



TIAC Annual Activity Report

Hon Bill Johnston MLA Minister for Commerce Level 9 Dumas House 2 Havelock Street WEST PERTH WA 6005

Dear Minister

On behalf of the Western Australian Technology and Industry Advisory Council (TIAC), I am pleased to submit the TIAC Annual Activity Report for the year ending 30 June 2017, for your information and subsequent presentation to Parliament in accordance with Section 26(1) and Section 26(2) of the *Industry and Technology Development Act 1998* (ITD Act).

TIAC has also reported through the Department of Commerce Annual Report and Financial Statement in accordance with Section 26(3) of the ITD Act in compliance with Section 62 of the *Financial Management Act 2006*.

Yours sincerely

Mr Alan Bansemer Chair

Alan Barensel

28 August 2017

On behalf of Council members:

Current members (as of 30 June 2017):

Mr Alan Bansemer (Chair)
Mr Andy Farrant
Professor Lyn Beazley AO FTSE
Professor Shaun Collin
Professor Barry Marshall AC
Dr Jim Ross AM (Resigned 31 December 2016)
Ms Anne Driscoll (ex officio) (Ceased role 15 May 2017)
Mr Lex McCulloch (ex officio) (Ceased role 30 June 2017)

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Executive Summary

The Western Australian Technology and Industry Advisory Council (TIAC), provides independent advice to the State Government on any matter relating to the Objects of the Industry and Technology Development Act 1998 (ITD Act). TIAC is uniquely positioned to provide strategic, evidence-based advice identifying and encouraging innovation in industry, science and technology to drive economic growth and diversity in Western Australia.

The ITD Act ensures the existence and continuation of TIAC as a key independent advisory body reporting directly to the Minister responsible for the ITD Act.

TIAC, under the ITD Act, may independently publish any report that it prepares.

TIAC reports through the Minister to Parliament under Section 26(1) and Section 26(2) of the ITD Act. TIAC reports under the *Financial Management Act 2006* through the Department of Commerce under Section 26(3) of the ITD Act.

The members of TIAC are appointed by the Minister and endorsed by the State Cabinet. Members bring a diversity of disciplines and perspectives along with a commitment to contribute to the development of Western Australia in their strategic advice to Government.

In fulfilling TIAC's legislated role, the Council is a valued contributor to State government policy on industry development and innovation for the State's broadening economy. TIAC's advice incorporates research and industry insights and can offer alternative solutions and options for delivering economic and sustainable benefits for the State. TIAC can bring different ideas and solutions to the table to encourage strategic discussions.

Specific activities and strategic advice during 2016-17 included:

- TIAC, while reporting to one Minister, provides its advice on a whole-of government and whole-of-economy basis. In July 2016, TIAC members attended and contributed to the WA Innovation Summit contributing broad strategic insights.
- On the 15 July 2016, the 'Stimulating Innovation: Laying the Foundation' report
 was published on the TIAC website. This report reflects TIAC's desire to see a
 culture of innovation in WA to support economic diversity and growth and was
 informed by research undertaken by Dr Kirsten Martinus at the School of Earth
 and Environment, The University of Western Australia. It also highlights the need
 for greater data driven analysis of Western Australian industry, business location
 and networks to inform decision making.
- TIAC highlighted the importance of generic competencies that will grow to support
 major markets in WA, such as the resources sector or government, and
 subsequently can be diversified to supply a wide range of industry sectors with
 global leading technology solutions. This was part of the Comparative and
 Competitive Advantages paper that defined the generic competencies and how
 they relate to the Western Australia economy.
- Accessing Commonwealth Grants: Members acknowledged that WA does not perform well in accessing Commonwealth competitive funding programs and in particular the poor performance of WA researchers in accessing important Commonwealth funding e.g. Cooperative Research Centres (CRCs), Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) grants. WA also performs poorly in accessing infrastructure funding. In early 2017, TIAC worked with Belka Consulting to provide an overview of the types of support offered by other jurisdictions to identify government interventions that have most impact and deliver outcomes.
- New Energy Technologies and the Economy: The Council worked with Inotek Corporation Pty Ltd to undertake a small study looking at energy from the "needs of business" perspective to access cost competitive energy. The project focuses on the opportunities and barriers for lowering energy costs and the need to plan for an inevitable transition to a technology and delivery model.

TIAC Activities in 2016–2017

Advice to the Minister

To ensure advice is provided to the Minister responsible, following each Council meeting, a summary of key discussion points was provided to the Minister's office.

TIAC provided three advisory reports to the Minister: Accessing Commonwealth Funds; Stimulating Innovation in WA; and Comparative and Competitive Advantages.

Implementation of Strategic Activities

During the 2016–2017 financial year, TIAC progressed a number of activities and research projects, including consultation with key stakeholders. An overview is provided for each of these activities:

- Project Paper: New Energy Technologies and Economy
- Project Paper: Accessing Commonwealth Grants
- Comparative and Competitive Advantages Paper published on the TIAC website.
- Stimulating Innovation in WA: Laying the Foundations.
- EGTI Industry Cluster Mapping exercise
- Cyber Security Economic Security
- Strategic Focus Development survey and results
- Post-election Brief and Positioning TIAC

Project Paper: New Energy Technologies and Economy

Initial research highlighted the complexity, breadth and impact of the evolution and deployment of renewable energy technology and other associated supporting technologies. The research also highlighted the technological tension of trying to operate 21st Century technology in a system developed and based on mid-20th century technology. Mr Andrew Hall, Inotek Corporation, a technology investor and advisor, undertook a small study on the aforementioned project from the perspective of business end users, focusing on the opportunities and barriers for lowering energy costs. The project identified a number of key themes and problems and encourages policy makers to think beyond the utility operations and think of energy as a key enabler of the economy. Low cost energy will drive the economy and deliver jobs.

This paper is near completion but had not been finalised by 30 June 2017 and will be provided to the Minister in the new financial year.

Project Paper: Accessing Commonwealth Grant Funding

TIAC has added its voice in support of agencies and applicants in approaching the Commonwealth Government in relation to funding for innovation in WA. Members acknowledged that WA does not perform well in accessing Commonwealth competitive funding programs and in particular the poor performance of WA researchers in accessing important Commonwealth funding such as CRC, ARC and NHMRC grants. To emphasise the poor level of access, until March 2017, when a CRC was awarded for honey bee products, no CRC's were headquartered in WA.

In early 2017, TIAC worked with Belka Consulting to develop a short discussion paper on the issue of accessing Commonwealth research grants. The discussion paper summarised the types of support offered by other jurisdictions and sought to identify government interventions that have most impact and deliver outcomes. TIAC considered the discussion paper and developed advice that was passed on to the Minister.

Comparative and Competitive Advantages Paper published on the TIAC website

TIAC prepared a Comparative and Competitive Advantages Paper by way of defining the meaning of what generic competencies are and how they relate to the Western Australia economy. The Council considered how this topic aligns with or impacts the outcomes of the WA Innovation Summit.

TIAC provided the State Government with advice about optimising innovation aimed at strategically strengthening and diversifying the economy, and enhancing the cost effectiveness of Government services. The Council's work is framed at the sectoral level, rather than at individual enterprise and this discussion of the role of advantages, and competencies follows that principle. The purpose of this paper is to highlight the crucial, but under-recognised, role of generic competencies and to emphasise their potential to enhance innovation and the State's competitive advantages.

Following the thirtieth TIAC meeting in August 2016, the Council agreed to place the 'Comparative and Competitive Advantages Paper' on the TIAC website to ensure that TIAC's work and deliberations are more readily available to the general public to encourage comment/discussion.

Stimulating Innovation in WA: Laying the Foundations

This report's aim is to assist the West Australian State Government in addressing the key questions: "What do we need to do, and where should we focus our resources and attention to stimulate innovation in business, government and community sectors?" Knowledge will be essential in developing strategies, knowledge of the competencies that exist and are growing in Western Australia, the sectors the competencies support, cross sectoral linkages and where there is existing concentrations of industry providing a foundation for a cluster.

The recommendations guide and inform development of innovation policy responses aimed at strengthening and diversifying the State's economy. TIAC believes that clusters of increasing innovative capability are one of the most effective environments for innovation to be sparked, driven and converted to improved productivity, new commercial assets and increased economic value.

This project included examples of how different data sets could be used to map and understand the structure and connections in the WA economy. However, while samples had been included, they were from a range of databases, some being Australian Bureau of Statistics and some developed by The University of Western Australia. Yet, having comprehensive data in fine detail to enable a complete state map of industry strengths by locations and networks proved elusive and led to the cluster mapping exercise.

EGTI Industry Cluster Mapping exercise

TIAC members held discussions with the Office of the Chief Economist and Data61, which revealed that both parties were experiencing similar issues on detailed data to map the Australian economy and logistical routes. This meant they were undertaking advanced data analytics projects to build up regional maps and supply chain linkages in order to circumvent the data restrictions placed on the Australian Bureau of Statistics by its legislation.

The aim of the project was to progress to a demonstration of how to use a wide range of data sets to build up this knowledge. The knowledge of how to undertake such mapping exercises would then form TIAC's advice to Government and assist agencies.

In order to access a wider range of business data, TIAC worked with agencies including the Department of Planning and Landgate. Additional data sets are required in order to add detail not available from the ABS.

The original Data61 project was cancelled by the end user. However, TIAC remains in contact with Data61 and has also held discussions with a private data analytics company.

Articulation of the shortcomings of the use of both ABS data and Business Longitudinal Analysis Data Environment (BLADE) data has highlighted the need for development of new methods for identifying WA industry capabilities and clusters of activity.

The Committee for Perth is currently implementing an 18 month long project titled 'Bigger and Better: Beyond the Boom' focused on the current and future economy of the Perth and Peel regions. TIAC is monitoring this project.

Strategic Focus Development survey and results

In June 2016, the Secretariat compiled a Strategic Focus Development survey which the Council endorsed. The survey was circulated to an expanded client base and 24 responses were received. The five key themes that resulted from the survey include:

- Accessing Commonwealth Funding;
- New Energy Technology as an Economic Driver;
- Health and Aged Care Growth Opportunities;
- International Education Critical in Forming Strategic Economic Linkages; and
- Technology Driven Agriculture and Aquaculture

The survey enabled the development of strategic themes and directions to inform a strategic work plan for TIAC.

Post-election Brief and Positioning TIAC

At the thirty sixth TIAC meeting in December 2016, the Council agreed that with the pending State election in March 2017, TIAC would focus on drafting a post-election briefing for an incoming Minister and/or Government. The briefing primarily focusses on recommendations for the future and how to best use the knowledge and skills base of the Council.

TIAC INTERNAL INVESTIGATIONS

Cyber Security – Economic Security

In December 2016, TIAC held its meeting at Edith Cowan University (EDU) Joondalup where Professor Craig Valli presented on the significant outcomes from the Security Research Institute (SRI) which is Australia's leading cyber security research facility. TIAC member, Andy Farrant briefed the Council throughout the year on the importance of developing cyber security capability to underpin economic security.

Brief on the new Limited Partnerships Act

On 1 February 2017, the Limited Partnerships Bill 2016 (the Bill) repealed and replaced the Limited Partnerships Act 1909. The Secretariat compiled a summary paper to identify opportunities and ramifications of the new Bill related to TIAC. Members agreed that the paper detailed the various outcomes sufficiently.

Australian Financial Review Summit

TIAC representatives attended the Australian Financial Review National Innovation Summit that was held in Sydney on 17-18 August 2016. The purpose of the visit was to further develop networks across the spectrum on science, innovation and technology, gain further insights into Commonwealth drivers that impact grant applications for innovation and gain knowledge to inform TIAC advice to Ministers.

Following the visit, the TIAC Secretariat commenced discussions with Commonwealth contacts and the Office of Science to investigate the potential to secure nodes of additional growth centers including medical technology and pharmaceuticals. The knowledge also assisted with advice on CRC applications.

ENCOURAGING WHOLE-OF-GOVERNMENT DISCUSSIONS

Meetings with the Office of Science and Chief Scientist

The Chair, Mr Alan Bansemer indicated that he would like to undertake follow-up meetings with the Office of Science ('Science') to discuss how TIAC can support the work of Science and link with innovation. Since June 2016, TIAC has undertaken three meetings with Science.

WA Innovation Summit

In July 2016, the WA Innovation Summit was held at the Pan Pacific Hotel. The Summit was attended by approximately 250 people and generated several ideas that will contribute to the formulation of the State's five year Innovation Strategy. TIAC members attended and contributed to the WA Innovation Summit contributing broad strategic insights. Subsequent to the Summit, the Council has engaged with the Office of the Government Chief Information Officer (OGCIO) and the Office of Science to discuss strategic outcomes from the forum and to inform the Council's future advice to the State government.

UPDATED AND REVISED OPERATING PROTOCOL

The Secretariat drafted a condensed version of the original Operating Protocol which was discussed and endorsed by Ms Anne Driscoll, Director General at the Department of Commerce and Mr Alan Bansemer, Chair of TIAC. Ms Kristin Berger, Executive Director of Labour Relations and Industry Development, advised that the document has been put into practice following an update which the Secretariat provided to Commerce Departmental executive management.

Advice to the Department of Commerce

The Department of Commerce, responsible for the ITD Act, works on topics that are also a focus for TIAC and reports to the Minister responsible for liaising with TIAC. TIAC has provided advice to assist the Department in activities related to the ITD Act and technology opportunities for the State:

- 1. Approaches to bioprospecting and bio-discovery to inform the development of new legislation.
- 2. Government Intellectual Property, issues on IP commercialisation and its importance to the economy.
- 3. Innovation focus areas for the WA government.
- 4. Response to the Commonwealth Innovation Statement with options and implications for the State Government.
- 5. Accessing Commonwealth funding.
- 6. New Energy and the Economy
- 7. Efficient approaches to developing magazine style web pages.

Submissions and Engagement

The Council makes submissions to reviews, consultations and inquiries in topics related to its role. During the 2016-17 year no formal submissions were made although the Western Australian Government did respond to the following submission:

Submission to the Economics and Industry Standing Committee - Inquiry into Technological and Service Innovation in WA

The Economics and Industry Standing Committee (EISC) is a multi-party committee of the Legislative Assembly of the Western Australian Parliament that reviews relevant topics and reports to the Assembly. In July 2015, the Committee advertised a new inquiry. The Committee focused on the following sectors of the Western Australian economy: agriculture and food; mining and energy; and advanced manufacturing.

At the August 2015 TIAC meeting, it was agreed that TIAC would prepare a submission to the Inquiry. The Department of Commerce and the WA Chief Scientist, under the banner of the Office of Science, also prepared submissions.

The EISC released the *Growing WA through Innovation* report on 30 June, 2016, which represents the culmination of the year-long inquiry into technological and service innovation in the State. The report contains 18 recommendations in relation to State government promotion of innovation in WA. Many of these recommendations are based on the advice included in TIAC's submission to the inquiry. The State Government tabled a response to the EISC report on 10 November 2016.

Engagement with Industry and Academic Institutions

The thirty fourth TIAC Council meeting in August 2016 was held at the Resources Australia (NERA) facility in National Energy Kensington. Mr Ken Fitzpatrick, Chairman, provided members with a summary of the current capabilities and future strategies for NERA. Mr Giles Nunis, Chief Executive & Government Chief Information Officer at the OGCIO, provided an overview of the WA Innovation Summit that was held on 28 July 2016 at the Pan Pacific Hotel. Mr Nunis advised that 250 people attended the Summit which generated 780 ideas and 150 action plans. A concise list of these ideas/action plans would be circulated to attendees in order for the ideas/action plans to be refined and prioritised. It is anticipated that an agenda for the key themes will be established and for funding to be allocated to each item.

TIAC's thirty fifth Council meeting in October 2016 was held at the Make Place

co-working space Mandurah. Members were welcomed by Mr Rhvs Williams, CEO. Make Place, and were provided with a summary of Make Place's initiatives. programs and events that are available to members of the Mandurah community. A key discussion point at the meeting included the need for more Government support to help establish similar establishments like Make Place which uniquely caters to the individual needs and challenges of its local community.



Photo: Left to Right: Mr Rhys Williams, CEO, Make Place; Mr Andy Farrant, TIAC member; Professor Lyn Beazley, TIAC member; Mr Mike Dickson, TIAC Secretariat; Ms Anne Driscoll, Director General, Department of Commerce; Professor Shaun Collin, TIAC member; Ms Natalie Stodart, TIAC Secretariat; Mr Howard Shawcross, TIAC Secretariat; Mr Peter Bowler, Business Advisor, Business Foundations Inc; Ms Roban-Lynne Clarke, Regional Manager Southern WA, AusIndustry and Ms Kristin Berger; Executive Director, Labour Relations and Industry Development, Department of Commerce.

TIAC's thirty sixth Council meeting in December 2016 was held at Edith Cowan University (ECU) in Joondalup. Members were welcomed to the meeting by Professor Steve Chapman, Vice Chancellor; Professor Cobie Rudd, Deputy Vice-Chancellor (Strategic Partnerships); and Professor Margaret Jones, Director, Office of Research and Innovation. The meeting featured a presentation by Professor Craig Valli, Director of ECU's Security Research Institute and Fellow of the Australian Computer Society. Professor Valli provided members with a summary of the SRI group's principal research areas including: Digital Forensics, Cyber Security/Information Security, Critical Infrastructure Security and Human Security. Professor Kamal Alameh, Director of the Electron Science Research Institute and Professor in the School of Science and Research Project investor Dr Peter Pratten provided an overview of their recent project regarding a novel hybrid RF/optical catheter to improve safety and efficacy in atrial fibrillation ablation.



Photo: Left to Right: (back row) Mr Howard Shawcross, TIAC Secretariat; Professor Shaun Collin, TIAC member; Professor Margaret Jones, Director, Research and Innovation, ECU; Mr Mike Dickson, TIAC Secretariat; Dr Jim Ross, TIAC member; Mr Andy Farrant, TIAC member; Professor Barry Marshall, TIAC member; Professor John Finlay-Jones, Deputy Vice-Chancellor ECU; (front row) Professor Steve Chapman, Vice Chancellor, ECU; Professor Lyn Beazley, TIAC member.

The thirty seventh TIAC Council meeting in February 2017 was held at the Centre for Entrepreneurial Research and Innovation (CERI). Dr Carolyn Williams, CEO, CERI provided members with an overview of the Centre and the projected goals and vision from founder Mr Charlie Bass. Dr Williams explained to members the components of CERI's Venture Mentoring System, whilst stressing the importance of teamwork and having the right mindset to enable the translation of research into global business opportunities. Dr Williams provided members with a background on the Centre highlighting the multidisciplinary nature of student intake and CERI's proof of concept activities.



Photo: Left to Right: Mr Andy Farrant, TIAC member; Mr Mike Dickson, TIAC Secretariat; Professor Shaun Collin, TIAC member; Ms Kristin Berger, Executive Director, Labour Relations and Industry Development, Department of Commerce; Professor Lyn Beazley, TIAC member; Ms Anne Driscoll, Director General, Department of Commerce; Mr Howard Shawcross, TIAC Secretariat; Mr Alan Bansemer, TIAC Chair and Dr Carolyn Williams, CEO, CERI.

The thirty eighth and thirty ninth TIAC Council meetings on 10 May 2017 and 29 May 2017, respectively, were held at the Department of Commerce offices at Gordon Stephenson House, 140 William Street, Perth.

TIAC has benefited from receiving feedback on the challenges industry faces in research, innovation, science and industry in Western Australia. TIAC's engagement with its constituents allows TIAC to provide the Minister with informed fact-based independent advice. The feedback from these meetings is also being considered in future TIAC activities.

Outlook for 2017–2018

TIAC's strategic activities underpin TIAC's focus moving forward. Future initiatives include:

- Providing advice and demonstrating the economic benefits of science, research and technology;
- Examining innovative approaches to a range of opportunities and challenges facing Western Australia; and
- Investigating the State's changing economy to identify new technologies and emerging industries.

TIAC will continue to work with the Minister and his Office to identify specific areas of advice that will support the Minister and progress the objectives of the ITD Act.

TIAC through the Minister and his Office will also provide advice to the Minister for Innovation.

Future Engagement Activities

In order to facilitate and provide the responsible Minister with informed fact-based independent advice, TIAC also intends to meet with private and public organisations to improve the flow of information and to gain insights into important issues in 2017 and 2018.

TIAC also intends to develop an expert advisory network to provide timely and prioritised advice on emerging trends.

TIAC Membership

The members of TIAC during the 2016–2017 financial year were:

Mr Alan Bansemer, TIAC Chair and Director, Health Consulting Pty Ltd

Mr Alan Bansemer has over 35 years' experience in the health sector, including six years as the West Australian Health Commissioner and eight years as the Deputy Secretary to the Commonwealth Department of Human Services and Health. He currently runs his own private consultancy group Banscott Health Consulting Pty Ltd, providing strategic advice to health departments throughout Australia.



Mr Bansemer has chaired a number of committees including the

Medicare Schedule Review Board and General Practice Consultative Committee. In addition, he has served as a member of numerous health advisory committees including the Australian Health Ministers' Advisory Council, Health Insurance Commission and Australian Institute of Health and Welfare.

Mr Bansemer has a Bachelor degree in Economics from the University of Adelaide and Post Graduate Diploma in Business Administration from the South Australian Institute of Technology.

Mr Andrew (Andy) Farrant, Principal, One Degree Advisory

Mr Andy Farrant has over 25 years management experience, serving as a company director in a range of not-for-profit and commercial entities. In his last job, Mr Farrant was the General Manager and Company Secretary for Poseidon Scientific Instruments, a defence firm specialising in radio frequency technology. In this role, he was responsible for a leading a team that developed the signal receivers for the Murchison Widefield Array, a precursor project for the Square Kilometre Array Radio Telescope.



His career also spans across the field of arts management serving as the Chief Executive Officer for Country Arts WA, the Media and Marketing Manager at Perth Theatre Trust, a Director of Regional Arts Australia and the Chair of Federal Ministerial Advisory Committee Playing Australia. He currently is the Principal Consultant at One Degree, a boutique consultancy firm specialising in leadership and communications.

Mr Farrant is a graduate of the Australian Institute of Company Directors. He holds a Post Graduate qualification in Arts Administration and is a trained science specialist teacher.

Professor Lyn Beazley AO FTSE

After graduating from Oxford and Edinburgh Universities, Lyn built an internationally renowned research team in Neuroscience that focused on recovery from brain damage, with much of her investigations undertaken as Winthrop Professor at The University of Western Australia. Currently Lyn is Sir Walter Murdoch Distinguished Professor of Science at Murdoch University.

Lyn was honoured to be Chief Scientist of Western Australia from 2006 to 2013, advising the Western Australian Government on science, innovation and technology, as well as acting as an



Ambassador for science locally, nationally and internationally. With extensive experience serving on advisory bodies, Lyn currently serves on several boards including the Federal Government's Bionic Vision Australia. Lyn was a Trustee of the Western Australian Museum from 1999-2006 and currently is Patron of the Friends of the Museum. Recently Lyn joined the Board of the Western Australian Art Gallery Foundation.

In 2009, Lyn was awarded Officer of the Order of Australia and elected a Fellow of the Australian Academy of Technological Sciences and Engineering later that year. In 2011, she was inducted into the inaugural Western Australian Women's Hall of Fame, followed by being elected a Fellow of the Australian College of Educators and a Companion of Engineers Australia. Lyn has worked to promote Science, Technology, Engineering and Mathematics to the community, especially to young people and in 2012, Lyn was thrilled to become the second recipient of the Governor's Award for Giving, in recognition of her enthusiastic philanthropy. In 2015, Lyn was accorded the honour of being inducted into the Western Australian Science Hall of Fame and in November was thrilled and honoured to be announced as WA Australian of the Year for 2015.

Professor Shaun Collin, Deputy Director, UWA Oceans Institute and School of Biological Sciences, The University of Western Australia

Professor Shaun Collin is a world leader in comparative neurobiology and Winthrop Professor at The University of Western Australia. Shaun has a BSc (Hons) and MSc from The University of Melbourne and a PhD from The University of Queensland.

Professor Collin, a former WA Premiers Research Fellow, is a world leader in how animals perceive and process their sensory world under different environmental conditions. He uses



innovative techniques in anatomy, electrophysiology, bioimaging, molecular biology and behaviour to understand the evolution and mechanisms of neural processing for a range of senses including vision, hearing, olfaction and electroreception. Professor Collin's research is being incorporated into shark mitigation technologies, improving aquaculture industries, identifying the effects of anthropogenic disturbances such as underwater noise and dredging activities, with the ultimate aim of informing management strategies to conserve Australia's unique biodiversity.

Professor Collin has held many of the world's most prestigious fellowships in places such as the Scripps Institution of Oceanography in the United States (US); the Marine Biology Laboratory in Woods Hole in the US; The University of Tuebingen in Germany; the University of Montreal in Canada; the University of Washington (Friday Harbor) in the US; and The University of Queensland in Brisbane. He is the author of over 250 international scientific publications including 9 books on sensory systems of primarily aquatic vertebrates. Professor Collin has played an important role in the implementation of the Blueprint for Marine Science 2050 in Western Australia.

Dr James (Jim) Ross AM, Deputy Chairman Berkeley Energia Ltd

Dr Jim Ross is a geologist with more than fifty years' in exploration, development and mining across a wide range of commodities, including twenty five years with Western Mining Corporation and extensive international experience. He has a PhD from the University of California, Berkeley and has been awarded Honorary Doctorates of Science from both UWA and Curtin.



Dr Ross has more than twenty five years corporate experience with public companies, principally at the Executive Director, Managing Director and Chairman levels, and is currently Deputy Chairman of Berkeley Energia Limited.

He has extensive experience at the interface between industry and education and research, and has chaired several organisations devoted to education and research. He is currently Chair of the John de Laeter Centre, Patron of Earth Science Western Australia, and holds appointments as an Honorary Research Fellow at UWA and Adjunct Professor at Curtin. Dr Ross was recognised for his services to geoscience in 2010 when he was made a Member of the Order of Australia. He was appointed to TIAC in 2010, Chaired its Science Education Committee and was a member of its Economic Growth through Innovation Committee.

Professor Barry Marshall AC, Nobel Laureate, The University of Western Australia

Professor Barry Marshall is a Nobel Prize Laureate for Physiology or Medicine. This prize was awarded jointly to Professor Marshall and Professor Robin Warren in 2005 in recognition of their 1982 discovery of the bacterium, *Helicobacter pylori* that causes peptic ulcer disease. Their work is acknowledged as the most significant discovery in the history of gastroenterology and is compared to the development of the polio vaccine and the eradication of smallpox.



In 1998, Professor Marshall was made a Fellow of the Royal Society, and in 2008, he was elected as a Foreign Member to the prestigious US National Academy of Science. He was awarded a Companion in the General Division of the Order of Australia in 2007.

Professor Marshall continues to work as a Senior Principal Research Fellow at The University of Western Australia (UWA) and is an Honorary Clinical Professor of Medicine and a consultant gastroenterologist at Sir Charles Gairdner Hospital. He treats patients with antibiotic resistant *Helicobacter pylori* infections and leads a team undertaking varied research into the bacterium, from clinical microbiology through to genomics and systems biology. His Helicobacter Research Laboratory is located within the Marshall Centre for Infectious Diseases Research and Training, of which he is a Director. In 1996, he was a founder of Tri-Med Distributors Pty Ltd, a company specialising in the distribution and marketing of products for the detection and cure of *Helicobacter pylori*. In addition, he founded Ondek Pty Ltd in 2005 to develop and commercialise derivatives of *Helicobacter pylori* that are unable to colonise the gut, but have beneficial therapeutic effects. The first product being developed at Ondek is an immunotherapy for the treatment of eczema; other products will address allergic asthma and food allergies in children.

Ms Anne Driscoll (ex officio), Former Director General, Department of Commerce

Anne Driscoll was appointed Director General of the Department of Commerce in August 2016. In this role Anne is responsible for the provision of strategic advice to government and management of the Department including delivery of a wide range of services related to the building industry, work safety, consumer protection, labour relations, industry development and innovation.



Anne Driscoll was previously appointed the Executive Director for

the Consumer Protection Division in August 2008 and holds the statutory position of Commissioner for Consumer Protection and Prices Commissioner. Since graduating from The University of Western Australia with a Bachelor of Arts majoring in psychology and commerce, Anne has gained experience in numerous public sector roles.

Anne worked in the employment and training sector for the Commonwealth Government for more than 20 years, involved in both direct service delivery and major funding grants. In 1999, Anne joined the Consumer Protection Division's executive management team as the Director of Business Services with responsibility for the regulation of credit providers, mortgage brokers, charities and property agents. Since becoming Commissioner for Consumer Protection, Anne also chaired the National Consumer Affairs Regulators Committee at the time the Australian Consumer Law was developed and has served as a member of the Medical Board of WA. Anne ceased her role as ex-officio on 15 May 2017.

Mr Lex McCulloch (ex officio), A/Director General, Department of Commerce

Lex McCulloch has has occupied the position of WorkSafe Western Australia Commissioner since February 2011 and has been in the Western Australian Public Sector since 1978 when he joined the Department for Community Welfare. He has worked in a variety of locations and roles across the State including Derby, Kalgoorlie, Port Hedland and Perth.



Lex's various roles various roles have provided him with a range of experiences such as leading restructuring processes, delivery units, all of which

significant projects and leading service delivery units, all of which have been aimed at improving the wellbeing of people in Western Australia.

The role of WorkSafe WA Commissioner allows Lex to pursue his passion of improving the wellbeing of Western Australians through the creation of safe and healthy workplaces. Lex has a Social Work Degree from Curtin University. Lex commenced his ex-officio role on 16 May 2017, which he later ceased on 30 June 2017.

Resignations and Appointments

Mr Alan Bansemer (Chair), Professor Lyn Beazley AO, Professor Shaun Collin, Mr Andrew Farrant and Professor Barry Marshall continued to serve as members through 30 June 2016 under Section 1 of Schedule 1 of the ITD Act. In December 2016, Dr Jim Ross AM submitted his letter of resignation from TIAC to the Minister for Commerce.

Operating Protocol

The Chair of TIAC, Mr Alan Bansemer and the former Director General of the Department of Commerce, Ms Anne Driscoll developed a condensed version of the Operating Protocol guiding resourcing and communication between TIAC and the Department of Commerce. The newly drafted two page version was designed to provide a simplified outline of the aligned goals to enhance industry and technological development in WA between TIAC and the Department of Commerce. A new streamlined version was sought to ensure clarity and be mindful of the changed resourcing levels across all aspects of Government.

In September 2016, the Operating Protocol was endorsed and signed by Mr Bansemer and Ms Driscoll, and is now guiding operations (Appendix 1). The operating protocol guided the provision of services by the TIAC Secretariat.

TIAC Secretariat

As per the Operating Protocol between the Department of Commerce and TIAC, the Department makes a team of staff (known as the Secretariat) available to TIAC, who provide direct advice and the following support to TIAC:

- secretariat support:
 - o minutes
 - o agenda
 - conflict of interest registry
 - o booking conference and event attendance;
- project management support;
- budget and financial administration; and
- public interest disclosure officer, direct advice and desktop research.
- website maintenance.

The Manager, Secretariat and the Executive Officer are the main point of contact for TIAC. Their role is to liaise with the Department of Commerce and TIAC to ensure continuity of information and advice (as per the Operating Protocol).

The Manager, Secretariat and the Executive Officer are invited to attend TIAC meetings as observers. Other Departmental staff may be invited to attend TIAC meetings at TIAC's discretion.

TIAC Guests

In 2016-2017, Mr Giles Nunis (GCIO) and Ms Kristin Berger, Executive Director, LRID, Department of Commerce were formally invited to attend Council meetings as invited guests of the TIAC Chair, Mr Alan Bansemer.

Financial Statement

TIAC reports under the *Financial Management Act 2006* through the Department of Commerce Annual Report and Financial Statements.

Financial Provisions

While there is capacity for TIAC expenses to be provided for under Section 15 of the ITD Act via the Western Australian Industry and Technology Development Account, TIAC's budget is currently provided as part of the Department of Commerce annual operating budget.

Remuneration of Council Members

Council members' remuneration was recommended by the Public Sector Commissioner under provisions of Section 24 of the ITD Act as follows:

(a) Chairperson's Salary: \$40,000 (per annum)

(b) Member's Sitting Fee – Non-Public Sector: \$660 (per meeting)

(c) Member's Sitting Fee – Public Sector: Nil

The recommendation was made pursuant to Premier's Circular 2010/02 – "State Government Boards and Committees" which excludes those on the public payroll from receiving fees.

TIAC met on six occasions between July 2016 and June 2017: on 2 August 2016, 18 October 2016, 13 December 2016, 7 February 2017, 10 May 2017 and 209 May 2017.

Objects of the Industry and Technology Development Act 1998

The objects of the ITD Act (Section 3) are to:

- 1. promote and foster the growth and development of industry, trade, science, technology and research in the State;
- 2. improve the efficiency of State industry and its ability to compete internationally;
- 3. encourage the establishment of new industry in the State;
- 4. encourage the broadening of the industrial base of the State; and
- 5. promote an environment which supports the development of industry, science and technology and the emergence of internationally competitive industries in the State.

Functions of the Western Australian Technology and Industry Advisory Council

- 1) The Council, under Section 21 of the ITD Act, is required to:
 - a) provide advice to the Minister, at the initiative of the Council or at the request of the Minister, on any matter relating to the objects of the *Industry* and *Technology Development Act 1998*; and

- b) carry out, collaborate in or procure research, studies or investigations on any matter relating to the objects of this Act, including matters relating to the:
 - i) role of industry, science and technology in the policies of government;
 - ii) social and economic impact of industrial and technological change;
 - iii) employment and training needs and opportunities relating to industrial, scientific and technological activities in the State;
 - iv) adequacy of, priorities among and coordination of, scientific, industrial and technological activities in the State;
 - v) methods of stimulating desirable industrial and technological advances in the State:
 - vi) application of industrial, scientific and technological advances to the services of the Government; and
 - vii) promotion of public awareness and understanding of development in industry, science and technology.
- 2) The Council may publish and make available any report or finding produced as a result of any research, study or investigation under subsection (1).
- 3) The Council is to liaise with and advise any person, body or organisation with respect to the conduct of any research, study or investigation into a matter relating to industry, science and technology in the State.
- 4) In carrying out its functions the Council is to:
- a) have regard to the needs of the Western Australian community and the resources of the State;
- b) promote developments in industry, science and technology that increase productivity and competitiveness; and
- c) support developments that create employment opportunities.
- 5) The Council has the power to do all things necessary or convenient to be done for or in connection with the performance of its functions.

Ministerial Directions

Under Section 25 of the ITD Act, the responsible Minister may give directions in writing to the Council with respect to the performance of its functions or the exercise of its powers.

On 11 March 2017, the WA State election was held and resulted in the appointment of the Labor party. Accordingly, during the period from 1 July 2016 to 30 June 2017, there was a change in Government and Ministry. The Hon Bill Johnston MLA was appointed Minister for Mines and Petroleum; Commerce and Industrial Relations; Electoral Affairs; Asian Engagement. Minister Johnston is also responsible for TIAC. His predecessor was the Hon Michael Mischin MLC.

In response to the machinery of government changes, a TIAC Brief has been prepared for the Incoming Minister proposing a practical advisory role to assist the elected Government, which is suited to the 21st century.

Appendix

Appendix 1: Operating Agreement between Technology and Industry Advisory Council and the Department of Commerce

Appendix 2: Technology and Industry Advisory Council - Supporting Access to Commonwealth Funding – Advisory Paper – May 2017 Report





OPERATING AGREEMENT BETWEEN TECHNOLOGY AND INDUSTRY ADVISORY COUNCIL AND THE DEPARTMENT OF COMMERCE

The Technology and Industry Advisory Council (TIAC) and the Department of Commerce ('Commerce') have aligned goals to enhance industry and technological development in WA.

TIAC is an independent Council appointed by the WA Government. Its primary role is to provide advice to the Minister for Commerce, either independently or at his/her request, on the future development of industry, trade, science, technology and research in WA. It also undertakes, collaborates in, or procures research on any matter relating to these objectives.

Both the TIAC Chair and Director General of Commerce will actively work to optimise the effective function of TIAC. Commerce will seek to provide appropriate resources to assist TIAC. At the same time, TIAC will recognise Commerce's own resource limitations and work programs. When it is necessary to change support arrangements to TIAC, Commerce will consult and explain the reason for change.

The TIAC Chair is the primary point of instruction between Commerce and TIAC. Other points of contact for specific projects will be identified by the Chair.

Commerce will provide Secretariat support to TIAC including:

- Meeting arrangements such as venue, agenda, minute taking, and conflicts of interest recording/register,
- Collation (and as necessary preparation of) background briefing papers for meetings,
- Budget monitoring and financial administration,
- Procurement services, and associated preliminary research services and setting of terms of reference,
- · Information and advice as requested by TIAC and the Chair,
- · Building and facilitating networks, and
- Induction support for new members, including Code of Conduct signing.

Commerce staff supporting TIAC will inform their managers of tasks and projects they are undertaking and seek input and support to this work. Both entities will be open with each other to the extent possible and the Chair and Director General will initiate discussion if there is concern by either party. A pre-meeting brief will be provided to inform Commerce of agenda items and possibly to invite input for appropriate topics. Further, a post-meeting brief shall be provided to inform what has been approved for progression.



Government of Western Australia Department of Commerce



Commerce staff attending TIAC meetings and/or viewing its records should treat that information as confidential in the same way that Commerce's own information should only be accessed and released for legitimate purposes. From time to time, TIAC information may be released by Commerce staff with the agreement of the Chair and/or meeting resolutions.

As part of Commerce's annual budget allocation process, TIAC will be allocated a budget for remuneration and procurement of research and other services, within the limitations of Commerce's budget. This allocation process will be in consultation with the Chair. Separately the Secretariat will advise the Chair of the annual budget cycle and the process for separate budget bids by TIAC for consideration by Government for the upcoming financial year.

Noting the above intention, due to the March 2017 election there is currently no information about the bidding process for the 2017/18 financial year.

The Department of Commerce will manage the Conflict of Interest Register and other reporting and disclosure obligations including Public Interest Disclosure.

Anne Driscoll, Director General

Department of Commerce

21916.

Alan Bansemer, Chair

Technology and Industry Advisory Council

1/09/2016



Technology and Industry Advisory Council (TIAC) Supporting Access to Commonwealth Funding Advisory Paper – May 2017

Assisted by
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Introduction

Australia depends on science, research and innovation to increase productivity and remain competitive with global markets. These three closely linked drivers are essential for sustainable economic growth, technical knowledge and expanded business capabilities. The outcome is greater industry diversity, new jobs and improved national well-being.

The Commonwealth makes considerable investment in science, research and innovation (\$10.1 billion in 2016-17), supported by an established set of science and research principles and practical research challenges aimed at increasing investment in areas of immediate and critical importance to Australia and its place in the world¹. In the 2016-17 budget the Commonwealth allocated funding of \$1,733.7 million to three competitive research grant programs – Cooperative Research Centre Program (CRC), Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC). By way of comparison WA's GST allocation from the Grants Commission for 2016-17 is projected to be \$1,970 million.

Western Australia has a poor record in collaborating and attracting Commonwealth science, research and innovation funding. Whilst there has been some improvement, Western Australia is still lagging in attracting Commonwealth funding, compared to other state and territories.

As one example, over the 25-year lifetime of the Commonwealth's CRC Program, there have been 216 CRCs funded. Of these only 12 (5.5%) have been headquartered in WA. (See diagram below). Western Australia's resources industry accounted for 44% of the national business expenditure on R&D for the sector yet no resources CRCs are currently headquartered in this State.

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Science and Research Priorities <u>www.science.gov.au</u>

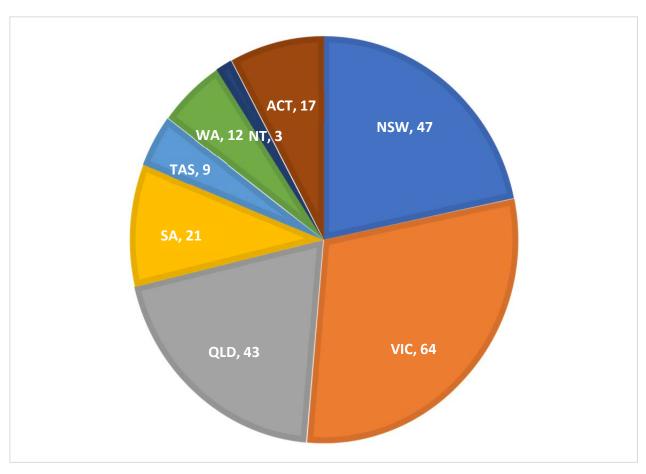
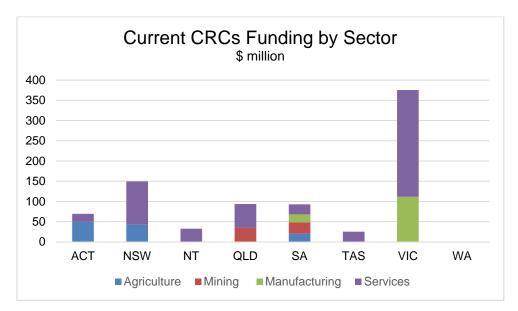


Diagram 1: Headquartered CRC's over the life of the program

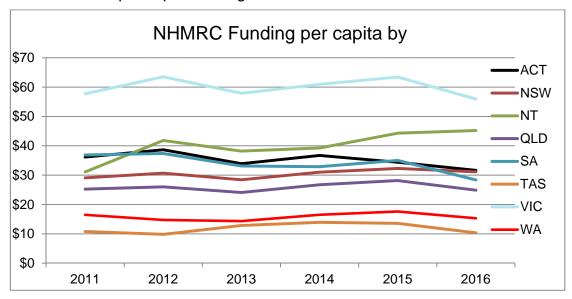
In the recent (March 2017) announcement of new CRCs, Western Australia secured its first headquartered CRC in some years, the CRC for Honey Bee Products. Funding received was \$7 million over five years with \$19.2 million cash and in-kind participant contributions. This is a modest CRC when compared with the other three awarded in the same round. These secured between \$39.4 million - \$55 million Federal funds over ten years leveraging between \$136.8 million - \$178.8 million in cash and in-kind participant contributions.

Analysis of the CRC Centres of Excellence funding by headquarters and industry sector focus shows poor performance by WA in areas of its competitive advantage. The 2017 announcements have not been included in Graph 1 as the contracts are yet to be concluded.



Graph 1: Current CRC Headquarter Funding by sector and state

Another major Commonwealth funding scheme the NHMRC on a per capita basis shows the poor performance by WA applicants with Graph 2 showing WA receiving the second lowest per capita funding.

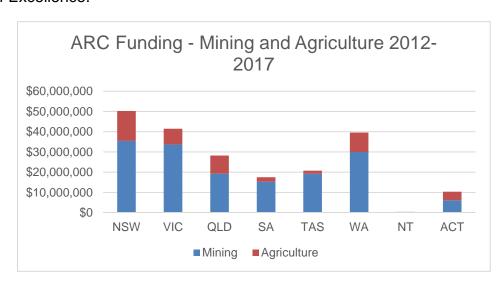


Graph 2: NHMRC funding per capita by State

To improve Western Australia's access to Commonwealth funds, including research and development grants, some critical issues need to be addressed that include:

- Addressing the tyranny of distance;
- Perceptions created by WA being a resource rich state;
- Improve engagement with the Commonwealth including greater representation on committees, councils and boards;
- Improved State Government understanding of the support offered by other jurisdictions given the Commonwealth programs are often competitive grants where state alignment and prioritisation are essential selection criteria;
- Unfocused State strategy, policy and budget support where an investment will provide strong returns to WA;
- Lack of frameworks to guide timely decision-making for support to be offered;
- The lack of small agile support programs to help industry and researchers prepare applications that will be strongly competitive;
- · Lack of clear priorities and contact points within Government; and
- The rapidly aging research community;

Western Australia has been more successful in the smaller ARC grants as can be seen in Graph 3, however the quantum of funding is considerably less that the CRC Centre of Excellence.



Graph 3: ARC Funding by sector and state

Background

Since December 2015 the Commonwealth has identified clear strategy and priorities for the Australian science, research and innovation system through the National Innovation and Science Agenda, the Industry Growth Centres, the Medical Research Future Fund, the Biomedical Translation Fund² and the draft 2016 National Collaborative Research Infrastructure Roadmap (NCRIS). All current Commonwealth investment is aligned with these key priorities and initiatives, including the recently announced Defence Industry Policy Statement and its Next Generation Technology Fund.

The national funding structures predominantly support industry-led research priorities seeking increased local commercialisation outcomes that align with agendas established by the Commonwealth science and research priorities, the Industry Growth Centres' strategy and Industry Competitiveness Plans. When consolidated, the focus areas are:

- food and agribusiness;
- soil and water;
- transport;
- cybersecurity;
- oil, gas and energy;
- · mineral resources technologies;
- advanced manufacturing;
- health, medical technology and pharmaceuticals; and
- environmental change.

NCRIS is also recommending nine focus areas that complement the national science and research priorities and the Industry Growth Centres.

Recent Commonwealth funding announcements have been consistent with the key science and research priority areas, Industry Growth Centre research agendas and greater industry collaboration, making for a very clear landscape of what is required to attract Commonwealth investment.

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Noting the Medical Research Future Fund and the Biomedical Translation Fund are outside the purview of this paper; they are complementarity of the activities under the National Innovation and Science Agenda. Their priority areas include capacity and collaboration, such as industry exchange fellowships, and commercialisation via research incubator hubs and biomedical translation.

	NATIONAL RESEARCH INFRASTRUCTURE												
	FOCUS AREAS	DIGITAL DATA & RESEARCH ePLATFORMS	PLATFORMS FOR HUMANITIES, ARTS & SOCIAL SCIENCES	CHARACTERISATIONS	ADVANCED FABRICATION & MANUFACTURING	ASTRONOMY & ADVANCED PHYSICS	ENVIRONMENTAL SCIENCE	BIOSECURITY	COMPLEX BIOLOGY	THERAPEUTIC DEVEL OPMENT		GROWTH CENTERS	
	FOOD	Y		Y			Y	Υ	Y			FOOD & AGRIBUSINESS	
ПЕЅ	SOIL AND WATER	Y		Υ			Y	Y	Y				
H PRIORI	TRANSPORT	Y	Y									ASTRONOMY & ADVANCED PHYSICS	
SEARC	CYBER SECURITY	Y				Y						CYBER SECURITY	
AND RE	ENERGY	Y			Υ	Υ	Υ						
NATIONAL SCIENCE AND RESEARCH PRIORITIES	RESOURCES	Y		Y	Y	Y	Y					OIL & GAS & ENERGY RESOURCES	
	ADVANCED MANUFACTURING	Y	Y	Υ	Υ	Υ	Υ			Υ		MINING EQUIPMENT TECHNOLOGY & SERVICES	
	ENVIRONENTAL CHANGE	Y	Υ	Υ		Υ	Υ	Υ	Υ	Υ		SERVICES	
	HEALTH	Y	Y	Y	Y	Υ		Υ	Y	Y		MEDICAL TECHNOLOGIES & PHARMACEUTICALS	
	INNOVATION AGENDA												
В	USINESS ENVIRONME	LABOUR FORCE					INFRASTRUCTURE				INDUSTRY LOBBY		

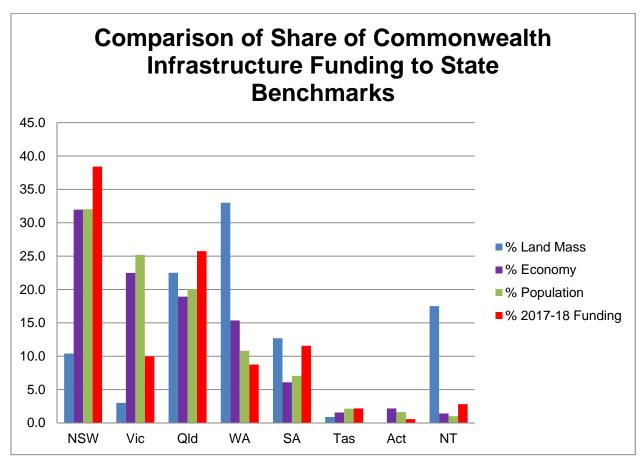
Diagram 2: Alignment of National Science and Research Priorities, Innovation Agenda and NCRIS Focus Areas

Infrastructure – a case study

While this paper is focused on increasing Western Australia's success rate in securing key Commonwealth government research funds, this advice also applies all competitive Commonwealth funds.

Investment in large infrastructure (transport, health and education) is critical in supporting economic growth, creating jobs and building a more productive economy.

Like research funding, Western Australia performs poorly when accessing Commonwealth infrastructure funding. The Commonwealth invests over \$7 billion per annum via the states in this domain. Infrastructure need is not determined by population alone, but also economic capacity and land mass. The latter is a critical benchmark of need. A comparison of WA's performance in accessing Commonwealth infrastructure funding versus other jurisdictions is provided in graph 4 below. Western Australia is the only state where funding levels are below all benchmarks and even South Australia outperforms WA despite having a smaller population and smaller total land mass.



Graph 4 – Access to Commonwealth Infrastructure Funding

Sources: Commonwealth Budget Papers May 2017; Australian Bureau of Statistics, Geoscience Australia.

Purpose of this Advisory Paper

The purpose of this advisory paper is to inform the Western Australian Government and Ministers of the types of policy responses and investment offered by other states to secure Commonwealth funds in this highly competitive national environment.

The Commonwealth programs considered within this paper are the CRC Program, Australian Research Council (ARC) Centres of Excellence, ARC Linkage and ARC Infrastructure Grants and National Health and Medical Research Council (NHMRC) Partnership Projects. While the focus of this paper is limited to these programs, the learnings apply widely across Commonwealth programs.

The paper also explores some current weaknesses in the Western Australia system and provides some recommendations on strategic responses that should be developed to increase Western Australia's competitiveness. The aim is to provide the State Government with options that will improve the State's performance at a time of fiscal constraint.

Policy Issues

What other States are Doing

Different states have adopted a variety of responses to secure Commonwealth funding. State strategies and program reflect desired outcomes such as investment attraction; developing capabilities, building critical mass, creating new industries; driving innovation and solving policy issues. *Attachment A* provides an outline of strategies by other states that are aimed at grant programs that either target the Commonwealth's CRC program, ARC and NHMRC programs or support research and industry collaborations so that the criteria of the Commonwealth programs are met to a high degree.

There are state grant programs that are offered to provide capability and application support. In some states agencies are actively encouraged to be partner with organisations. This provides a practical demonstration of state alignment with Commonwealth strategy and source of funding from existing budgets.

Building Capabilities

During the Beattie era (1996-2007) the Queensland state government, via their Smart State agenda had an active unit which promoted workshops for industry, universities, CSIRO, and research institutes encouraging linkages between industry and researchers. The Queensland Government also focused on securing CRCs into regional areas and that was underpinned by the understanding that it takes two-three years to build a consortium and put a successful proposal together. During this time Queensland secured 16 CRCs located in Cairns, Townsville, Gladstone, Rockhampton, Gold Coast, Toowoomba, with the balance in Brisbane. This focus developed strong capabilities in Queensland and although a change of government has seen the focus drift away from CRCs in more recent times, Queensland has the capabilities and reputation that continues to secure CRC funding. When a major research grant is secured through the CRC program it can lock in a 10 year funding stream.

Solving Policy Issues

VicHealth offers targeted grant programs for Victorian institutional applicants for ARC Linkage Grants, NHMRC Partnership grants and previously the 2010 CRC grant round. The proviso was that VicHealth was included as an industry partner or collaborator in the application. There were two vital considerations; focus of the projects was support for health promotion, public health research and a minimum of 50% of the research conducted in Victoria.

Economic Stimulus (Targeted Funding)

Both the New South Wales and Victorian Governments have set up CRC bid support programs which provide \$30,000 per CRC bid seeking to be headquartered in their respective states. These funds support the first steps in bringing together industry and research teams to scope the research focus, convene stakeholder and partner meetings, develop research impact data linked to economic modelling, source legal, government, taxation and commercialisation advice and prepare for the Commonwealth interview.

Furthermore, both states provide funding support to attract NHMRC Partnership Project grants and ARC Linkage grants.

South Australia also has a targeted CRC Assistance program. The funding requires at least one South Australia Government agency participant and provides funding of up to three years of \$100,000 for a CRC node located in South Australia or \$200,000 for a headquartered CRC.

South Australia also has a Research Consortia program that funds significant collaborations between researchers, industry and government to tackle major challenges in areas of critical need or strategic importance that are in line with the State's ten economic priority areas.

Western Australia

Currently there are no grant support programs designed that target Commonwealth research, technology or innovation funding. WA has the Innovation Vouchers program to assist industry and researchers collaborate, but the program is not targeted at leveraging substantial Commonwealth funds. Royalties for Regions (RfR) funding has been used to leverage Commonwealth telecommunications funding, but TIAC is not aware of RfR funds being used strategically to access Commonwealth research funds.

Key Issues

There are a number of characteristics that underpin successful applications to Commonwealth grant programs. These are:

- strong coordinated system;
- communication of State priorities and strengths;
- facilitation framework for application development;
- incentives for partnerships with the State Government and industry; and
- clear points of contact for accessing State Government facilitation services and support.

These will be looked at in more detail from a Western Australian perspective later in this document. However, two themes across all parts of the Western Australia system are considered challenges to accessing Commonwealth investment – being perceived as a resource based state and the tyranny of distance.

Whilst the resource sector has once underpinned Western Australia a strong economy and lower unemployment, it is important to ensure the State is recognised for other areas of strength and capability such as agriculture and food, marine and fisheries, health and medical and radio astronomy.

There is a perceived view by other states and in Canberra that Western Australia is only focused on resources. This perception needs challenging and correcting. As indicated above the other broad economic strengths listed in the previous paragraph require illustration and advocacy to Canberra decision makers as well as potential east coast project partners. Likewise, communications should be the same from an internal position within the State to ensure that WA based decision makers and Ministers are aware of and able to 'speak in one voice' on a range of the State strengths. It is important that these State leaders understand the economic importance and opportunity that attracting Commonwealth investment is as a driver that broadens the State's economy.

To counter this view, the resources sector in Western Australia is a global scale market that can be accessed to translate research to commercial opportunity, scale up production before diversifying into new market sectors. Automation technology and remote operational systems are recognized examples of these strengths.

There also appears to be some misconception about the financial capacity of resource based States. In spite of efforts by Queensland, in recent years all the major resource States have received substantially less Commonwealth research funding per capita than the South Eastern States. Tyranny of distance and preconceived ideas about resources appear to contribute to this outcome.

Table 1 – Total Commonwealth R&D Funding Allocation by State - \$ per capita – 2014/15

State	\$ per capita
Australian Capital	2,520.49
Territory	
South Australia	535.39
Victoria	512.35
Tasmania	505.82
New South Wales	420.75
Northern Territory	393.57
Western Australia	373.69
Queensland	362.71

Source: ABS Catalogues 8109; 8111 and 3101, TIAC analysis

The tyranny of distance will always be an issue. Any flight to Eastern Australia will take the better part of a day and normally require an overnight stay; versus counterparts on the east coast who can travel to other major cities, attend various meetings and be home before dinner.

Relationships and Trust are Vital to Successful Funds' Bids

Successful bids for Commonwealth funding require demonstrated collaboration between researchers, industry and the State Government as evidenced by active engagement and strategic financial investment. The development of this support base means that strong networks and relationships between potential partners are required. Commonwealth discussions that build relationships and clear understanding of Commonwealth policy drivers designed to promote research activity is increasing in importance.

Within the State government, universities, publicly funded research centres and institutes there has been a culture of 'no flying'. This stay-at-home default position is actively restricting the State's opportunities for success. It means that WA becomes more isolated from decision making networks making the state competitive advantages invisible to the east coast.

In one publicly funded institute, clinicians and researchers are required to self-fund and use annual leave to attend professional conferences. A public servant working for the Department of Health who was invited to participate on a Commonwealth Committee was required to take annual leave to attend committee meetings. Structural disincentives like these do not serve the State well.

The State Government step actively into the field and invite key decision makers on familiarisation visits of two to three days in length or bid for meetings of peak research bodies to be held in Perth. These visitors could meet the relevant Minister, undertake tours to related research facilities and have opportunities to meet with relevant industry sector leaders. This socialisation to build relationships is a proven and potent way of securing greater investment into the state.

Given the vital importance of building national relationships, all institutions and State authorities should demonstrate their commitment to successful WA research bids by investing in strategic investments in sending appropriate staff east to engage with national networks to establish long term relationships.

The State government could lead by example with clear guidelines and KPI's so that Commonwealth engagement is supported by Director's General.

Western Australia Government Co-ordination

In the immediate past industry, science and innovation responsibilities within the State government have been split across difference agencies reducing opportunities for strategic engagement, aligned State decision making and messaging which has led to external confusion and complexity within the state and for outsiders. This, to some degree has hampered strong communication with local grant applicants and the Commonwealth. It has delayed interaction with grant proponents resulting in reactionary activity rather than planned value-adding strategy.

Following the March 2017 State election there is a unique opportunity, that appears likely to be seized, to build critical mass using existing resources to create an 'industry, science and innovation team' that will strategically align the interests in a number of beneficial ways, not least of all in strengthening the State's success rate for Commonwealth research funds.

Core business for this team will be a detailed understanding of the Commonwealth funding priorities, established and maintained regular communications with key Commonwealth officials and a focus on Western Australian effort to successfully access Commonwealth programs. This team will require a detailed understanding of Commonwealth funding timelines, policy drivers, potential visits to the State; as well as communicating state based activities and outcomes. This team will also fashion a strong state narrative for use by Ministers, senior staff and industry leaders.

The team also needs to be able to support and continue to have strong relationships with Western Australian industry, universities and research institutes working on a whole-of-government basis. This network will be strengthened when there is shared information, assistance in advice and bid reviews and strong and active linkages between universities, research institutes and industry so that common interests and collaborative efforts in evidence. With the introduction of the Commonwealth's new CRC-P program (supports short term, industry-led collaborative research), there is an opportunity for the industry, science and innovation team to take a lead role within the Western Australia system to support industry and researchers successfully secure funds. Competing strongly for small projects like CRC-P will help develop capability and in time develop larger collaborations.

Advisory Box 1 - TIAC Advice on Coordination and Communication

To improve funding success the State's structure for supporting industry, science, research and innovation narrative needs to strongly align with This post-election Commonwealth's. is likely to occur in the machinery-of-government changes. Greater communication with Commonwealth and across state based stakeholders with dedicated and expert focus is the first step in this important process.

TIAC recommends the WA Government Consider:

- The industry, science and innovation team set up regular meetings with the AusIndustry State Office and the Centre for Defence Industry Capability to keep up to date with Commonwealth activities and provide introductions to key Canberra based officials and events;
- Establishing strong State based cross-government interactions focused on attracting Commonwealth funding to assist in knowledge sharing, increased collaboration and linking stakeholders. For example: An Economic Development Director General's group with KPIs aligned to securing Commonwealth funding and a senior officers group to implement the funding engagement strategy;
- 3. Establishment of a small but dedicated team (located in the industry, science and innovation agency) to act as a liaison and coordinator with potential applicants, university business development officers, industry, researchers and State agencies to encourage improved links, coordination of activities and to guide the flow of applications. To achieve success, it is vital that partners are identified and applicants work with this team early in the development process. The team's focus is to be outcomes based, where efforts are tracked and quantified for investment success and economic impact;
- 4. Introduce a sounding board/pre-application process that includes a one page document for applicants to obtain feedback before they begin the expensive application. This pre-application primer should include industry needs-analysis and must demonstrate how the proposal aligns with Commonwealth and State priorities. Consider trialling this process for the CRC-P program managed by either the industry, science and innovation team or TIAC.

State Government Agility & Funding

As identified earlier in this paper the New South Wales, Victoria, Queensland and South Australia governments provide State funding that incentivates, collaboration and strong application writing that secures Commonwealth investment. This is in response to the Commonwealth adding collaboration and co-investment in its science and research priorities and infrastructure principles.

The Western Australia State Government currently does not provide funding or programs to support any of these important steps. In the last CRC round, the State Government provided three letters of support for CRC applications to be headquartered in Western Australia, subject to their success under the program and subject to the State's funding being approved in its next Budget process. Support of this type was not competitive in the national processes. The State needs the ability, strategy and resources to commit funds/provide letters of support for applications that meet WA investment priorities in a workable time-frame.

The investment by other State Governments demonstrates that successful support programs do not necessarily require large funding commitments. Some funds can also be provided, in a coordinated fashion, directly out of agency operational funds where the proposed research is essential to the business of the agency. The objective is to invest smartly.

Advisory Box 2 - TIAC Advice Funding Frameworks:

The State develop a Commonwealth Funding Access strategy and a decision making framework that will significantly improve the success rate of securing Commonwealth funds that can be applied transparently and flexibly.

Consideration be given to targeting specific Commonwealth programs while having agile frameworks supporting a wider range of Commonwealth programs. State support should not work in isolation. Systems will need to be put in place that ensure any proposed application for State support is discussed and reviewed with the industry, science and innovation team prior to submission.

Options could include:

- Existing budget allocations, as appropriate, are used to leverage Commonwealth funding substantially increasing resources available for priority activities. This may include using a small amount of Royalty for Regions, infrastructure or research funding allocation for the purpose of specifically leveraging Commonwealth contributions;
- 2. Small fund aimed at supporting CRC and CRC-P application development;
- 3. Modest funds provided flexibly to support applications under a range of Commonwealth programs that will deliver significant benefits to Western Australia:
- 4. State departments, as industry partners, use existing budget allocations where a small redirection of funding could leverage Commonwealth grants.
- 5. New State Government programs that target Commonwealth policy drivers be used instead of lump sum research contributions. Policy focused funding can be smaller in quantum but offer great impact for example funding toward a full time or part time business development manager to commercialize opportunities in Western Australia would have greater economic impact, when compared to the same funding for additional research.
- 6. That election funding commitments be used to great effect to expand their impact by accessing Commonwealth funds for example proposed innovation hubs could leverage Commonwealth Technology Precincts funding.

Any funding model that aims to attract Commonwealth investment requires flexibility to respond to priorities and opportunities in line with Commonwealth policy changes. Funding needs to be treated more as a partnership rather than a tendering process.

There are useful case studies in how some State jurisdictions have targeted Commonwealth funding and demonstrated that they can be agile and move quickly in-line with Commonwealth policy changes.

For example: Following the Commonwealth announcement of its Industry Growth Centres initiative in 2016, the New South Wales government immediately established its 2017 ARC Industrial Transformation Research Hubs and Training Centres Program (ITRP) to increase the likelihood of success under the Commonwealth's ITRP scheme. Whilst the funding was not 'new' funding rather a reallocation of funding from within its overall Research Attraction & Acceleration Program, the name change and refocus demonstrated the New South Wales government's ability to adapt and adjust its policy to keep in line with the Commonwealth and keep ahead of competing jurisdictions in targeting highly sought after funding.

Node versus Headquartered Research Centres

A number of key Commonwealth Programs are not awarded to a single organization, rather involve cross jurisdictional collaboration which encompass a headquarters with nodes of operation. The involvement of Landgate as a successful node of the CRC for Spatial Information is one example. Whilst the attraction of funding into the state for headquartered CRCs, ARC Centres of Excellence or NCRIS investment can bring in significant capability and investment to WA. The State should also have a strategy to secure nodes of these major collaborative projects where Western Australia is less likely to be competitive in securing a headquarters. There is strong economic and strategic benefit in this approach.

Another example is UWA's \$40 million Centre for Microscopy, Characterisation and Analysis which is a node of the NCRIS funded Australian Microscopy & Microanalysis Research Facility (AMMRF). An Allen's Group economic analysis of the infrastructure investment of the AMMRF identified a \$5:1 return on investment of this state-based facility. Whilst the facility is based at UWA, agreements have meant that researchers from ECU and Murdoch³ are also undertaking publicly funded research using the infrastructure on the same basis as their UWA colleagues.

Researchers at the Telethon Kids Institute that leads the Western Australian node of the CRC for Autism headquartered in Queensland stated they were provided an extraordinary level of support from the University of Queensland providing professional linkages and connections enabling wider discussions, in addition to critical administrative support.

The success in securing NCRIS funding for a node of the Australian Genomic Research Facility (AGRF) has created a common-user-facility for both researchers and industry to access a well-resourced capability with substantial genome sequencing capacity. If specialised capability beyond that available in WA is required, AGRF has direct access to the partner facilities and an established logistics chain to call upon the skills from across Australia.

³ Curtin is in the process of organising its agreement which has been held up with issues related to industry ownership of research IP

Advisory Box 3 - TIAC Advice on Securing both Headquarters and Nodes:

Whilst wanting to increase Western Australian headquartered applications for CRCs, and other collaborative funding programs, focus on securing nodes will also secure research funding into Western Australia.

Options could include:

- Western Australia developing applications for nodes under Commonwealth research programs, should have clear priority projects to progress that will benefit Western Australia. State support should be linked to those specific projects proceeding.
- 2. Stepped level of support for a node relative to a headquartered centre that reflects the proportion of grant funds allocated to the node;
- 3. Financial support for a node provided a certain percentage (i.e. 20%) of total research expenditure and activity occurring in WA; and
- 4. Develop a strategy to re-engage and secure nodes for all Commonwealth Industry Growth Centres including board representation.

Representation on Commonwealth Committees and Councils

The Commonwealth's Innovation and Science Australia (ISA) Board provides strategic whole-of-government advice on all science, research and innovation matters and is responsible for administration and oversight of the Commonwealth's innovation and science programs. It has a membership of fifteen appointed by the Commonwealth. Currently there is no Western Australian member on the Board. WA does have representation on three of its five sub-committees. There is a Western Australian entrepreneur represented on each of the R&D Incentives and Entrepreneurs Programme Committees and a researcher on the CRC Advisory Committee. In the critical WA representation stakes, Western Australia is hitting well below the national average.

The Commonwealth Government has established the Industry Growth Centre initiative with one of the goals to articulate industry priorities to influence Commonwealth Government research focus areas and grant allocation, potentially influencing the allocation of approximately \$3.5 billion of annual R&D grants. The Medical Technology and Pharmaceutical industry Growth Centre was tasked with reviewing all 2016 NHMRC grant applications for alignment with the industry needs and commercialisation goals identified by the growth centre. Failure to be involved at the board level and to have a WA node impacts the state's ability to access NHMRC grants.

Additionally, a small number of Western Australian's researchers are appointed to evaluation or assessment committees of Commonwealth funded research grant programs such as ARC and NHMRC grants. These committees are a good avenue into understanding the policy drivers, direction and priorities of the Commonwealth and gaining intelligence on the priorities in the science and innovation environment across Australia. The State Government should be seeking out these representatives, talking to them and increasing its understanding of how these decision forums work and nuances around final outcomes.

There is however a sensitivity about this. These representatives are normally time poor, it would likely require some sort of incentive for them to see value in sharing this information. ARC and NHMRC committees, where grant funding is extremely competitive, intelligence gained by individuals on these committees may not readily be shared, as it gives away an advantage that the individual member has over their peers. What incentive would work is yet to be established.

It is also valuable to have WA representatives on Commonwealth policy committees and council so that knowledge of Commonwealth policy drivers that will influence decision making is understood. Further, such policy committees will often be alerted to a new program or funding round prior to the launch date.

Advisory Box 4 - TIAC Advice on Committee and Board Representation:

The development of a system to encourage the flow of information from Commonwealth committees or assessment panels to key Western Australian Government Ministers, officials and representatives.

Options could include:

- Given the average cost of travel to the East Coast is \$1,000 \$1,500 have a program to provide 50% of cost for members to encourage greater organisational support;
- Committee members participate in a coordination meeting with the Western Australian Chief Scientist, who could then disseminate relevant information to officials;
- Committee members invited to talk at a TIAC meeting with the information then provided to appropriate Minister's and copied to relevant Departments as an outcome of the TIAC meeting;
- 4. Meeting or roundtable discussion with a nominated Minister, Chief Scientist and a small number of key officials; and
- 5. Encourage WA government, industry and academics become representatives on identified priority boards, committees or councils with assistance from a central fund to support a low level of support for travel and engagement. Attendees accessing this fund would be required to report back to a one of the forums listed above or a Director's General group on insights, findings and Western Australian competitiveness.

Universities/Researchers

Our main research universities (UWA, Curtin, Murdoch and ECU) have each gone through significant internal change in recent years. One result is a more focused approach to attracting funding. Some universities now have strong 'business development' teams dedicated to quality of applications, driving collaborations and linkages with industry. University leadership can strengthen their internal systems by working closely with government where is can add value in setting clear State priorities, increase application quality and have agreed stop/go processes in place to reduce the waste of applicant resources.

Changes to the structure of ARC Linkage Grants has led to the reduction of applications. Previously funding of this program was on a round basis, with set dates. The ARC now has rolling funding, allowing applications to be submitted at any time. This has seen a reduction in the number of applications as there is no deadline incentive to motivate the researcher to submit. University grant application processes concentrate on funding schedules, the change to the ARC process was to accommodate industry driven proposals that are developed when a need arises.

The University of Queensland however, has maintained its rate of applications. This university has set up an internal process where submissions are only forwarded to the ARC four times a year creating the timing incentive required. UWA is looking to implement a similar process.

One emerging risk to attracting Commonwealth funding is the ageing population of Western Australia's senior researchers, with fewer mid-career researchers with a strong track record to fill the gap.

Advisory Box 5 - TIAC Advice on Attracting Younger Researchers:

It is important that our universities and research institutes continue to build capabilities. Some consideration should be given to the development or attraction of mid-career researchers and to the development of early career researchers.

Options that could be considered or further investigated by TIAC:

Mid-career researchers:

- 1. Our universities have high quality research facilities. Programs should be developed to leverage these to attract mid-career researchers.
- The WA Government have catalytic funding to encourage junior Chief Investigators to be specifically included in research projects proposed in CRC, ARC and NHMRC applications.

Early career researchers:

- 1. Encourage universities to provide sabbaticals for younger researchers. These could be one to two months providing them the opportunity to develop connections which can lead to future collaborations;
- 2. Develop an Early Career Post-Doctoral Scholarship to incentivise PhDs to 'go-away', develop a track record and an international network. Provide funding contribution for up to two years they are away. This would then be extended for further two years upon return to Western Australia to continue research in collaboration with industry. If the recipient chooses not to come back to Western Australia within a specified time frame they will lose access to the extended research funding. It is likely in the long term the researcher will return and the offer of funding, even if not accepted, will leave a positive impression.
- 3. Work with industry to identify and promote career paths for researchers including the development of a part time 'attachments' within industry for these highly skilled individuals to assist transition from research to industry. This will also require their university to support and recognise the value of this industry experience.
- 4. Develop a support program to assist SMEs to access PhD resources through the iPrep program.

Technology and Industry Advisory Council;

TIAC can play an important role supporting the Western Australian Government attraction of Commonwealth funding to the State. A reinvigorated TIAC with broad industry, academic and technologically informed membership can assist in ensuring the sharing of ideas or issues, develop connections across sectors, identify opportunities and promote areas of strength.

Advisory Box 6 - TIAC Advice on its Role to Help Access Commonwealth Funds

Consideration be given to the right mix of expertise of TIAC members and the role TIAC can have in facilitating investment attraction and advice to government.

Options could include:

- 1. TIAC membership should include a mix of representatives from industry, science and innovation;
- 2. TIAC has a role in a pre-application process, providing feedback to applicants, the industry, science and innovation team and other areas of government as appropriate;
- 3. TIAC to maintain a focus and provide policy advice on attracting Commonwealth funding;
- 4. TIAC should be considered as a mechanism for supporting Commonwealth committee, council and board membership where TIAC can also serve as a vehicle to disseminate important policy directions from; and
- 5. TIAC form a specific sub-committee that can draw on expertise as required to assist the Government with this task.

STATE BY STATE GRANT PROGRAMS SUPPORTING ACCESS TO COMMONWEALTH FUNDING OR RESEARCH AND INDUSTRY COLLABORATION

State	Program	Program objectives	Funding	Application process
South Australia (Department of State Development)	Cooperative Research Centre Assistance Program	 Provide State Government agencies with opportunities to participate in CRCs; providing additional capacity to the agency and improved access to knowledge transfer, which can deliver direct economic, social and environmental benefits to the State Influence CRC research objectives, activities and projects to address issues relevant to South Australia Provide funding to contribute to the employment of researchers and technologists in South Australia Promote regional development through the creation of new jobs and the seeding offuture industry development opportunities Assist to develop networks between researchers, industry participants and regulators both nationally and internationally 	Applications are required to have at least one SA Government agency participant in the CRC as the funding arrangement is between the Department of State Development and the agency, not directly with the CRC. Funding available are up to three years of funding at the following rates: a) \$100,000 for a CRC node located in SA b) \$200,000 for a CRC to be headquartered in SA	 Applications are assessed competitively against the following: Purpose of the CRC and the proposed benefits to South Australia Development of research themes and sustainability of research leaders Expected outcomes of the CRC assistance program funding support Alignment with one or more of South Australia's priority areas Potential for the CRC to foster and build critical mass and key R & D capabilities in South Australia There is an application template which requests applicants to address the following: A focussed description of the CRC – key objectives, research themes, partner organisations etc. A description of expected outcomes resulting from Government funding support and KPIs A description of Governance arrangements of the CRC Summary of funding commitments Each CRC bidder is given a 45-minute time allocation to present their proposal to the panel.
South Australia (Department of State Development)	Premier's Research and Industry Fund – Research Consortia Program	 Strategically address large scale research challenges in areas of critical need and/or strategic importance to South Australia which align with the State's Ten Economic Priority areas. Develop and support local, national and international networks and collaborations that bring together academic, industry, private and public organisations to address these research challenges. Support research that pursues innovative solutions that are high impact and capable of being effectively utilised by end-users, particularly South Australian companies, where possible. Link existing research strengths and build critical mass and capacity for interdisciplinary approaches to address research challenges. Attract and retain from within Australia and abroad, world-leading researchers. Develop and support promising early to midcareer researchers and postgraduate research students. 	Provides funding for significant research collaborations between universities, other research organisations, government and industry to tackle major challenges in areas of critical need and/or strategic importance to South Australia within the State's Ten Economic Priority areas. Funding will be awarded up to a maximum of \$4 million for a term of four years (nominally \$1 million per annum).	 Stage 1: A call for Expression of Interest (EOI) applications will be made in the first instance. The Expressions of Interest will be assessed and then shortlisted by a Selection Panel. Stage 2: Applications will be invited from this shortlist and will be assessed by a Selection Committee and external experts. Applicants will subsequently be invited to participate in interviews with the Selection Committee.

Grants identified are focused predominantly on research grants or research and industry collaboration grants that are targeted towards Commonwealth funding programs such as the CRC Program, ARC grants and NHMRC grants. The study did not include industry specific research grants such as renewable energy/ARENA.

State	Program	Program objectives	Funding	Application process
New South Wales (Department of Industry)	NSW CRC Bid Support Program	Provided for the preparation of Commonwealth program applications and bid materials including: • Analysis of research impacts • Economic modelling and preparation of Economic Impact Projection Template • Sourcing of legal, governance, taxation and commercialisation advice • Convening stakeholder and partner meetings and forums held in NSW • Assist NSW research consortia in preparing for Commonwealth interviews	A one of grant of up to \$30,000 may be awarded per CRC if they are to be headquartered in NSW. Applicants who have previously received Bid Support Grants are not eligible for reapplication, unless the funding request relates to an application which is materially different to the one previously received.	Applications are ranked against the following: The extent to which the establishment of the CRCwill benefit the NSW economy, society and/or environment The extent to which the CRC addresses NSW Government goals, including those in the NSW 2021 plan The level of participation of NSW organisations in the CRC The extent to which the application addresses and contributes to CRC priority areas Source of the services or advice required for the production of the application are external to the proposed CRC participating organisations Services or advice being funded are an appropriate and cost effective use of funds Level of the CRC presence in NSW
New South Wales (Department Chief Scientist and Engineer)	Research Attraction & Acceleration Program (RAAP)	 To encourage and support high-quality, high-impact research, and increase innovation in the state's R&D system. Support science engagement and outreach activities in NSW. 	RAAP funding is primarily allocated through competitive grants rounds using a rigorous selection process – and used to leverage funds from national and international bodies. Has a number of programs under the banner NSW Premier's Prizes for Science & Engineering National Science Week Science & Research Breakfast Seminar Series Engineering Week Australia National Youth Science Forum Australian Science Media Centre (AusSMC) Inspiring Australia's Regional Science Hubs Program	
	ARC Industrial Transformation Research Hubs and Training Centres 2017	 Support NSW applicants funded under the Commonwealths Industrial Transformation Research Program (ITRP) Enhance the capacity and capability of the new operations of Hub or Centre Grow the capacity of Hubs and Centres and increase the likelihood of success under the Commonwealth ITRP scheme Research priorities for this ARC ITRP are in line with the Commonwealths Industry Growth Centres: Advanced Manufacturing Food and Agribusiness Oil, Gas and Energy Resources Mining Equipment, Technology and Services Medical Technologies and Pharmaceuticals 	The ARC Program provides funding through two schemes: Industrial Transformation Research Hubs (ITRH) and Industrial Transformation Training Centres (ITTC). Provides conditional co-investment support for NSW-headquartered ITRH and ITTC, as well as those with more than 40% of total research expenditure and activity occurring in NSW. Total funding pool available to support successful ITRH and ITTC is \$500,000.	Applicants suitability for funding will be based on the proposed research to be undertaken, the benefits to NSW, and proportion of expenditure/activities to occur in NSW.

State	Program	Program objectives	Funding	Application process
Victoria (Business Victoria)	Victorian CRC Bid Support Program	Assists with financial support against expenditures associated with applying to the Commonwealth Government's Cooperative Research Centres (CRC) Program. Application Development Grants are available to partially offset any third party costs associated with preparing a CRC Program application to the Commonwealth Government CRC Program.	Grants up to \$30,000 are available to be used for outside services such as bid management, Legal advice and economic analysis. Some travel expenses may also be claimed to a maximum of 25 per cent of the grant awarded.	
Victoria (VicHealth)	NHMRC Partnership Project Grant ARC Linkage Projects Grant	 encourage and develop strategic research partnerships between higher education institutions and practitioners and policy makers to advance knowledge in health promotion and public health support small cross-disciplinary teams working on practical problems that have the potential to generate large health gains for Victorian population groups generate applied research outcomes that can be used to make a difference to the health of Victorians generate research and knowledge that is immediately useful for health promotion practice increase the communication and translation of research in innovative ways develop partnerships between policy makers, influencers, and practitioners. 	Provides between \$25,000 and \$50,000 cash plus \$12,500 in-kind support per annum for up to three years. VicHealth to be an industry partner and project must address one of the five VicHealth strategic imperatives.	Stage 1: Expression of Interest Applicants can apply online by completing a short EOI which will cover: • Administering organisation details • Project Contact/Chief Investigator • Project title and timelines • Research team • VicHealth strategic imperative and research priority addressed • Project summary • Potential or confirmed partner organisations Stage 2: VicHealth Full Application Shortlisted applicants will be required to complete a VicHealth Full Application, expanding on research objectives, outcomes and methodology.
Queensland (Advance Qld)	Innovation Partnerships	 Increase the level of collaboration between industry, SMEs and research Boost productivity growth and the competitiveness of existing industries Accelerate the development of emerging industries and technologies where Qld could have comparative advantage in global markets Increase the speed and scale of translation of our science and research into new products, services and business models that can help to drive economic and jobs growth in Qld. 	Grants of up to \$1,500,000 are available for projects with a duration of up to three years	Applications are assessed in a competitive, merit-based process against the program's assessment criteria. The following criteria underpins this process: Demonstrated planning of research project Quality of collaboration Clear outcomes and relevance for Queensland Track record (demonstrated research and translation record)

State	Program	Program objectives	Funding	Application process
Western Australia (Department of Commerce) # not currently operating	Innovation Investment Facilitation Program	Funding was provided to support state, national and international research and development funding applications to successfully leverage significant Commonwealth, international or industry R&D funding into WA.	The level of funding support available under the program was between \$20,000 and \$100,000 per successful application over one year. The funding was available for the development of the external R&D funding bid, including early stage proposal assistance, proposal development, proposal review and interview preparation assistance. Eligible expenditure included: Temporary expert assistance (e.g. facilitator, consultant or contractor) associated with development of the external bid National and/or international travel and accommodation costs (economy) directly related to the development of the bid Staff costs for personnel developing the bid	The process was a one stage process with a full application. Eligible applications were evaluated and ranked against the following criteria: • Alignment with the Program Objectives • Need/Gap/Market Failure • Level of Impact/Change • Capability and Capacity • Excellence • Complementation/Collaboration • Comparative Advantage • Financial Viability
TAS, ACT & NT	N/A	No programs targeting industry and research collaboration, however they each have one or two small vouchers or grant programs to support innovation in SMEs.		