

Terms of Reference: Science System Advisory Group

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 needs strategic redevelopment, Industry co-operation and support is not well positioned to adapt to emerging markets (for example, India).
- **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 30 June 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 considered and actioned quickly.
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

13. 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 research contributions of universities 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, for example, 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?

14. The Group is not limited by the above topics and questions and may provide advice on other matters it sees fit.

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

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

Administration

Membership

17. 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.

18. 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

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

Reporting

20. The group will report at a frequency determined by the Chair and agreed with MBIE, with the primary reports being provided to MBIE in two phases:

- Phase 1 report, by 30 June 2024
- Phase 2 report, by 30 October 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. The Chair is responsible for determining mitigations to address any conflicts of interest that arise.

Secretariat

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

Remuneration.

24. Remuneration 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 the University of Auckland to enable *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.