**Submission to the APS Review – Independent scientific and technical advice and government support for science and research**

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The APS Review is an opportunity to examine how the Commonwealth Government can best support scientific and technical advice to further policy design, and how it should fund science, research and innovation in the national interest. Science and research are at the heart of Australia’s future prosperity.

Present arrangements have evolved incrementally and have not been comprehensively reviewed for many years, so it is an open question as to whether they remain optimal, whether they are sufficient to ensure the provision of the best advice in a timely manner, and they adequately align to the needs of the Commonwealth government and Australian public. At present it is unclear how scientific and technical advice is mapped into the strategic policy agenda across the APS.

Australia and the APS needs a science, research and innovation system that is both responsive to government, industry and community, as well as having the capability to deliver for longer term horizons. Alongside translational and applied research and innovation initiatives, the system must maintain and build its capacity for fundamental science to best meet future calls on the system, such as a major epidemic or disaster. Getting the policy, funding and governance architecture right for science, research and innovation will ensure the system can optimally balance the requirements of industry, government and community with the need to maintain capacity.

**Recommendations**

**Recommendation 1:**

The APS and ministries should be structured such that there is a single main “champion” for science, research and innovation in government and in cabinet, with a Minister responsible for optimising all direct government investment in science, research and innovation.

**Recommendation 2:**

A transparent process should be implemented for priority setting for investment in science, research and innovation, that meets the needs of government. This should be through an independent body, such as a national council for science and innovation led by the Chief Scientist, which supports existing and future capacity.

**Recommendation 3:**

Priorities for investment in science, research and innovation which are set through the independent body should drive allocation of all funding from a single, legislatively protected pool, in the form of an endowment, with the aim to ensure investment remains stable

**Summary of key issues**

There are key issues to resolve relating to how the Commonwealth Government supports scientific and technical advice to further policy design, and how it should fund science, research and innovation in the national interest.

**Currently there is still some way to go to achieve a “critical mass” in government for science, research and innovation:**

Science, research and innovation lacks a critical mass in government and there is no single champion for science and research within government. Responsibility is divided between a number of ministers of different seniority, and agency heads. The role of the Chief Scientist, a position which should be a main champion, needs to be extended. At present it is difficult to ensure a coherent approach to support for science, research and innovation and ensure that it is a national priority. This makes the task difficult of aligning investment in science, research and innovation with the strategic aims of the National Science and Innovation Agenda.

**The system would benefit from more transparency over funding allocation and investment logic:**

At present there is not enough transparency over investment logics and how allocation of resources matches government priorities for investment in science, research and innovation, such as through the current National Science and Innovation Agenda. This means that the capacity for scientific and technical advice to further policy design is uncertain, as investment priorities and processes may not support the best research as informed by leading science and expertise. Policy development benefits when it is informed by science and the science community.

**There is a level of incoherence in organisational and governance structures:**

The Current policy architecture for science, research and innovation is fragmented across departments and agencies, and competitive dynamics are often misaligned across the system. Current division between Competitive Funding Agencies (ARC/NHMRC), Government Science Agencies (CSIRO/BOM/ANSTO) and Research Block Grants (support for research in universities, RTP/RSP) often lacks coherence, such that it is unable to effectively meet industry, government and community needs while ensuring current capacity is maintained and strengthened across the system.

**Public investment is increasingly misaligned:**

Australia has traditionally had a thriving science and innovation community, which has benefited from strong public commitment and investment. This is at risk compared to leading international systems, most strikingly shown when compared to the US. While larger, the US has achieved much of its success because it invests a greater proportion of discretionary public funding (US Federal Government) in science, research and innovation, as figure 1 demonstrates. Australia needs to increase its public investment in science and innovation to achieve a similar depth of commitment.

Figure 1: Proportion of discretionary (excludes health and welfare) direct government expenditure on R&D, Australia and US, 1998 to 2017

In recent years, Australia has invested much additional funding in tax offsets, but not in its science agencies, as figure 2 illustrates. As the SRI data shows, government investment in R&D tax measures has grown in real terms while government funded science agencies have remained flat since the late 1970s. The Australian Government has recently grown investment in the Medical Research Future Fund, but it needs to continue to increase direct funding for science and research, including through its science agencies.

Figure 2: Government funding for selected R&D activities, 2016 inflation adjusted dollars (source SRI tables)

**Additional considerations for the Review related to science, research and innovation**

There are additional considerations the Review might consider, as follows:

1. **Independence:** Consider whether or not relevant science functions should be performed and seen to be performed in a day to day sense independently of a government and minister and of party-political influence, as well as to ensure this is not inconsistent with a provision which gives the minister a reserve power of direction.
2. **Processes:** Examine processes and interactions between different agencies and public, government and APS, such that structures ensure that procedures for defining objectives and identifying areas requiring scientific investigation or technical development as done so by experts and that there is appropriate mechanism in place that ensure evidence-based policy design.
3. **Internationalised:** Explore major national level international opportunities, such as the possibility of Australia participating in Horizon Europe through subscription to the initiative so as to leverage new prospects for collaboration and funding.
4. **Resourcing:** Explore the role that allocation of financial and staffing resources has on the provision of advice, especially as it relates to budgetary limits set for broad project categories and in accordance with guidelines set in negotiation with government.
5. **Timeframes:** Assess whether current arrangements and process allow for urgent advice, as well as that which needs to inform policy decisions decades ahead.
6. **Communication:** Examine issues around communication of findings which are seen to be driven by the science and no other agendas, such as immediate political concerns. Greater opportunity for communication, especially with other scientists but also with potential users in the community.
7. **Agencies:** For government supported science agencies, explore whether structures and conditions of employment should involve clear demarcation between elected officials and expert bodies, a statutory corporation may be preferable to department.