



# Australian Academy of Science

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Expert Panel  
Review of Australia's National Innovation System

## **COMMENTS ON *VENTUROUS AUSTRALIA: BUILDING STRENGTH IN INNOVATION***

The Australian Academy of Science agrees with the principal conclusions of the Cutler review *Venturous Australia: Building strength in innovation*. Improved support for innovation, together with measures to ensure that the research sectors in industry, the universities, the institutes and government work together seamlessly across all institutional and government boundaries, will be of exceptional importance to Australia over the coming decade. There are many proposals made in the review that deserve detailed attention; we will, for the present, focus on those that are of high importance or require rapid action.

The Australian Academy of Science recognises that successful innovation depends upon the coming together of new knowledge based on scientific and technological excellence, aligned to contemporary commercial approaches and a 'whole of governments' approach. We emphasise that it is Australia's continuing excellence in science and technology that will underpin our ability to innovate successfully and competitively in the long term and on the international stage, to the benefit of our industries and our wider community. We welcome the many recommendations in the review that work towards these aims.

The Academy supports strongly the proposal that grants should cover the full costs of research. This single step is of great importance to all sectors involved in innovation, and particularly important for the survival of innovative research and collaboration in our universities. At present, competitive grants from ARC and NHMRC only cover approximately two thirds of direct research costs and none of the indirect costs; the remainder has to be found from block funds or from teaching income. Both research and teaching suffer as a consequence, or the research simply is not done in Australia and opportunities for innovation are lost. We urge Cabinet to support this reform and to announce the first step in its implementation in the coming 2009. 10 budget.

However, we note that the proposal for full cost support is framed in terms that could be interpreted as applying only to grants made to research that is carried out in universities. There are other agencies (for instance, Geoscience Australia, many of the most significant medical research institutes including the Walter and Eliza Hall, the Garvan and Queensland institutes, and many public hospitals) that compete successfully for government funding. Unlike CSIRO and ANSTO, but like the universities, they do not have built-in research infrastructure funding at present. It is important that these public research bodies, with their excellent record for highly valued and innovative scientific research, are treated equally with universities. The best way to do this may be to include the full cost of research as an infrastructure addition to each grant.

The Academy strongly supports the proposal for a long term government commitment to restore overall funding for research (with a focus on collaborative research oriented to innovation and novelty) to a proportion of GNP that approximates or exceeds the OECD average. Australia has fallen to a very low position in the 'OECD table' over the past decade at a time when other countries have been expanding their efforts. It is of great importance that this growing imbalance is corrected during the coming decade. If this is not done, we will not be able to keep the best of the researchers that we educate and train (whether in public research in universities, CSIRO, medical research institutes, CSIRO, DSTO and other government agencies, or in industry), nor be able to attract the best researchers internationally to come to work in Australia, nor see the economic and social benefits that we deserve from innovation and research. We propose that the government makes a commitment to ensure that Australia raises its position to that of the OECD average over the coming six years. Because there is a need for a long-term commitment to funding innovation we believe that bipartisan support should be developed.

The Academy notes that the CRC report (a separate component associated with the green paper) is very well argued and makes an excellent case for a continuation and expansion of the CRC scheme. We support the proposed increased flexibility, the inclusion of public benefits in the award criteria, and the introduction of annual application rounds, together with a more rigorous assessment of progress during the lifetime of a CRC. We recognise that this will require an increase in funding.

The Academy notes the proposals to help industry meet the costs of early and innovative applications of research to technological outcomes. We support the increased flexibility of the proposals as compared to present assistance schemes, as well as the greater emphasis on small and medium enterprises with their growth potential for the future. The proposal targeting tax incentives for companies that undertake R&D in Australia with university or institute partners leading to knowledge and skills transfer is particularly welcome, as are the proposals

emphasising the importance of collaborative research schemes that engage both the private and public sectors in striving for innovative solutions to academic and commercial problems.

There is one specific proposal about which we have serious reservations: to replace Prime Minister's Science, Engineering and Innovation Council (PMSEIC) with an 'Innovation Council'. While there may be a good case for an Innovation Council, we note that PMSEIC has been of great value, and discusses issues (such as indigenous health) that may not fit easily under the rubric of innovation but which are of national importance and which require science and technology underpinning. PMSEIC also is a mechanism that brings together many of the key senior ministers (including the Treasurer) into a single robust forum that discusses science, engineering and innovation in all of its focussed and diverse aspects, with the Prime Minister in the Chair. The Academy of Science believes that it would be a retrograde step to abandon this highly successful forum, which goes against a growing international practice to place science and technology higher in the decision-making chain.

There are a number of proposals of a more general nature in the green paper that deserve attention and support. We agree that school education in general, and science education in particular, is of great importance: our Academy has been responsible for introducing *Primary Connections* into primary schools throughout Australia. The green paper offers strong support for mentoring and skills acquisition that encourage innovation and collaboration, both in terms of individual development and in terms of the interactions between different groupings within our Australian system, and we are willing to help government find ways to implement these proposals. The Academy is aware that many of our very strong and innovative sectors are 'silo-based', and we believe that positive incentives to encourage the breaking down of barriers between industry (including both service and manufacturing industries), the public sector such as hospitals and defence, and the universities are needed.

The Australian Academy of Science takes pride in our ability to provide advice of the highest quality on many issues involving pure and applied science and innovation to successive governments over the past 50 years. Our Academy will continue to help government in every way possible, including help to achieve the objectives outlined in the green paper. Where the implications for innovation are broader than the areas of pure and applied science on which we focus, we will work closely with the other three learned academies and through the National Academies Forum to achieve a unity of advice and purpose.

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