protect our environment.

The description of these funds should be read in conjunction with the Annual Estimates documents. The descriptions specify the objectives, indicators of success, nature of research funded and the funding tools that the Science and Innovation boards must take into account when allocating the funds.

BIOLOGICAL INDUSTRIES RESEARCH FUND

The objectives of the Biological Industries Fund are to support sustainable productivity growth of New Zealand's primary industries, and the development of premium food and industrial biological products and technologies responsive to global consumer preferences.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

The Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

Indicators of Success

If successful, the Biological Industries Fund will generate and support the uptake of research RS&T that will contribute to:

- enhancing the knowledge, capabilities and technologies which drive export growth and competitiveness in New Zealand's biologically-based sectors and firms;
- increasing the levels of sustainable productivity in biologically based sectors while minimising and/or managing impacts on the environment;
- increasing the diversity and value of biologically-based products, in response to global consumer preferences;
- increasing the levels of technology transfer from government research investments to biologically-based sectors and firms; and
- enabling trade to occur in line with international obligations and in a manner that prevents the introduction or export of pests and diseases.

The above indicators will be measured by the Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund through regular evaluations.

Nature of the Fund

The Biological Industries Fund will achieve its objectives by supporting RS&T in the following two areas:

- **Primary sector productivity and sustainability** — encompasses research underpinning the development, sustainable production, processing and delivery to global markets of foods and materials from New Zealand's primary industry. This includes the pastoral, horticultural, arable, seafood and aquaculture, and forestry sectors. It also includes broader cross-sector research programmes in areas important to all primary sectors such as biosecurity research.
- **High-value food and industrial biological products, processes and technologies** — encompasses research underpinning the development of food and industrial bioproducts, processes and technologies. These products will have embedded technology and intellectual property derived from processing and manipulation. This includes research to develop functional and manufactured food products and ingredients, nutraceuticals and supplements. It also includes the development of non-food natural products, such as renewable industrial biomaterials, and bio-sensing and bio-processing technologies.

Tools for Allocating Funding

Research, science and technology supported under the Biological Industries Fund must in each case fit one of the following Tools:

- **Science-led contestable funding** — investing through a contestable process in RS&T and related activities.
- **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.
- **Partnerships** — support RS&T and related activities that provide for early and ongoing user engagement in RS&T and develop user-capability in engaging productively with researchers.
- **Commercialisation and technology and knowledge transfer support** — research to increase the stream of commercial prospects from publicly-funded RS&T, and supporting and equipping users to engage with research organisations and applying the results of publicly funded RS&T.
- **Business-led R&D** — research and development activities to increase New Zealand businesses' investment in research and development to support increased productivity.

ENERGY AND MINERALS RESEARCH FUND

The objective of the Energy and Minerals Fund is to increase the contribution of energy and minerals to New Zealand's economic growth, enhance energy security and assist New Zealand to meet future energy and mineral needs in efficient, affordable and environmentally responsible ways.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

It is also expected that the Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

Indicators of Success

If successful, the Energy and Minerals Fund will generate and support the uptake of RS&T that will contribute to:

- improving the knowledge of our petroleum and mineral endowment;
- efficacious mineral extraction and increased energy production;
- enhancing New Zealand's standing as an attractive destination for investment in petroleum and mineral related activities;
- effective minimisation and/or management of the environmental impacts of mineral extraction and energy production, including greenhouse gas emissions;
- improving energy security through the development of a more efficient, cost-effective, and robust electricity generation system and the development of economically viable New Zealand-sourced bio-energy; and
- increasing export returns from selling energy and mineral resources, technologies and services.

The above indicators will be measured by the Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund through regular evaluations.

Nature of the Fund

The Energy and Minerals Fund will achieve its objectives by supporting RS&T in the following two areas:

- **Energy Resources** — encompasses research in economically viable, environmentally sustainable and efficient energy generation from indigenous sources; to provide the knowledge and capabilities to unlock the potential of New Zealand's energy resources and assist the transition to an energy future that maximises efficiency, economy and sustainability whilst managing environmental impact.
- **Minerals** — encompasses research to increase understanding of the resource base and assist commercially- and environmentally-informed decision-making about extracting minerals from the ground and seabed.

Tools for Allocating Funding

Research, science and technology supported under the Energy and Minerals Fund must in each case fit one of the following Tools:

- **Science-led contestable funding** — investing through a contestable process in RS&T and related activities.
- **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.

- **Partnerships** — support RS&T and related activities that provide for early and ongoing user engagement in RS&T and develop user-capability in engaging productively with researchers.
- **Commercialisation and technology and knowledge transfer support** — research to increase the stream of commercial prospects from publicly-funded RS&T, and supporting and equipping users to engage with research organisations and applying the results of publicly-funded RS&T.

ENVIRONMENTAL RESEARCH FUND

The objective of the Environmental Research Fund is to fund environmental research that underpins the management, use protection and enhancement of species natural ecosystems, land, marine and freshwater resources, climate and atmosphere within New Zealand and Antarctica.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

It is also expected that the Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

It is expected that the Fund will encourage research to demonstrate re-use and sharing of data, both within the RS&T system and between it and end-users.

Indicators of Success

If successful the Environmental Research Fund will generate and support the uptake of RS&T that will contribute to:

- enhancing and supporting the ecological functioning, recovery and resilience to threats of New Zealand's natural and indigenous environments (encompassing land, freshwater and marine ecosystems and their components).
- maintaining and enhancing the environmental knowledge base and informing actions by government and business to enable sustainable management of New Zealand's natural resources and environment, and mitigate or adapt to the impacts of global processes such as climate change.
- Supporting growth in businesses and industries dependent on the environment.

The above indicators will be measured by the Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund.

Nature of the Fund

The Environmental Research Fund will achieve its objectives by supporting RS&T in the following six areas:

- **Land and freshwater resources** — RS&T that underpins sustainable use of soil and water resources and enhances their productive capacity for current and future generations.
- **Climate and atmosphere** — RS&T that improves our ability to predict, mitigate and adapt to the impacts of climate change, and improves our ability to

anticipate and manage future impacts of global processes, such as ocean/climate interactions.

- **Marine resources** — RS&T that underpins sustainable use of living marine resources and which will also ensure sustainable production for future generations.
- **Terrestrial ecosystems** — RS&T that enables protection and maintenance of our natural indigenous land and freshwater ecosystems, and enables improved ecosystem functionality across whole landscapes.
- **Marine ecosystems** — RS&T that enables protection and maintenance of marine biodiversity and ecological health of marine ecosystems.
- **Antarctica** — Antarctic ecosystems are preserved for future generations and resources are used sustainably, in line with New Zealand's international commitments.

Tools for Allocating Funding

Research, science and technology supported under the Environmental Research Fund must in each case fit one of the following Tools:

- **Science-led contestable funding** — investing through a contestable process in RS&T and related activities.
- **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.
- **Partnerships** — support RS&T and related activities that provide for early and ongoing user engagement in RS&T and develop user-capability in engaging productively with researchers.
- **Commercialisation and technology and knowledge transfer support** — research to increase the stream of commercial prospects from publicly-funded RS&T, and supporting and equipping users to engage with research organisations and applying the results of publicly funded RS&T.

HAZARDS AND INFRASTRUCTURE RESEARCH FUND

The objectives of the Hazards and Infrastructure Research Fund are to increase New Zealand's resilience to hazards; support sustainable urban development, building and infrastructure; and help communities to manage growth and change, mitigate risks and maximise infrastructure efficiency.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

It is also expected that the Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

Indicators of Success

If successful, the Hazards and Infrastructure Research Fund will generate and support the uptake of research, science and technology that will contribute to:

- the effective management of the major hazards faced by New Zealand communities through improved hazard prediction and alert, management and recovery systems and practices, better urban design and development, and resilient infrastructure;
- the effective capture and use of data, including human responses, during and after events; and
- improved planning and service delivery by central, regional and local government, private sector organisations, and the community.

The above indicators will be measured by the Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund.

Nature of the Fund

The Hazards and Infrastructure Research Fund will achieve its objectives by supporting research, science and technology in the following two areas:

- **Hazards** — research to improve the management of hazards (for example, fire, flooding and earthquake) through hazard prediction and reduction, improving readiness, and emergency response and recovery. The research will support understanding of the physical causes of hazards, the social, economic and cultural factors influencing development of disaster-resilient communities, and the scientific underpinning for risk assessments/simulation models.
- **Urban development and infrastructure:**
 - Research into the development and management of cities and towns, addressing lifestyles, economic and community development, economic, environmental and social infrastructure, networks, governance, buildings and spaces, and the ways people use them.
 - Infrastructure research to improve the development, provision and resilience of essential infrastructure networks, systems and services. The research will include studies on interactions between physical infrastructure and the human environment to support economic, environmental, cultural and social wellbeing.

This investment area will fund a wide range of multidisciplinary (physical, social, economic and cultural) research and systems-based approaches to meet the needs of government, councils, communities and businesses in managing hazards, and urban and infrastructure development.

Tools for Allocating Funding

Research, science and technology supported under the Hazards and Infrastructure Research Fund must in each case fit one of the following Tools:

- **Science-led contestable funding** — investing through a contestable process in RS&T and related activities.
- **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.
- **Commercialisation and technology and knowledge transfer support** — research to increase the stream of commercial prospects from publicly-funded RS&T, and

supporting and equipping users to engage with research organisations and applying the results of publicly funded RS&T.

- **Partnerships** — support RS&T and related activities that provide for early and ongoing user engagement in RS&T and develop user-capability in engaging productively with researchers.

HEALTH AND SOCIETY RESEARCH FUND

Note: The Health component of the appropriation that funds this Fund (which is the majority of the appropriation) goes to the Health Research Council and is governed by separate accountability documents. This Direction addresses only the society research component of the appropriation which is managed by the Ministry of Science and Innovation.

Objective of the Fund

The objective of the Health and Society Fund is to increase understanding of the social and economic factors contributing to improved health and social wellbeing of New Zealanders.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

It is also expected that the Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

Indicators of Success

If successful, the Health and Society Fund will generate and support the uptake of RS&T that will contribute to:

- innovations in social and economic policy, social services delivery in central and local government, community services sectors, and business arising from an increased understanding of key social and economic trends and behaviours.

The above indicator will be measured by Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund through regular evaluations.

Nature of the Fund

The Health and Society Fund will achieve its objectives by supporting RS&T in the following areas:

- **Society** — Research to understand, anticipate and help manage major societal challenges, trends and implications — such as changes in population and life course, social structures and institutions, wealth generation, lifestyles and values — to inform social and economic policies and services. Important priorities are the determinants of wellbeing and seeking solutions to problems such as inequalities, social exclusion, acquiring knowledge, poverty, housing, and anti-social behaviour such as crime, delinquency and drugs.

- **Economy** — Research on New Zealand's economic and technological development in the wider context of social, cultural and economic wellbeing. Priority areas include research on economic performance, productivity, knowledge production and exploitation, innovation systems, skills, indigenous innovation, the economy, and sustainable development of technologies.

Tools for Allocating Funding

Research, science and technology supported under the Health and Society Fund must in each case fit one of the following Tools:

- Science-led contestable funding — investing through a contestable process in RS&T and related activities.
- Long-term non-contestable funding — using non-contestable processes to invest in RS&T and related activities.

HIGH VALUE MANUFACTURING AND SERVICES RESEARCH FUND

The objective of the High Value Manufacturing and Services Research Fund is to diversify New Zealand's economy by undertaking research, science and technology that will enable the development of new technologies, novel materials and new products, processes and services resulting in the growth of existing, new and emerging industries.

The Fund will support RS&T that is intended to be of benefit to New Zealand.

It is also expected that the Fund will support relevant research that contributes to unlocking the innovation potential of Māori knowledge, resources and people as outlined in the Vision Mātauranga policy framework. International collaboration will be supported where this is relevant and of benefit to the objectives of the Fund.

Indicators of Success

If successful, the High Value Manufacturing and Services Research Fund will generate and support the uptake of RS&T that will contribute to:

- increasing the number of New Zealand businesses which become established global exporters by leveraging intellectual property, including (but not limited to) that derived from New Zealand research;
- substantially increasing exports of high-technology goods and services from New Zealand; and
- enhancing sector performance from the use of new knowledge or technologies.

The above indicators will be measured by the Ministry of Science and Innovation at a sector level and will provide some indication of the success of the Fund through regular evaluations.

Nature of the Fund

The High Value Manufacturing and Services Research Fund will achieve its objectives by supporting research, science and technology in the following four areas:

- **Novel materials, manufacturing and applications** — encompasses research including new products and services created by transforming materials and/or

automating production, and improved efficiencies in production from new engineering tools or processes.

- **Agri-technologies** — encompasses research including 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.
- **Health and medical technologies** — encompasses research including 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.
- **Information, communication and digital technologies** — encompasses productivity improvement tools, data management tools, communications technologies and digital tools for creativity.

Tools for Allocating Funding

Research, science and technology supported under the High Value Manufacturing and Services Research Fund must in each case fit one of the following Tools:

- **Science-led contestable funding** — investing through a contestable process in RS&T and related activities.
- **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.
- **Partnerships** — support RS&T and related activities that provide for early and ongoing user engagement in research, science and technology and develop user-capability in engaging productively with researchers.
- **Commercialisation and technology and knowledge transfer support** — research to increase the stream of commercial prospects from publicly-funded RS&T, and supporting and equipping users to engage with research organisations and applying the results of publicly funded RS&T.
- **Business-led R&D** — research and development activities to increase New Zealand businesses' investment in research and development to support increased productivity.

MONITORING AGENCY

The Ministry of Science and Innovation is to monitor and review these Funds.

PERFORMANCE MEASURES AND ALLOCATION

Annual performance measures for each Fund, and the amount of each Fund, will be published in the annual Estimates of Appropriation.

Dated at Wellington this 19th day of January 2011.

HON WAYNE MAPP, Minister of Research, Science and Technology.

Research, Science, and Technology Act 2010**RS&T funding that is not referred to the Science or Innovation Boards**

Under section 5(2) of the Research, Science, and Technology Act 2010, the following RS&T funding in Vote RS&T is subject to decision-making processes that do not require referral to a Board established under section 10(1)(a):

- Marsden Fund
- Fellowships for Excellence (includes Rutherford Discovery Fellowships and Fulbright)
- International Relationships
- Health & Society research investments made by the Health Research Council
- Vision Mātauranga Capability Fund
- Business-Led Research and Development funding allocated via Regional Business Partners
- Commercialisation and Technology Transfer Support, Objective 1 (including National Networks of Commercialisation Centre funding and what was historically invested as Pre-Seed funding).

Descriptions of these funding processes are available from the Ministry of Science and Innovation.

Dated at Wellington this 19th day of January 2011.

HON WAYNE MAPP, Minister of Research, Science and Technology.