MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Science Advisory Group

Date:	20 December 2023	**Priority:**	High
Security classification:	In Confidence	**Tracking number:**	2324-1430

Action sought		
	Action sought	**Deadline**
Hon Judith Collins **Minister of Science, Innovation and Technology**	**Provide** feedback on the draft terms of reference and member for MBIE's Science Advisory Panel.	10 January 2024

Contact for telephone discussion (if required)			
Name	**Position**	**Telephone**	**1st contact**
Prue Williams	General Manager, Future Research System	s 9(2)(a)	✓
Richard Walley	Policy Director, Science, Innovation and International	s 9(2)(a)	

The following departments/agencies have been consulted

Minister's office to complete:

- ☐ Approved
- ☐ Noted
- ☐ Seen
- ☐ See Minister's Notes
- ☐ Declined
- ☐ Needs change
- ☐ Overtaken by Events
- ☐ Withdrawn

Comments

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Science System Advisory Group

Date:	20 December 2023	**Priority:**	High
Security classification:	In Confidence	**Tracking number:**	2324-1430

Purpose

To seek your feedback on the draft terms of reference and membership for MBIE's Science System Advisory Group.

Recommended action

The Ministry of Business, Innovation and Employment recommends that you:

a **Provide feedback** on the draft terms of reference and membership of MBIE's Science System Advisory Panel.

Agree / Disagree

Dr Prue Williams
General Manager
Future Research System
20 / 12 / 2023

Hon Judith Collins
Minister of Science, Innovation and Technology
..... / ..... / .....

Background

1. At your meeting with officials on 18 December you asked MBIE to convene a panel to provide advice on:

    a. the current state of the science system

    b. areas for improvement

    c. core principles under which the system should operate

    d. actions to enhance the effectiveness and impact of the system.

2. This briefing provides an update on progress to establish a Science System Advisory Panel (the panel) and seeks your feedback on the draft terms of reference and potential panel members.

Terms of reference

3. We have reviewed and discussed with Professor Sir Peter Gluckman the terms of reference he prepared. We have agreed to the scope of the terms of reference and note that an edit may be needed in the New Year to ensure the draft is tidy before being finalised and published. An updated draft is provided for your feedback in Annex One.

4. We have suggested the terms of reference focus on establishing an advisory panel rather than a review, and that it direct the panel's attention the following six areas of specific interest:

    a. Science funding system.

    b. Public science institutions.

    c. Nationally critical science services, scientific monitoring, and national scale data collection, storage and provision.

    d. Increasing focus on advanced technologies.

    e. Government as a commissioner and purchaser of science.

    f. Role of Government's science funding bodies.

5. The panel will be convened by MBIE, have an independent chair and members, and have secretariat support provided by MBIE.

6. The key deliverables are:

    a. May 2024: Report with high level recommendations and principles about the future of the science system.

    b. October 2024: Report with recommended changes in form or in operation that might be needed to ensure a more effective science system.

Members

7. We expect the panel may have up to seven members, in addition to the chair and the Prime Minister's Chief Science Advisor serving as an *ex officio* member. Members should collectively:

a. have the expertise necessary to enable the panel to deliver on the terms of reference

b. bring a mix of New Zealand and international experience and perspectives.

8. We are contacting potential candidates to gauge their interest and availability of being on the panel. A list of the candidates is provided for your feedback in Table One. Short biographies for each candidate are provided in Annex Two.

9. Professor Sir Peter Gluckman has agreed to chair the panel, s9(2)(f)(iv) [redacted]

10. We have not yet landed on our preferred candidates with Crown Research Institute or university research experience, and have included a short list of candidates who bring those perspectives Table One and Annex One.

11. Consideration will need to be given to the overall balance of skills, experience, gender and te ao Māori expertise before membership is finalised. For example, there are benefits in ensuring we have more than one member who can bring a te ao Māori perspective to the work of the panel.

Table One: Potential candidates and their interest and availability to be on the panel.

Potential member	Role	Experience	Response to invitation
Peter Gluckman (Chair)	Chair	Former Prime Minister's Chief Science Advisor, New Zealand. Health research.	Accepted
William Rolleston	Member	Co-founder of biotechnology company South Pacific Sera Limited. Biotechnology.	Accepted
s 9(2)(a) [redacted]			
Nadia Levin	Member	CEO and Managing Director of Research Australia.	Accepted
Hermann Hauser	Member	Entrepreneur and venture capitalist. Innovation and technology systems. Physics.	Unknown
Mark Ferguson	Member	Board chair of the European Innovation Council. Science and research systems. Molecular biology.	Accepted
s 9(2)(a) [redacted]			
Short-list of candidates with CRI, university or te ao Māori perspectives and expertise			
Hamish Spencer	Member	Distinguished professor of evolutionary biology, University of Otago. Genetics.	Not approached
Tracey McIntosh	Member	Professor of Indigenous Studies, University of Auckland Chief Science Advisor for the Ministry of Social Development. Te ao Māori expertise.	Not approached
Barb Hayden	Member	Chief Scientist Coasts and Oceans, NIWA. CRI perspective. Marine biology.	Not approached
s 9(2)(a) [redacted]			

s 9(2)(a)

Next steps

12. Once we have your feedback, we will:

    a. finalise the terms of reference and membership of the panel

    b. work with the Chair to clarify how he would like the panel to operate

    c. develop a communication plan

    d. provide you with regular updates on progress.

Annexes

Annex One: Draft, updated terms of reference

Annex Two: Short biographies of potential panel members

Annex One: Draft, updated terms of reference

Introduction

1. The Government of New Zealand is committed to maintaining a thriving science system that delivers growth for New Zealand's economy, environment and society. The Science System Advisory Panel (the panel) will comprehensively assess the current state of the science system, identify areas for improvement, establish core principles under which the system should operate in the coming decades, and propose evidence-based actions that could enhance its effectiveness and impact.

2. There are several compelling reasons why an assessment of the New Zealand science system is necessary and needed now. These include:
   a. **Economic transformation**: New Zealand needs to move towards a knowledge-based economy, and a robust science system is essential for driving innovation and economic growth.
   b. **Addressing emerging challenges**: New Zealand faces numerous pressing challenges, including climate change, biodiversity loss, sociological change, economic diversification, and an ageing population. A robust science system is crucial for developing innovative solutions to these challenges. However, the current system may not be fully equipped to address these complex issues effectively.
   c. **Adapting to a changing landscape**: The global research landscape is evolving rapidly, with new technologies, funding models, and collaboration opportunities emerging. The New Zealand science system needs to adapt to these changes to remain competitive and continue producing impactful research.
   d. **Governmental use of scientific data and knowledge:** The rapid emergence of big data, AI, and related technologies offers governments ways to enhance their effectiveness across social, environmental and economic domains.

3. The science system suffers from systematic concerns including:
   a. **Funding and allocation**: Concerns have been raised about the adequacy and sustainability of science funding, as well as the effectiveness of funding mechanisms in addressing national priorities.
   b. **Research infrastructure and resources**: Access to research facilities and equipment can be unevenly distributed, hindering research progress and collaboration.
   c. **Regulatory frameworks and incentives**: Regulatory frameworks and current incentives may not be conducive to the most effective management of research and research innovation or commercialisation.
   d. **System inefficiencies and fragmentation**: Concerns have been raised about inefficiencies in the current system, including excessive managerialism, complex funding mechanisms, fragmented research efforts, and limited collaboration between different stakeholders. A review can identify these issues and recommend solutions for streamlining and optimizing the system.
   e. **The state of the research workforce**
   f. The **over-competitive state** of the two major components of the public research system: the CRIs and Universities.

4. There are the following opportunities for improvement:
   a. **Measuring impact and maximizing return on investment**: New Zealand invests significant resources in its science system. The panel can assess the impact of these investments and identify strategies to maximize the return on investment for the nation.

b. **Benchmarking against international best practices**: By comparing the New Zealand science system to other successful systems globally, the panel can identify areas for improvement and learn from best practices in other countries.
c. **Building a diverse and inclusive science workforce**: New Zealand needs to attract and retain talented researchers from all backgrounds to ensure the long-term sustainability of its science system. The panel can assess the current state of diversity and inclusion within the science workforce and recommend strategies for improvement.
d. **Enhancing public trust and engagement**: Public understanding and trust in science are crucial for informed decision-making and addressing societal challenges. The panel can explore ways to improve public engagement with science and strengthen the relationship between the science community and the public.
e. **Building a sustainable future for science in New Zealand**: The panel can provide a roadmap for the future of the New Zealand science system, ensuring its continued success and relevance in the face of evolving challenges and opportunities.

5. The panel will provide a comprehensive assessment of these issues, identify areas for improvement, and develop evidence-based recommendations for strengthening the science system. This will ensure New Zealand's science community, while small by global comparison, remains vibrant, impactful, and well-equipped to tackle the challenges and opportunities in the coming decades.

Purpose

6. These Terms of Reference provide high level guidance on the scope, method, governance, and timeframe of the work that the panel will undertake.

Objectives

7. The panel will:

a. Assess the effectiveness of the current science system in achieving its goals, including:
   i. Delivering research that addresses national priorities and challenges.
   ii. Fostering innovation and economic growth.
   iii. Building a strong, diverse, and inclusive science workforce.
   iv. Ensuring public understanding and engagement with science.

b. Identify strengths, weaknesses, barriers, opportunities, and threats within the system, including:
   i. Funding mechanisms and allocation strategies.
   ii. Research infrastructure and resources.
   iii. Collaboration and partnerships between stakeholders.
   iv. Regulatory frameworks, incentives and policies.
   v. Systems for research evaluation and impact assessment.
   vi. Career pathways and development opportunities for researchers.
   vii. International research partnerships and promoting innovation partnerships

c. Benchmark the New Zealand science system against international best practices and identify potential areas for learning and adaptation.

d. Develop a set of evidence-based recommendations for strengthening the science system and ensuring its future sustainability and success.

8. The panel's advice will focus on the following six areas of specific interest:

a. **The science funding system,** including the balance between competitive and stable funds, the best modalities of funding to achieve the opportunities for improvement described above, and the optimal mixture of funding instruments.

b. **Our public research institutions** (CRIs and Universities, the latter in terms of their research activities), including the optimal size, focus, number and role in the New Zealand science system.

c. **The optimal configuration of science organisations, infrastructure and funding to deliver on nationally critical science services, scientific monitoring, and national scale data collection, storage and provision**.

d. Pathways to increasing the focus of New Zealand's science system on advanced technologies.

e. **The best way for government to act as a commissioner and purchaser of science**, where that science is an input into delivery of the core roles of government, its ministries and its departments, including regional and local government. This advice should include considering how science purchasing should be planned, how government should decide upon and communicate its preferred direction, and how scarce resources should be distributed between competing demands for science from government departments.

f. **The role of Government's science funding bodies** including their focus, scope, mode of operation, and any opportunities to share resources and expertise.

Scope

9. The panel will cover the entirety of the New Zealand science system, including:

a. The processes of prioritization of expenditure within New Zealand's research investment. This includes:

i. Giving focus to ensuring excellence and impact of research as the primary goals of the research system.
ii. Ensuring a balanced portfolio of research across basic, applied and translational activities.
iii. Recognising that New Zealand as a small country cannot do everything in science and establish principles to be applied in prioritization.
iv. Recognising that research into New Zealand's own history, biota and indigenous knowledge (Mātauranga Māori) are important components of the New Zealand research system.
v. That New Zealand has research obligations to the Pacific and must be a relevant and active global partner in research

b. Public and private research institutions (universities, Crown Research Institutes, private research companies).
c. Funding agencies and bodies (Ministry of Business, Innovation and Employment, Health Research Council, Marsden Fund, Callaghan Innovation etc.).
d. Research infrastructure and facilities.
e. Science education and training pathways (in conjunction with the higher education review).
f. Regulatory frameworks and policies impacting research.
g. Interactions with the private sector and utilisation of research.
h. Public engagement and communication of science.

10. The panel will be coordinated with a review into aspects of higher education including the future of the PBRF and related incentive structures.

11. The Research and Development Tax Incentive will be out of scope for the panel's consideration, noting that a statutory independent evaluation is mandated by Parliament for the coming calendar year.

12. This panel is not charged with producing fully costed options or detail all the structural arrangements necessary to achieve the recommendations presented.

Approach

The panel will employ a mixed-methods approach, including:

- Document review: Analysis of existing reports, strategies, and data on the science system.
- Stakeholder consultations: with researchers, research and academic. leaders, policymakers, industry representatives and relevant interest groups.
- Comparative analysis of science systems in other countries.
- Data analysis: Examination of relevant data on research funding, outputs, and impacts.

Panel

13. The panel will consist of experts with diverse backgrounds and expertise in science, research, policy, and stakeholder engagement. The panel will be convened by MBIE with membership approved by the Minister of Science, Innovation and Technology, and will operate transparently and impartially.
14. The terms of reference including the composition of the panel is provided in Annex A.

Timeline

15. The panel process is expected to commence in early 2024 and be completed by October 2024. The work will be conducted in two phases.

16. Phase 1 will determine a set of high level recommendations and principles regarding the future of the science system. In particular it will focus on making recommendations related to enhancing the functions of the science system.

17. Phase 2 will address the changes in form or in operation that might be needed to ensure a more effective system appropriate for the coming decades. It will identify both short term actions and structural and other actions that might be considered over the longer term.

18. The final report will be submitted to MBIE and the Minister of Science, Innovation and Technology and made publicly available.

19. The anticipated timing of key deliverables is outlined as follows:

Deliverable	**Due Date**
Establishment of the Panel	January 2024
Terms of Reference approved	January 2024
Document review and baseline assessment	By March 2024
Stakeholder engagement and consultation	By April 2024

Phase 1 report by the Panel	By May 2024
Phase 2 report by the Panel	By 30 October 2024

Reporting

The panel will produce a comprehensive report that includes:

- An assessment of the current state of the New Zealand science system.
- An analysis of the key findings and recommendations for reform from the review.
- A clear and actionable roadmap for strengthening the science system.
- A plan for monitoring and evaluating the implementation of recommendations.

Funding

All costs related to the development of the High-Level Science Policy Review will be charged against MBIE's departmental budget. Personnel resources for the panel will be drawn from within MBIE.

Attachment A

Terms of Reference

Science System Advisory Panel

Purpose

1. Formation of the Panel to provide advice on the Science System.

Background

2. Within the Terms of Reference for the Advisory Panel, it was noted that the Minister of Science, Innovation and Technology has asked MBIE to convene and engage the Panel.

Scope

3. The Advisory Panel will lead the review on behalf of MBIE but will operate separately from officials throughout the review period.

4. It is expected that the Panel will leverage the expertise of the members and consider perspectives from a range of different backgrounds, with the intention of challenging, testing and reviewing the existing science and research system. This will ensure that the outcomes are sound, viable and well-considered.

5. To achieve this, the Panel will be provided with access to appropriate and relevant material and information as well as access to appropriate individuals within the relevant agencies.

6. It is expected that the delivery of the Panel's work will take until October 2024. The Panel will be involved in the entirety of the process, providing advice in the following areas as necessary:
   - The Panel will provide advice on public consultation activities.
   - The Panel will also provide advice, and consider any issues, on any other matters relating to the science system at the request of the Minister of Science, Innovation and Technology.

7. The advice provided will be non-binding. The Advisory Panel is not obliged to put forward one singular view if differences of opinion may arise.

8. The Minister of Science, Innovation and Technology may consider any advice provided but will retain responsibility for any recommendations to Government.

Term of Appointment

9. A term of appointment will commence from the date of appointment and will run until the completion of the Panel's work, which is expected to be by October 2024.

Meeting Frequency

10. The Panel will meet at a frequency determined by the Chair and agreed by MBIE.

Regular Reporting

11. The Panel will report at an agreed frequency, to be determined by the Chair and agreed with MBIE.

12. The Minister of Science, Innovation and Technology may choose to share updates with ministerial colleagues or Cabinet as appropriate.

Membership

13. The Panel will be convened by MBIE with feedback on membership provided by the Minister of Science, Innovation and Technology.

14. It is expected that the Panel will consist of up to nine members, who will collectively bring a wide range of expertise and experience, to support the quality of advice.

15. While a wide range of areas of expertise has been sought, a particular emphasis has been placed on public sector and government, science delivery and translation to actionable knowledge, and international experience.

Resourcing Requirements

16. A modest dedicated secretariat function will be established to provide support the requirements of the Panel to arrange meetings, source relevant documents and prepare reporting material.

17. The secretariat functions will be shared with the Higher Educational review.

Conflicts of Interest

18. Appropriate enquiries concerning conflicts of interest will be carried out to identify any conflicts of interest that could reasonably be identified.

19. If any conflicts of interest should arise during the term of the Panel, mitigations will be put in place to address these.

Annex Two: Short biographies of potential panel members

Candidate	Biography
Sir Peter Gluckman	Sir Peter Gluckman is a New Zealand scientist. He originally trained as a paediatrician and served as the inaugural Chief Science Advisor to the New Zealand Prime Minister from 2009 to 2018. He is a founding member and was the inaugural chair of the International Network for Government Science Advice and is the president of the International Science Council. *ONZ KNZM FRS FMedSci FRSNZ*
s 9(2)(a)	
Dr William Rolleston	Dr William Rolleston is the co-founder of the biotechnology and vaccine manufacturing company South Pacific Sera Limited. Dr Rolleston has a degree in medicine and has received many awards and accolades for his contribution to biotechnology. He was the founding chair of Aotearoa New Zealand's biotechnology industry association (now Biotech NZ), and the Life Sciences Network, as well as president of both New Zealand Federated Farmers and the World Farmers Organisation. Dr Rolleston has also served many roles as an advisor to central and local government. *CNZM*
s 9(2)(a)	
Ms Nadia Levin	Ms Levin is the CEO and Managing Director of Research Australia. Her career has included working across complex and highly regulated environments, and subject to high public scrutiny. Ms Levin held roles that saw her working in both the public and private sectors, as well as in an advisory role to Federal Government Minister. She was a Director of the Australian Synchrotron Board until 2015 and is on the Board of New Zealanders for Health Research.

	She is also PhD mentor in the Industry Mentoring Network in STEM (IMNIS) programme.
Dr Herman Hauser	Dr Hauser holds an MA in Physics from Vienna University and a PhD in Physics from the University of Cambridge. He is a Fellow of the Institute of Physics and of the Royal Academy of Engineering, and an Honorary Fellow of King's College, Cambridge. Dr Hauser holds honorary doctorates from the Universities of Bath, Loughborough, Anglia Ruskin, Strathclyde, Glasgow and York and was awarded an Honorary CBE for 'innovative service to the UK enterprise sector' in 2001. Dr Hauser co-founded Amadeus Capital Partners in 1997 with Anne Glover. In his long and successful history as an entrepreneur and venture capitalist, he has founded or co-founded companies in a wide range of technology sectors.
Professor Mark Ferguson	Professor Mark Ferguson is Chair of the Board of the European Innovation Council for the European Commission. He previously served as Director General of Science Foundation Ireland and Chief Scientific Adviser to the Government of Ireland. He has served on Boards and Committees internationally concerning research, innovation and science advice, eg Governing Boards of the Global Research Council and the European Union Joint Research Centre. Professor Ferguson is the recipient of numerous international research prizes and awards including the 2002 European Science Prize (jointly). His research interests include cellular and molecular mechanisms of wound healing and scarring and cleft palate developmental mechanisms.

Short-list of other potential candidates (not yet contacted)

Candidate	Biography
Distinguished Professor Hamish Spencer	Distinguished Professor Hamish Spencer is a professor of evolutionary biology, in the department of zoology at the University of Otago, holding a PhD in evolutionary biology from Harvard University. He specialises in using mathematical modelling and molecular genetics to understand the processes driving the evolution of the world's broad biodiversity. He is one of three New Zealand researchers to receive a Royal Society of New Zealand James Cook Research Fellowship, as well as serving as an editorial member for many reputable journals internationally and authoring many books and articles relating to his field of research.
Tracey McIntosh	Tracey McIntosh is Ngāi Tūhoe and is Professor of Indigenous Studies at the University of Auckland. She is the Chief Science Advisor for the Ministry of Social Development and a Commissioner of Te Kāhui Tātari Ture: Criminal Cases Review Commission. She was the former Co-Director of Ngā Pae o te Māramatanga New Zealand's Māori Centre of Research Excellence. She previously taught in the sociology and criminology programme at the University of Auckland. She was a Fulbright Visiting Lecturer in New Zealand Studies at Georgetown University in Washington D.C. and lectured at the University of the South Pacific in Fiji.

	She has sat on a number of assessment panels including PBRF panels, Marsden Social Science Panel, Rutherford Discovery, James Cook Fellowship and Health Research Council Panels. In 2012 she served as the co-chair of the Children's Commissioner's Expert Advisory Group on Solutions to Child Poverty. She was a member of the Welfare Expert Advisory Group, Te Uepū Hapai i te Ora-The Safe and Effective Justice Advisory Group and a member of the Advisory Commission into the Incarceration Rates of Australia. *MNZM*
Dr Barb Hayden	Dr Barb Hayden is a scientific pioneer in the mussel aquaculture industry and in biosecurity. She is the Chief Scientist Coasts and Oceans (NIWA) and leads NIWA's coasts and oceans research, which focuses on ecosystem-based approaches to managing activities in New Zealand's marine estate, so that economic and social benefits are realised while vulnerable components of the ecosystem are protected. As Chief Scientist of NIWA, she raised awareness of the need to protect biodiversity and established and chaired the first Ballast Water Working Group that was the genesis of marine biosecurity in New Zealand. In 2019 the NZMSS award was presented to Dr Hayden for her substantial contribution to marine science in New Zealand over a long and distinguished career that has included setting strategic research directions, leading major research programs, and mentoring emerging researchers.
s 9(2)(a)	

s 9(2)(a)

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Letter of appointment, Science System Advisory Group

Date:	10 January 2024	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2324-1506

Action sought		
	Action sought	**Deadline**
Hon Judith Collins **Minister of Science, Innovation, and Technology**	Noting	Click here to enter a date

Contact for telephone discussion (if required)				
Name	**Position**	**Telephone**		**1st contact**
Landon McMillan	Manager, Science Policy	s 9(2)(a)	s 9(2)(a)	✓
Abi Wood-Bodley	Policy Advisor			

The following departments/agencies have been consulted

Minister's office to complete:

- ☐ Approved
- ☐ Noted
- ☐ Seen
- ☐ See Minister's Notes
- ☐ Declined
- ☐ Needs change
- ☐ Overtaken by Events
- ☐ Withdrawn

Comments

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Letter of appointment, Science System Advisory Group

Date:	9 January 2024	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2324-1506

Purpose

To provide you with a draft Letter of Appointment for the appointment of members to the Science System Advisory Group, and to update you on progress to establish the Group.

Recommended action

The Ministry of Business, Innovation and Employment recommends that you:

a **Note** the Letter of Appointment for the Science System Advisory Group

Noted

Landon McMillan
Manager, Science Policy
Future Research System, MBIE

10 / 01 / 2024

Hon Judith Collins
Minister of Science, Innovation, and Technology

..... / ..... / .....

Background

1. At your meeting with officials on the 18 December 2023, you asked the Ministry of Business, Innovation and Employment (MBIE) to convene a Group to provide you with advice on:

   a. the current state of the science system

   b. areas for improvement

   c. core principles under which the system should operate, and

   d. actions to enhance the effectiveness and impact of the system.

2. On 20 December 2023 we provided you with an update on progress toward establishing the Science System Advisory Group (the Group) and sought your feedback on the Terms of Reference [2324-1430 refers].

3. This briefing provides you with a further update on progress to establish the Group, and a draft Letter of Appointment from MBIE to the prospective members.

Members

4. In our 20 December 2023 briefing, we provided you with a list of potential candidates, their biographies, and their availability for and interest in joining the Group. An update on those potential candidates is set out in Table One below.

Table One: Potential candidates and their interest and availability to be on the Group.

Potential member	Role	Experience and field	Response to invitation
Sir Peter Gluckman	Chair	Former Prime Minister's Chief Science Advisor, New Zealand; Health research.	Accepted
William Rolleston	Member	Co-founder of biotechnology company South Pacific Sera Limited; Biotechnology.	Accepted
s 9(2)(a)			
Nadia Levin	Member	CEO and Managing Director of Research Australia; Health research.	Accepted
Hermann Hauser	Member	Entrepreneur and venture capitalist. Innovation and technology systems; Physics.	To be confirmed
Mark Ferguson	Member	Board chair of the European Innovation Council. Science and research systems; Molecular biology.	Accepted
s 9(2)(a)			
Short-list of candidates with CRI, university or te ao Māori perspectives and expertise			
Hamish Spencer	Member	Distinguished professor of evolutionary biology, University of Otago; Evolutionary genetics.	Not approached
Tracey McIntosh	Member	Professor of Indigenous Studies, University of Auckland Chief Science Advisor for the Ministry of Social Development. Te Ao Māori expertise; Sociology	Not approached

Barb Hayden	Member	Chief Scientist Coasts and Oceans, NIWA. CRI perspective; Marine biology.	Not approached
s 9(2)(a)			

5. MBIE has been in touch with Dr Herman Hauser and s 9(2)(a) and are waiting for confirmation on their interest and availability.

6. s 9(2)(a) has declined the invitation for Group membership. MBIE is considering other potential members with Te Ao Māori knowledge and experience to suggest.

7. Given you have indicated the Group should have a whole of system view, MBIE believes that the fields of health and biology will be covered by prospective members Dr William Rolleston, Professor Mark Ferguson, s 9(2)(a), Professor Sir Peter Gluckman, and Ms Nadia Levin, and would like to consider prospective members from other fields of expertise (for example engineering and technology).

8. CRI membership is also yet to be finalised, and MBIE considers this as a further opportunity to include another prospective member who has expertise in Te Ao Māori on the Group.

9. We will approach prospective members from CRIs and Universities following your feedback to the draft Terms of Reference and timeframes, and after further discussion with Sir Peter.

10. We will also discuss with Sir Peter the possibility of using consultants to advise the Group, including those with innovation and early-stage company experience, like Mr Oren Gershtein.

Terms of Reference

11. In our briefing to you on 20 December 2023 we attached a draft Terms of Reference following our initial discussions with the proposed chair of the Group, Professor Sir Peter Gluckman.

12. MBIE have had an initial meeting with Professor Sir Peter Gluckman to discuss the Terms of Reference and have agreed to have a meeting in the week starting 15 January 2024 to continue the conversation about the Terms of Reference, timeframes and operation of the Group.

13. Sir Peter has indicated a proposed timeframe which has first phase (high level recommendations) delivered by May 2024, and a final report (institutional/operational arrangements) in by October. You have indicated a preference for a faster completion. MBIE will discuss with Sir Peter whether he is able to deliver it faster.

14. MBIE intends to send the final Terms of Reference to the prospective Group members as an attachment to the letters.

15. The draft Terms of Reference are included in Annex Two.

Draft Letter of Appointment

16. MBIE has drafted a Letter of Appointment to send to the prospective members who accept the invitation to sit on the Group (attached in Annex One).

17. The Letter briefly details the Group's responsibilities and expresses the Government's commitment to maintaining a thriving science system that delivers growth for New Zealand. It will also include the Group's Terms of Reference as an attachment, and a letter of acknowledgement and acceptance for those accepting the appointment to sign and return (attached in Annex Three).

Next steps

18. MBIE and your office to finalise Group membership.

19. MBIE to finalise the Letter of Appointment and Terms of Reference for discussion with members.

20. MBIE to send Letters of Appointment and final Terms of Reference to prospective members.

Annexes

Annex One: Draft Letter of Appointment

Annex Two: Draft Terms of Reference

Annex Three: Draft Acknowledgement and Acceptance

Annex One: Draft Letter of Appointment

[Insert recipient's address]
[Line two]
[Line three]
[Line four]

[Insert date]

Tēnā koe XXX,

Appointment to the Science System Advisory Group, established by the Ministry of Business, Innovation, and Employment.

It is with great pleasure that I offer you appointment as a member of the Science System Advisory Group, established by the Ministry of Business, Innovation and Employment (MBIE).

The Science System Advisory Group will be responsible for comprehensively assessing the state of the science system, identifying areas of improvement, establish core principles under which the system should operate in the coming decades, and proposing evidence-based actions to MBIE for the potential enhancement of its effectiveness and impact.

The Government is committed to maintaining a thriving system that delivers for New Zealand's economy, environment and society, and we look forward to your contribution to this effort.

Please find attached the Terms of Reference, which describe in more detail the roles and responsibilities, key deliverables and operational arrangements of the Group, as well as how to manage potential conflicts of interest.

If you wish to accept this appointment, please sign the attached Acknowledgement of Appointment and return it via email to XXXX [EMAIL ADDRESS]

Nāku iti noa, nā,

Nic Blakely,
Deputy Secretary,
Labour, Science and Enterprise
Ministry of Business, Innovation and Employment

Annex Two: Draft Attachments

Draft Terms of Reference – Science System Advisory Group

Introduction

1. The Government of New Zealand is committed to maintaining a thriving science system that delivers growth for New Zealand's economy, environment and society. The Science System Advisory Group (the Group) will comprehensively assess the current state of the science system, identify areas for improvement, establish core principles under which the system should operate in the coming decades, and propose evidence-based actions that could enhance its effectiveness and impact.

2. There are several compelling reasons why an assessment of the New Zealand science system is necessary and needed now. These include:
   a. **Economic transformation**: New Zealand needs to move towards a knowledge-based economy, and a robust science system is essential for driving innovation and economic growth.
   b. **Addressing emerging challenges**: New Zealand faces numerous pressing challenges, including climate change, biodiversity loss, sociological change, economic diversification, and an ageing population. A robust science system is crucial for developing innovative solutions to these challenges. However, the current system may not be fully equipped to address these complex issues effectively.
   c. **Adapting to a changing landscape**: The global research landscape is evolving rapidly, with new technologies, funding models, and collaboration opportunities emerging. The New Zealand science system needs to adapt to these changes to remain competitive and continue producing impactful research.
   d. **Governmental use of scientific data and knowledge:** The rapid emergence of big data, AI, and related technologies offers governments ways to enhance their effectiveness across social, environmental and economic domains.

3. The science system suffers from systematic concerns including:
   a. **Funding and allocation**: Concerns have been raised about the adequacy and sustainability of science funding, as well as the effectiveness of funding mechanisms in addressing national priorities.
   b. **Research infrastructure and resources**: Access to research facilities and equipment can be unevenly distributed, hindering research progress and collaboration.
   c. **Regulatory frameworks and incentives**: Regulatory frameworks and current incentives may not be conducive to the most effective management of research and research innovation or commercialisation.
   d. **System inefficiencies and fragmentation**: Concerns have been raised about inefficiencies in the current system, including excessive managerialism, complex funding mechanisms, fragmented research efforts, and limited collaboration between different stakeholders. A review can identify these issues and recommend solutions for streamlining and optimizing the system.
   e. **The state of the research workforce**
   f. The **over-competitive state** of the two major components of the public research system: the CRIs and Universities.

4. There are the following opportunities for improvement:
   a. **Measuring impact and maximizing return on investment**: New Zealand invests significant resources in its science system. The Group can assess the impact of these investments and identify strategies to maximize the return on investment for the nation.

b. **Benchmarking against international best practices**: By comparing the New Zealand science system to other successful systems globally, the Group can identify areas for improvement and learn from best practices in other countries.
c. **Building a diverse and inclusive science workforce**: New Zealand needs to attract and retain talented researchers from all backgrounds to ensure the long-term sustainability of its science system. The Group can assess the current state of diversity and inclusion within the science workforce and recommend strategies for improvement.
d. **Enhancing public trust and engagement**: Public understanding and trust in science are crucial for informed decision-making and addressing societal challenges. The Group can explore ways to improve public engagement with science and strengthen the relationship between the science community and the public.
e. **Building a sustainable future for science in New Zealand**: The Group can provide a roadmap for the future of the New Zealand science system, ensuring its continued success and relevance in the face of evolving challenges and opportunities.

5. The Group will provide a comprehensive assessment of these issues, identify areas for improvement, and develop evidence-based recommendations for strengthening the science system. This will ensure New Zealand's science community, while small by global comparison, remains vibrant, impactful, and well-equipped to tackle the challenges and opportunities in the coming decades.

Purpose

6. These Terms of Reference provide high level guidance on the scope, method, governance, and timeframe of the work that the group will undertake.

Objectives

7. The Group will:

a. Assess the effectiveness of the current science system in achieving its goals, including:
   i. Delivering research that addresses national priorities and challenges.
   ii. Fostering innovation and economic growth.
   iii. Building a strong, diverse, and inclusive science workforce.
   iv. Ensuring public understanding and engagement with science.

b. Identify strengths, weaknesses, barriers, opportunities, and threats within the system, including:
   i. Funding mechanisms and allocation strategies.
   ii. Research infrastructure and resources.
   iii. Collaboration and partnerships between stakeholders.
   iv. Regulatory frameworks, incentives and policies.
   v. Systems for research evaluation and impact assessment.
   vi. Career pathways and development opportunities for researchers.
   vii. International research partnerships and promoting innovation partnerships

c. Benchmark the New Zealand science system against international best practices and identify potential areas for learning and adaptation.

d. Develop a set of evidence-based recommendations for strengthening the science system and ensuring its future sustainability and success.

8. The Group's advice will focus on the following six areas of specific interest:

a. **The science funding system,** including the balance between competitive and stable funds, the best modalities of funding to achieve the opportunities for improvement described above, and the optimal mixture of funding instruments.

b. **Our public research institutions** (CRIs and Universities, the latter in terms of their research activities), including the optimal size, focus, number and role in the New Zealand science system.

c. **The optimal configuration of science organisations, infrastructure and funding to deliver on nationally critical science services, scientific monitoring, and national scale data collection, storage and provision**.

d. Pathways to increasing the focus of New Zealand's science system on advanced technologies.

e. **The best way for government to act as a commissioner and purchaser of science**, where that science is an input into delivery of the core roles of government, its ministries and its departments, including regional and local government. This advice should include considering how science purchasing should be planned, how government should decide upon and communicate its preferred direction, and how scarce resources should be distributed between competing demands for science from government departments.

f. **The role of Government's science funding bodies** including their focus, scope, mode of operation, and any opportunities to share resources and expertise.

Scope

9. The Group will cover the entirety of the New Zealand science system, including:

a. The processes of prioritization of expenditure within New Zealand's research investment. This includes:

i. Giving focus to ensuring excellence and impact of research as the primary goals of the research system.
ii. Ensuring a balanced portfolio of research across basic, applied and translational activities.
iii. Recognising that New Zealand as a small country cannot do everything in science and establish principles to be applied in prioritization.
iv. Recognising that research into New Zealand's own history, biota and indigenous knowledge (Mātauranga Māori) are important components of the New Zealand research system.
v. That New Zealand has research obligations to the Pacific and must be a relevant and active global partner in research

b. Public and private research institutions (universities, Crown Research Institutes, private research companies).
c. Funding agencies and bodies (Ministry of Business, Innovation and Employment, Health Research Council, Marsden Fund, Callaghan Innovation etc.).
d. Research infrastructure and facilities.
e. Science education and training pathways (in conjunction with the higher education review).
f. Regulatory frameworks and policies impacting research.
g. Interactions with the private sector and utilisation of research.
h. Public engagement and communication of science.

10. The Group will be coordinated with a review into aspects of higher education including the future of the PBRF and related incentive structures.

11. The Research and Development Tax Incentive will be out of scope for the Group's consideration, noting that a statutory independent evaluation is mandated by Parliament for the coming calendar year.

12. This Group is not charged with producing fully costed options or detail all the structural arrangements necessary to achieve the recommendations presented.

Approach

The Group will employ a mixed-methods approach, including:

- Document review: Analysis of existing reports, strategies, and data on the science system.
- Stakeholder consultations: with researchers, research and academic. leaders, policymakers, industry representatives and relevant interest groups.
- Comparative analysis of science systems in other countries.
- Data analysis: Examination of relevant data on research funding, outputs, and impacts.

Group

13. The Group will consist of experts with diverse backgrounds and expertise in science, research, policy, and stakeholder engagement. The Group will be convened by MBIE with membership approved by the Minister of Science, Innovation and Technology, and will operate transparently and impartially.
14. The terms of reference including the composition of the Group is provided in Annex A.

Timeline

15. The Group process is expected to commence in early 2024 and be completed by October 2024. The work will be conducted in two phases.

16. Phase 1 will determine a set of high level recommendations and principles regarding the future of the science system. In particular it will focus on making recommendations related to enhancing the functions of the science system.

17. Phase 2 will address the changes in form or in operation that might be needed to ensure a more effective system appropriate for the coming decades. It will identify both short term actions and structural and other actions that might be considered over the longer term.

18. The final report will be submitted to MBIE and the Minister of Science, Innovation and Technology and made publicly available.

19. The anticipated timing of key deliverables is outlined as follows:

Deliverable	**Due Date**
Establishment of the Group	January 2024
Terms of Reference approved	January 2024
Document review and baseline assessment	By March 2024
Stakeholder engagement and consultation	By April 2024

Phase 1 report by the Group	By May 2024
Phase 2 report by the Group	By 30 October 2024

Reporting

The Group will produce a comprehensive report that includes:

- An assessment of the current state of the New Zealand science system.
- An analysis of the key findings and recommendations for reform from the review.
- A clear and actionable roadmap for strengthening the science system.
- A plan for monitoring and evaluating the implementation of recommendations.

Funding

All costs related to the development of the High-Level Science Policy Review will be charged against MBIE's departmental budget. Personnel resources for the Group will be drawn from within MBIE.

Terms of Reference

Science System Advisory Group

Purpose

1. Formation of the Group to provide advice on the Science System.

Background

2. Within the Terms of Reference for the Advisory Group, it was noted that the Minister of Science, Innovation and Technology has asked MBIE to convene and engage the Group.

Scope

3. The Advisory Group will lead the review on behalf of MBIE but will operate separately from officials throughout the review period.

4. It is expected that the Group will leverage the expertise of the members and consider perspectives from a range of different backgrounds, with the intention of challenging, testing and reviewing the existing science and research system. This will ensure that the outcomes are sound, viable and well-considered.

5. To achieve this, the Group will be provided with access to appropriate and relevant material and information as well as access to appropriate individuals within the relevant agencies.

6. It is expected that the delivery of the Group's work will take until October 2024. The Group will be involved in the entirety of the process, providing advice in the following areas as necessary:
   - The Group will provide advice on public consultation activities.
   - The Group will also provide advice, and consider any issues, on any other matters relating to the science system at the request of the Minister of Science, Innovation and Technology.

7. The advice provided will be non-binding. The Advisory Group is not obliged to put forward one singular view if differences of opinion may arise.

8. The Minister of Science, Innovation and Technology may consider any advice provided but will retain responsibility for any recommendations to Government.

Term of Appointment

9. A term of appointment will commence from the date of appointment and will run until the completion of the Group's work, which is expected to be by October 2024.

Meeting Frequency

10. The Group will meet at a frequency determined by the Chair and agreed by MBIE.

Regular Reporting

11. The Group will report at an agreed frequency, to be determined by the Chair and agreed with MBIE.

12. The Minister of Science, Innovation and Technology may choose to share updates with ministerial colleagues or Cabinet as appropriate.

Membership

13. The Group will be convened by MBIE with feedback on membership provided by the Minister of Science, Innovation and Technology.

14. It is expected that the Group will consist of up to nine members, who will collectively bring a wide range of expertise and experience, to support the quality of advice.

15. While a wide range of areas of expertise has been sought, a particular emphasis has been placed on public sector and government, science delivery and translation to actionable knowledge, and international experience.

Resourcing Requirements

16. A modest dedicated secretariat function will be established to provide support the requirements of the Group to arrange meetings, source relevant documents and prepare reporting material.

17. The secretariat functions will be shared with the Higher Educational review.

Conflicts of Interest

18. Appropriate enquiries concerning conflicts of interest will be carried out to identify any conflicts of interest that could reasonably be identified.

19. If any conflicts of interest should arise during the term of the Group, mitigations will be put in place to address these.

Annex Three: Draft Acknowledgement and Acceptance

Nic Blakely,
Deputy Secretary,
Labour, Science, and Enterprise,
Ministry of Business, Innovation and Employment

Tēnā koe,

I acknowledge receipt of your letter appointing me as a member of the Science System Advisory Group.

I am aware of the need to disclose and manage any conflicts of interest as they arise, and aware of how to manage confidential information.

I accept the appointment to the Science System Advisory Group.

Signed:

Name:

Date:

Please return via email to: XXXX

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Science System Advisory Group, Membership Update

Date:	19 January 2024	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2324-1626

Action sought		
	Action sought	**Deadline**
Hon Judith Collins **Minister of Science, Innovation and Technology**	**Agree** that MBIE proceed to the final arrangements for Group establishment.	25 January 2024

Contact for telephone discussion (if required)				
Name	**Position**	**Telephone**		**1st contact**
Landon McMillan	Manager, Science Policy	s 9(2)(a)	s 9(2)(a)	✓
Abigail Wood-Bodley	Policy Advisor			

The following departments/agencies have been consulted

Minister's office to complete:

- ☐ Approved
- ☐ Noted
- ☐ Seen
- ☐ See Minister's Notes
- ☐ Declined
- ☐ Needs change
- ☐ Overtaken by Events
- ☐ Withdrawn

Comments

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

BRIEFING

Title

Date:	19 January 2024	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2324-1626

Purpose

To provide you with an update on the membership and progress on the operational arrangements of the Science System Advisory Group, being established by the Ministry of Business, Innovation and Employment.

Recommended action

The Ministry of Business, Innovation and Employment recommends that you:

a **Note** the membership update for the Science System Advisory Group.

Noted

b **Agree** that MBIE proceed to the final arrangements for Group establishment.

Agree / Disagree

Landon McMillan
Manager, Science Policy
Labour, Science and Enterprise, MBIE

25/01/2024

Hon Judith Collins
Minister of Science, Innovation and Technology

..... / ..... / .....

Background

1. At your meeting with officials on the 18 December 2023, you asked the Ministry of Business, Innovation and Employment (MBIE) to convene a Group to provide you with advice on:

   a. the current state of the science system

   b. areas for improvement

   c. core principles under which the system should operate, and

   d. actions to enhance the effectiveness and impact of the system.

2. On 10 January 2024, we provided you with an update on the progress towards establishing the Science System Advisory Group (the Group). This included an update on membership, and the Terms of Reference, as well as providing you with a draft Letter of Appointment from MBIE to prospective members [2324-1506 refers].

3. This briefing provides you with an update on the membership of the Group and progress on the operational arrangements.

Group Membership

4. In our 10 January 2024 briefing, we provided you with an updated list of candidates, their availability, and their interest in joining the Group. A final update on those potential candidates is set out below in Table One.

Table One: Candidates and their interest and availability to be on the Group.

Potential member	Role	Experience and field	Response to invitation
Sir Peter Gluckman	Chair	Former Prime Minister's Chief Science Advisor, New Zealand; Health research.	Accepted
William Rolleston	Member	Co-founder of biotechnology company South Pacific Sera Limited; Biotechnology.	Accepted
Nadia Levin	Member	CEO and Managing Director of Research Australia; Health research.	Accepted
Hermann Hauser	Member	Entrepreneur and venture capitalist. Innovation and technology systems; Physics.	Accepted
Mark Ferguson	Member	Board chair of the European Innovation Council. Science and research systems; Molecular biology.	Accepted
Michael Ahie	Member	Pro Chancellor, Massey University. Chair, Plant and Food Research Board of Directors, Food Safety Assurance Advisory Council, ComplyWith NZ Ldt, and the Plant Market Access Council. Founder of AtlasQ New Zealand. Te Ao Māori expertise; Business.	Accepted
Hamish Spencer	Member	Distinguished professor of evolutionary biology, University of Otago; Evolutionary genetics.	Accepted
Tracey McIntosh	Member	Professor of Indigenous Studies, University of Auckland, Chief Science Advisor for the Ministry of Social Development. Te Ao Māori expertise; Sociology.	Accepted
Barb Hayden	Member	Lead science advisor, coasts and oceans research, NIWA; Marine biology.	Accepted

5. Following our conversation with you on 15 January 2024 we have also approach Hamish Spencer and Tracey McIntosh, both of whom have accepted.

6. Following discussions with Professor Sir Peter Gluckman we have made the addition of Dr Barb Hayden and propose the addition of Mr Michael Ahie as members of the group, to ensure representation from the Crown Research Institutes (CRI).

7. Mr Michael Ahie was suggested to us by Professor Sir Peter Gluckman. He brings a wealth of experience including CRI board membership, involvement in establishing Callaghan Innovation, and Te Ao Māori. He is also Pro Chancellor of Massey University. Mr Ahie was previously a member of the National Research Priorities Independent Strategic Panel.

8. Dr Barb Hayden is an esteemed marine biologist, specialising in marine biosecurity and environmental sustainability of aqua culture. Currently she leads NIWA's coasts and oceans research, which focuses on ecosystem-based approaches to managing activities in New Zealand's marine estate, so that economic and social benefits are realised while vulnerable components of the ecosystem are protected.

9. s9(2)(f)(iv)

10. s9(2)(f)(iv)

11. We also plan to contract Mr Oren Gershtein to the Group as an advisor; Professor Sir Peter has a particular interest in his expertise on intellectual property translation pathways.

12. We are comfortable with the prospective members and are ready to proceed to the final stages of the Group's establishment. Letters of appointment will be sent to members alongside the final Terms of Reference (attached as Annex One).

Operational Arrangements for the Group

13. Professor Sir Peter Gluckman has agreed that the group will deliver a preliminary report in May. This report will contain sufficient initial recommendations to enable work to commence on a reform programme relatively quickly.

14. The terms of reference ask the preliminary report to focus on:

    a. Determining a set of principles for the system.

    b. Preliminary advice on institutional arrangements, funding, advanced technology and commercialisation, the role of Government as a funder and commissioner of science, and workforce connectedness.

    c. Recommendations that can be actioned in the near term and without major structural changes.

15. The final report will come through in October and address broader structural reform issues.

16. We have agreed to contract administrative functions to Koi Tū – the Centre for Informed Futures, an independent think tank at the University of Auckland associated with Professor

Sir Peter Gluckman. He believes it will be more efficient to maintain administrative function close to the Chair and we agree.

17. We will liaise with Koi Tū to provide the Group with data, background information, and other relevant information to support the work of the Group.

Communications

18. We are exploring the option of announcing the Group before 12 February 2024 and co-ordinating it with potential announcements from Minister Simmonds' office on the advisory group being established for the higher education sector.

19. We will work with your office on the communication messages and potential dates for an announcement.

20. You are meeting with the CRI board chairs and Chief Executives on 30 January 2024. This could be an opportunity for you to signal the Group's establishment.

Next steps

21. MBIE to send the Letters of Appointment and final Terms of Reference to Members by 26 January 2024.

22. MBIE and Group Chair, Professor Sir Peter Gluckman, to finalise operational arrangements.

Annexes

Annex One: Final Terms of Reference

Annex One: Final Terms of Reference

Purpose

1. MBIE is convening a Science System Advisory Group (the Group) to develop a set of evidence-based recommendations to strengthen the science, innovation and technology system and ensure its future success.

2. This document sets out the Terms of Reference for the Group.

The aspiration

3. The Government is committed to building a thriving science, innovation, and technology system (the system) that delivers growth for New Zealand's economy, environment, and society by:
   - Driving innovation and accelerate the shift towards a knowledge-based, diversified economy.
   - Developing innovative solutions to emerging challenges such as climate change, biodiversity loss, and sociological change.
   - Adapting to, and making good of opportunities provided by, a rapidly evolving global research landscape.
   - Enhancing Government's effectiveness through the use scientific data, knowledge, and new technologies.

The challenges

4. The systematic issues limiting the performance of the system include:

   - **Funding**: The adequacy, sustainability, and balance of funding in areas of national and system importance, and effectiveness of funding mechanisms.
   - **Research infrastructure**: Uneven access to research facilities and equipment, hindering research progress and collaboration.
   - **Regulatory frameworks and incentives**: These may not be conducive to the most effective management of research and research innovation or commercialisation.
   - **System inefficiencies and fragmentation**: The system experiences inefficiencies, such as excessive managerialism, complex funding mechanisms, fragmented research efforts, and limited collaboration between different stakeholders.
   - **Workforce:** Career pathways are uncertain, diversity is limited, Māori and Pacific Peoples are under-represented and under-served, and there are difficulties in attracting and retaining the best talent.
   - **Competition:** Competition between research organisations limits collaboration and benefit to New Zealand.
   - **Industry:** co-ordination across government and industry need strategic redevelopment, Industry co-operation and support is not well positioned to adapt to emerging markets (e.g., India etc).

- **International:** New Zealand as a small country needs to exploit international partnerships in both research and innovation (including access to capital). International science funding is largely ad hoc and not co-ordinated across government to assist diplomatically.

Function, scope, and approach

Function

5. The purpose of the Group is to provide strategic recommendations to MBIE on options to improve the effectiveness and impact of New Zealand's science, innovation, and technology system, as informed by the aspirations and systemic challenges described above.

Scope

6. Except where noted below, the Group may consider any matters within New Zealand science, innovation and technology system that are relevant to the completion of its reports.

7. The following areas are out of scope:

    - The Research and Development Tax Incentive, as a statutory independent evaluation is mandated by Parliament for the coming calendar year.
    - The planned Biotechnology Regulator, given the highly specific and technical issues involved.

8. The Group will be connected to, but is not responsible for, a parallel review into aspects of higher education including the future of the Performance-Based Research Fund and related incentive structures.

9. The Group is not required to produce fully costed options or completely detail any structural arrangements necessary to achieve the recommendations presented.

Approach

10. The work of the Group will proceed in two phases. The first phase will be completed by 31 May 2024, the second by 30 October 2024.

11. Phase 1 will determine a set of principles, provide preliminary advice on the topics of focus as set out below, and recommendations that can be actioned in the near term and without major structural changes.

12. Phase 2 will continue to address the topics of focus but provide final recommendations and longer-term changes that would ensure the effective operation of the system in coming decades.

Topics of focus

The Group will provide advice on the following topics of focus.

Institutions

- What are the appropriate functions, scopes and structures of Crown Research Institutes and other Crown-owned research organisations to ensure they are better placed to deliver impact for New Zealand?

- What is needed to effectively deliver science services of ongoing importance to New Zealand, such as national monitoring systems for weather and geohazards, national surveys, national databases and collections.
- How can the contributions of universities to research be strengthened within the overall science system?

Funding

- What sort of mechanisms could be established to identify funding priorities?
- What could be done to improve the effectiveness of our funding mechanisms?
- How can the funding system better serve under-represented and under-served communities, such as Māori and Pacific Peoples and increase diversity within the science, innovation, and technology workforce?
- What is an appropriate balance of funding between:
    - Areas of system importance? For example, competitions, short versus longer term contracts, institutions, workforce initiatives, infrastructure, and commercialisation.
    - Areas of national importance? For example, sectors, science disciplines, wicked problems.

Advanced technology and commercialisation

- What form should Government's investments in advanced technology take?
- How can we strengthen and grow commercialisation pathways?
- How can we strengthen our ability to take advantage of opportunities around eResearch? This should consider the future of our High-Performance Computing infrastructure and the role of artificial intelligence.
- How can we improve the role and function of Callaghan Innovation? What role and function do industry, incubators, and other government agencies (e.g., NZTE) play in this?

Government as a commissioner, funder, and user of science

- How can Government most effectively prioritise and commission science where it is the main user of the outputs?
- How could public funders of science, innovation and technology be best configured?

Workforce and connectedness

- What is needed to ensure we are developing a science, innovation and technology workforce that will meet our future needs and challenges?
- How can opportunities and solutions for Mātauranga be better realised within the system?
- What is needed to deliver greater diversity with the science, innovation and technology workforce, and participation of under-represented and under-served groups such as Māori and Pacific Peoples?
- How can we grow key international linkages and strengthening the role of science in diplomacy?

- How can we lift awareness and appreciation of the role and impact science, innovation and technology have on the economy, society, and environment?
- How can we develop better connectedness with the higher education system?

13. The Group is not limited by these topics and questions and may provide advice on other matters it sees fit.

14. The review will include but is not limited to document reviews, stakeholder and expert consultation and input (including internationally), site visits and data analysis.

15. MBIE or the Minister of Science, Innovation and Technology may seek advice from the Group about other questions or proposals as needed.

Administration

Membership

16. The Group will be chaired by Professor Sir Peter Gluckman. Members will collectively bring diverse backgrounds and bring expertise in science, research, innovation, technology, mātauranga, policy, and stakeholder engagement.

17. Members are appointed:
    - as individuals and expected to provide impartial advice.
    - until 30 October 2024, but may be extended if agreed by the Chair and MBIE.

Meeting frequency

18. The group will meet (either in person or virtually) at a frequency determined by the Chair and agreed by MBIE. Other work (including site visit, workshops or similar) and meetings may be required in person of all or some members between meetings of the Group.

Reporting

19. The group will report at a frequency determined by the Chair and agreed with MBIE.

Timeline

20. The timeline for key deliverables is:

Deliverable	**Completed by**
Members appointed and Terms of Reference approved	31 Jan 2024
Group announced	Late Feb 2024
Phase 1 report provided to MBIE	31 May 2024
Phase 2 report provided to MBIE	30 Oct 2024

Conflicts of Interest

21. Members should be aware of all actual, perceived, and potential conflicts of interest and notify the Chair before any meeting. The Secretariat will maintain a register of notified conflicts.

22. If any conflicts of interest should arise during the term of the Group, the Chair is responsible for determining mitigations to address them.

Secretariat

23. Secretariat support will be overseen by the Chair and provided by Koi Tū: The Centre for Informed Futures.

Remuneration.

24. Renumeration will not be paid to members who are employees of government agencies listed in Schedule 2 of the Public Service Act 2020. Their employer is responsible for meeting all costs associated with their membership on the Group.

25. All other members are entitled to compensation per day of meeting or other work agreed by the Chair and MBIE. Remuneration will be set according to guidance set out in Cabinet Office Circular *CO(22)2: Revised Fees Framework for members appointed to bodies in which the Crown has an interest*. Travel and accommodation will be booked for and paid through *Koi Tū: The Centre for Informed Futures*.

Funding

26. MBIE will fund *Koi Tū: The Centre for Informed Futures* to provide secretariat support for the Group.

27. Other cost-generating activities will be agreed by the Chair and MBIE before the costs are incurred.