



## **Australian Government**

Australian Government response to the  
Senate Economics References Committee report:

Australia's Innovation System

DECEMBER 2016

## Introduction

The Senate Inquiry into Australia's Innovation System (the Inquiry) was conducted by the Senate Economics References Committee (the Committee). The aim of the Inquiry was to identify and examine the challenges to Australian industries and jobs posed by increasing global competition in innovation, science, engineering, research and education. The Committee delivered its final report on 3 December 2015. This report is to be read in conjunction with an interim report and an issues paper authored by Professor Roy Green, tabled together on 19 August 2015.

The Australian Government's vision for the future is for a strong, dynamic and digitally sophisticated economy – one that is characterised by a network of globally engaged, high growth businesses that innovate, exploit falling entry costs to markets and successfully integrate into global supply chains. This new economy is powered by skilled and educated Australians working in rewarding and well-paying jobs. Public support for the key components of the innovation system – including education, science and research, market frameworks, and infrastructure – has proven historically vital for economic growth throughout the most successful industrialised countries. To secure Australia's future economic prosperity, a serious, long term approach to catalysing and supporting innovation is required.

The National Innovation and Science Agenda (the NISA), released on 7 December 2015, is the start of a long-term plan by the Government to secure Australia's future economic prosperity. It recognises that innovation is a major driving force for productivity, growth and jobs. The NISA sets out the Government's vision for Australia's innovation, research and science ecosystem. It is designed to spur innovation and entrepreneurship, enhance cutting edge national research infrastructure, address barriers to success and enable Australia to seize the opportunities afforded by innovation. The NISA will help to build internationally competitive and sustainable businesses, extract greater commercial value from our strong research outputs, increase our productivity and afford Australians high skilled employment opportunities. The Government will continue to advance the innovation agenda by increasing efforts and pursuing new opportunities under future NISA activities.

In 2016–17, we are on track to provide \$10.1 billion to support research and experimental development. This is an increase of 3.55 per cent on the Budget Estimate of \$9.7 billion in 2015–16. Over the last ten years, Government support for R&D has increased by 52 per cent —from over \$6.6 billion to \$10.1 billion. As part of this, the NISA contains measures worth more than \$1.1 billion.

The Government has established Innovation and Science Australia (ISA) as the new independent body responsible for advising the Government on all science, research and innovation matters. ISA's first task is to undertake an audit of Australia's science, research and innovation system to inform the development of a 2030 Strategic Plan for the Australian innovation, science and research system. The plan will identify investment priorities and specific areas for policy reform for the Government to consider to improve Australia's innovation system. The Committee's report will be a useful information source for ISA in undertaking this work.

The Government thanks the Committee, Professor Green and all those assisting the Inquiry for their contributions to this matter of vital national interest.

## Response to recommendations

*Recommendation 1:* The Committee recommends that the Australian Government commits to maintaining stable, coherent and effective administrative arrangements for innovation policies and programs, based on a long-term strategic framework and a target to lift investment in research and development to three per cent of GDP.

*Recommendation 2:* The Committee recommends the establishment of an independent government agency with a mandate to administer and coordinate innovation system policies and programs. Such a body would be responsible for maintaining a continuous and consistent approach to innovation policy across the whole of government.

The Government agrees with the Committee's recommendations to establish an independent government agency to administer and coordinate innovation policies, and to maintain effective administrative arrangements for innovation policies and programs, based on a long-term strategic framework.

Innovation ecosystems are inherently complex and require a flexible approach to ensure new opportunities and challenges can be acted on. In order for these systems to perform effectively to deliver increased productivity and competitiveness, governments must develop consistent and stable policies for innovation. Stability does not mean innovation initiatives ought not to be subject to review or improvement. Innovation policies need to be multifaceted, adaptive and address the entire innovation cycle to achieve genuine change at a national level. They also need to be aligned with a long term strategic framework, evaluated against comprehensive and quantifiable social and economic targets, and delivered transparently and efficiently.

This policy approach will be achieved through the implementation of the NISA and the establishment of a new independent body, ISA, which will be responsible for advising the Government on all science, research and innovation matters. ISA complements the Commonwealth Science Council, which will continue to advise Government on high level science challenges facing Australia. ISA will be supported by a CEO accountable through the Minister for Industry, Innovation and Science to the new Innovation and Science Committee of Cabinet, chaired by the Prime Minister. This committee, supported by ISA, will ensure a consistent and whole-of-Government approach to innovation and science policy.

The Government notes the Committee's recommendation regarding a 3% target for R&D relates to combined public and private investment. It is important that Australia has effective policies which drive new private expenditure on R&D and create a supportive environment to encourage industry to lead the way on R&D expenditure, for the benefit of both industry and the broader economy. This is being achieved through measures under the NISA supporting new investment and capital formation in innovative businesses, for example:

- *New arrangements for Venture Capital Limited Partnerships.* The Government has made a number of reforms to the venture capital regime to make it more internationally competitive and attract greater levels of venture capital investment. These reforms include making available a tax concession for investment in new Early Stage Venture Capital Limited Partnerships to incentivise investments in businesses at the early and growth stages of the startup life-cycle. In addition, other changes made to the venture capital regime will allow managers to undertake a broader range of investment activities and enable a greater diversity of investors to participate.
- *Tax incentives for early stage investors.* New tax concessions are now available to incentivise investors to support early stage innovative companies with high-growth

potential. These concessions can be claimed by eligible investors from the 2016-17 income year for investments in qualifying early stage innovation companies. The aim of these new tax incentives is to promote a culture of entrepreneurship and innovation by connecting innovative startup companies with investors who offer the funds and business experience needed to develop concepts and commercialise ideas.

- *Biomedical Translation Fund.* The Government is establishing the new \$500 million Biomedical Translation Fund to translate our world-leading health and medical research from the laboratory to the marketplace. The Government is providing \$250 million to be at least matched by private capital. The Fund will draw on fund managers selected through a competitive process, to bring at least matching funding from the private sector for investment in promising biomedical innovation and commercialisation.

As of 2013-14, Australia's gross expenditure on R&D (businesses, government, private, non-profit and higher education sectors) was \$33.5 billion, or 2.12% as a proportion of GDP. In 2016-17, we are on track to provide \$10.1 billion to support research and experimental development. This is an increase of 3.55 per cent on the Budget Estimate of \$9.7 billion in 2015-16. Over the last ten years, Australian Government support for R&D has increased by 52 per cent, from over \$6.6 billion to \$10.1 billion.

Government support for R&D includes support provided through the R&D Tax Incentive, which was recently reviewed by an independent panel in order to identify opportunities to improve its effectiveness and integrity, including sharpening its focus on encouraging additional R&D spending by the private sector. The Government is considering the findings of the review, which were released to the public on 28 September 2016. The Government has also asked Australia's Chief Scientist, Dr Alan Finkel AO, to chair an expert working group to develop the 2016 National Research Infrastructure Roadmap.

*Recommendation 3:* The Committee recommends that the Australian Government, as part of its long-term innovation strategy, includes policy options to address the structural and strategic barriers that inhibit innovation, including: measures to enhance collaboration and the free flow of knowledge between the university system and the private sector; increasing the size of the research and development workforce employed in industry; and ensuring that public funding to support science, research and innovation is long term, predictable and secure.

The Government agrees with this recommendation. The Government's role is to ensure there is a clear pathway for potential entrepreneurs to test new ideas in the market, find the talent and capital they need to scale, and learn through doing. The NISA has introduced a number of complementary measures which address this recommendation, for example:

- *Innovation Connections.* As part of the Entrepreneurs' Programme, Innovation Connections has expanded its existing services to further drive industry-focussed collaboration between researchers and small to medium sized enterprises. The expanded programme provides additional facilitators and grants; supports graduate and post-graduate placements in business; and supports business researcher placements in publicly funded research agencies. These partnerships will foster the development of new ideas with commercial potential and will assist businesses identify the knowledge gaps preventing their growth.
- *Linkage Projects scheme.* The Government is reforming the Australian Research Council's Linkage Projects scheme to stimulate more collaboration between universities and businesses. From 1 July 2016, both researchers and industry partners will be able to take greater advantage of opportunities for collaboration through a continuous application

schedule. This will encourage more partnerships between universities and businesses, and help generate more products and services to benefit business, the economy and society.

- *Maintaining world class research infrastructure.* The Government will invest \$2.3 billion over the next 10 years in cutting-edge national scale research infrastructure, which will ensure a stable and predictable pipeline of funding to support world class research by providing leading edge national research infrastructure.
- *New research funding arrangements for universities.* The Government is introducing new, streamlined research funding arrangements and is providing an additional \$50 million per year (indexed) for universities to improve Australia's rate of collaboration between industry and universities. These new arrangements give more emphasis to success in industry and other end-user engagement, while continuing to ensure our world-leading, high quality research performance. The Government will consult with universities and other stakeholders on updated guidelines for new arrangements, which will commence on 1 January 2017.
- *CSIRO Innovation Fund.* The CSIRO Innovation Fund will boost the commercialisation of research through an early stage innovation fund of up to \$200 million to support new spin out companies from Australian research institutions, and a \$20 million expansion to CSIRO's accelerator programme to include other publicly funded research organisations, with 20 universities already participating.
- *Global Innovation Strategy.* The Government is investing \$36 million over five years in a Global Innovation Strategy to improve Australia's international innovation and science collaboration. The strategy will provide seed funding for Australian businesses and researchers to collaborate internationally on research and promote an open-market approach to industry-research collaboration. There is also a regional component, which will support multi-economy collaboration on shared regional challenges. The Government has established five 'landing pads' (in San Francisco, Tel Aviv, Shanghai, Berlin and Singapore) to support entrepreneurial Australians and market-ready startups by providing an operational physical space to access the talent, mentors, investors and a wider connected network of innovation hubs in those locations.

Ensuring the public investment in innovation is supported by a framework to encourage complementary long-term investment by Australia's private sector is a key priority of this Government. The ISA 2030 Strategic Plan will identify investment, infrastructure priorities and areas for consideration by the Government in order to ensure Australia is positioned to secure its future economic prosperity.

*Recommendation 4:* The Committee recommends that the Australian Government, working in collaboration with State and Territory governments, adopt a range of measures to support the role of local and regional innovation ecosystems.

The Government agrees with this recommendation. The Government has a vital role in ensuring that the new jobs and other gains that flow from innovative new technologies and business models are shared across Australia. Creating a strong national innovation ecosystem is only possible with well-developed and supported regional ecosystems, particularly for areas of Australia built on traditional industries undergoing technological and globalised disruption.

Several of the NISA measures are of broad application and support the role of local and regional innovation ecosystems. For example, many of the measures listed above will help businesses and entrepreneurs attract investment and launch knowledge-based businesses to

reach global markets from anywhere in Australia. In addition, the Government is investing \$23 million through the Incubator Support initiative to support building local and regional innovation ecosystems. It will help grow the next generation of innovative businesses by offering matched funding to: support the development of new incubators in regional or sectoral areas with high innovation potential; boost the effectiveness of incubators, including support to expand their services and engage a Commercialisation Adviser; and provide access to top quality research and technical talent through secondments of national or international experts.

Additionally, the Commonwealth and State and Territory governments are already progressing a number of measures to support local and regional innovation systems. The Commonwealth, State and Territory Advisory Council on Innovation (CSTACI), which comprises officials from the Commonwealth, State and Territory governments, and the New Zealand Government, aims to improve the effectiveness, integration and coordination of the national innovation system. They provide advice to all governments on their innovation policies, activities and programs.

*Recommendation 5:* The committee recommends that the education system be accorded a central focus in the Australian Government's long-term innovation strategy, thereby acknowledging the central importance of the interplay between the STEM subjects and the humanities, social sciences and creative industries.

The Government agrees with this recommendation. It is crucial that Australia nurtures and taps into the entire pool of science, technology, engineering and mathematics (STEM) and entrepreneurship talent in our population, while acknowledging the important role of humanities arts, and social sciences, to support a more innovative, inclusive and prosperous economy. This includes improving women's STEM workforce participation and economic independence. The development of creative capacities across the workforce and in society more broadly will be vital for the generation and successful commercialisation and uptake of new ideas.

As part of the NISA, the Government is investing \$48 million to inspire all Australians, from pre-schoolers to the broader community, to engage with STEM and participate in further study. The Government is also investing \$51 million to help Australian students to embrace the digital age and better prepare for the jobs of the future. Online computing challenges, ICT summer schools, competitions and support for teachers and school leaders will lead to improved STEM literacy. In addition, the Government is investing \$13 million to encourage more girls and women to embark on and remain in STEM-related careers within science and research institutions, as well as STEM-based and entrepreneurial industries.