



Victorian TAFE  
*Association*



## **Review of Research Policy and Funding Arrangements**

This submission is made by the Victorian TAFE Association (VTA). The VTA is the peak body for Victoria's public vocational education and training (VET) providers. VTA members include four dual sector Universities and twelve stand-alone public TAFE Institutes. Services provided by VTA to members include public policy advocacy, workforce relations advice, education projects, research, government liaison and representation, and professional development.

VTA members offer a diverse range of programs and services supporting technical education, and have close relationships with industry - including large, medium and small enterprises. In addition, its members comprise four technologically oriented dual sector universities: RMIT University, Swinburne University of Technology, Victoria University and Federation University. Other members deliver a range of higher education qualifications in their own right or have close working relationships with universities.

The VTA welcomes the opportunity to respond to the Review of Research Policy and Funding Arrangements and its associated issues paper. The review is focussed on '...opportunities for the reform of research policy and funding arrangements within the Education and Training portfolio to deliver on the Government's Agenda for Action under the Boosting the Commercial Returns from Research strategy'.

The focus of this submission is that the review has the opportunity to look beyond the university sector as the predominant and even sole site of significant research and development and conceive the issue of research policy and funding arrangements within the broader perspective 'innovation' and the associated incentives to innovate, and to commercialise and disseminate that innovation. We argue that public VET providers can play a greater and more recognised role in this process. TAFE, in particular, is a missing link.

Governments at both state and Commonwealth levels acknowledge the contribution of small to medium enterprises (SMEs) to the economy and to the employment market. While large companies, often foreign controlled, can afford to commission research with universities, for SMEs it is more about the 'D' in Research & Development. Thus, SMEs do not tend to have strong relationships with university research programs. Instead, they link in with their local public VET provider. Toner and Dalitz (2012, p.1) argue in their paper "[Vocational Education and Training: the 'terra incognita' of Australian Innovation Policy](#)" that:



- *the innovation studies literature has established the central role of the VET system and VET trained workers in technology generation, diffusion and incremental innovation, and*
- *the pattern of innovation in Australia makes firms more reliant on VET skills to implement innovation compared to many other OECD nations.*

Despite this, they suggest, the VET system is largely excluded from government innovation policy and programs in Australia. They note that:

*Empirical data for this contention is drawn from a textual analysis of Federal government innovation policy statements, government sponsored reviews of the Australian innovation system and charting the membership of key government innovation policy advisory structures.*

However, VET trained staff and public VET providers have the capacity, and are, contributing to significant research and development. Examples of existing research and innovative capacity of public VET providers involving partnerships with industry are appended to this submission. These cover advanced manufacturing, sustainable energy and technologies and water management.

Whittingham, Ferrier and Trood (2003) noted that the VET sector is not involved to the extent it should be in the national innovation system as represented by Australia's co-operative research centres. Inspection of the lists of participating organisations suggests that this persists, although two member dual sector institutions (Swinburne University of Technology and RMIT University) are participants in a number of CRCs.

In addition, Herrmann and Peine (2012) argue that the interaction between scientists and non-science employees in a pharmaceutical firm seemed to be a vital source of ideas for incremental or even radical product innovations and the combination of these employees' skills and scientific knowledge seems to multiply rather than just add to innovative practice. Thus, even such major R & D involves input from VET trained staff as well as the conventional research and commercialisation roles ascribed to scientists, at least within innovative companies.

Moreover, in a range of other countries admired for their abilities to commercialise innovation, such as Finland, Germany and the United States, public vocational colleges are an important part of national innovation policies. They include in their activities a broad range of consultancy, technology demonstration and applied research and development functions. Canada's publicly supported colleges, institutes and polytechnics contribute to the research and innovation cycle in Canada through applied research and partnerships with companies. 80% of colleges and institutes had a policy on intellectual property and 85% of respondents reported partnerships with universities. The contribution of Canadian colleges and institutes to this cycle of innovation and research is seen as crucial to their knowledge-based economy (Colleges and Institutes Canada 2014). An upcoming LH Martin (University of Melbourne) study mission to Canada will explore these initiatives in greater detail. VTA contends that such contributions to innovation should be part of a public provider's mission in Australia as well, and should be explored further.



Finally, and as Guthrie and Dawe (2004, p.18) noted:

*Australian Government policy needs to move from this 'scientific discovery' notion of innovation to one which sees it as a continuous learning process. This is the way innovation occurs in the major industries on which Australia's economy rests. These industries are indirect users of research and development, and innovation is largely based on re-combining or adapting knowledge. It is in this area that the VET sector has played, and will continue to play, an important role.*

In summary, the Victorian TAFE Association urges the Commonwealth Government to broaden its review of Australia's existing research policy and funding settings to consider engaging Australia's public VET providers in a structured program of innovation, research and development. Leveraging the strong, existing relationships between TAFE institutes and industry/SMEs, the return on investment will be realised more directly in the economy, sooner.

The VTA looks forward to discussing this proposition with you further.

#### **References cited**

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#### **Key Contact**

Andrew Williamson  
Executive Director  
Victorian TAFE Association  
T 03 9639 8100  
M 0400 403 755  
E [awilliamson@vta.vic.edu.au](mailto:awilliamson@vta.vic.edu.au)



## Appendix

### Advanced Manufacturing

#### Capability Statement - Box Hill Institute

##### Key areas of expertise

- Oil and gas extraction – on and offshore
- Process manufacturing of oil and gas derivatives, e.g. plastics
- Biotechnology industry, pharmaceutical and academic research

##### Research/program delivery capabilities

Box Hill Institute provides education and training in the process plant discipline of oil and gas and downstream derivatives and in laboratory technology for the research, pharmaceutical and biotechnology disciplines.

The faculty has a strong industry background with considerable experience in oil and gas extraction through to product manufacturing as well as pharmaceutical and biotechnology.

Box Hill Institute undertakes research in biotechnology in cooperation with industry partners. It has industry and organisational linkages with companies including Esso, Qenos, Alcoa, Shell, Caltex, Sypharma, GlaxoSmithKline and the Department of Environment and Primary Industries.

#### Capability statement - Chisholm Institute

##### Key areas of expertise

- Mechanical Engineering
- Mechatronics
- Electrical and Electronics
- Lean and Competitive Manufacturing
- CNC Machining
- Precision Robotics
- Vacuum Technology
- Clean Room Technology
- Optical Sensors and Vision System
- Fluid Power
- Industrial Control
- Electrotechnology
- Renewable Energy
- Fabrication and Welding
- Supply Chain Management
- Automotive
- Polymer
- Computer-aided Design (CAD)
- Transport and Logistics
- Electronics
- Management



### **Business Research/program delivery capabilities**

Advanced Manufacturing is constantly transforming. That means there is an increasing need for higher technical skills, a broader range of skills and skills that are regularly updated. With Advanced Manufacturing as a major specialisation, Chisholm conducts national and international research to ensure its centres of excellence meet current and future industry needs. The Centre for Integrated Engineering and Science is a state-of-the-art training facility that includes a certified polymer testing centre. The new A\$15 million Automotive and Logistics Centre offers training in a fully simulated work environment using the latest industry technologies. Chisholm staff have extensive industry experience. Many also have experience in international business contexts that utilise their extensive technical and training capability. Chisholm works with a wide range of industry advisory groups to ensure education and training is consistently relevant to employers.



## **Sustainable energy, sustainable technologies and water management**

### **Capability statement – Melbourne Polytechnic**

#### **Key areas of expertise**

- Carbon Trading
- Solar Power and Water Heating
- Wind Power Generation
- Geothermal Exchange Heating and Cooling
- Black and Grey Water Treatment
- Rainwater Harvesting
- Waste Management and Recycling
- Water Resource Management for Horticulture
- Agricultural and Horticultural Land Conservation

#### **Research/program delivery capabilities**

Melbourne Polytechnic's Diploma of Sustainability provides an opportunity to gain the tools required to be involved in the development of a sustainable society. Its new Green Skills Centre offers students a unique opportunity to acquire these skills by working in and on a building that has been designed and built using a range of cutting-edge sustainable processes. These include solar technology, water management systems, a computerised Building Management System, geothermal air conditioning, passive design and sustainable building materials. The Melbourne Polytechnic Green Skills Centre is registered under the Green Building Council of Australia's industry recognised 'Green Star' assessment tool for a Five Star Rating.

Its Diploma of Sustainability can be completed in conjunction with another diploma or higher qualification to achieve a dual qualification. Melbourne Polytechnic also offers a range of pathway opportunities, credit transfers and recognition of prior learning.

### **Capability statement - Sunraysia Institute of TAFE**

#### **Key areas of expertise**

- Solar Energy
- Sustainability

#### **Research/program delivery capabilities**

The National Centre for Sustainability (NCS) operates out of SuniTAFE's Mildura and Swan Hill campuses. NCS works with local stakeholders, community and government agencies to achieve sustainability gains in land and water management. It acts as a project broker, harnessing resources, coordinating teams and project managing initiatives that improve the physical sustainability of natural resources, while developing the capacity of communities to implement positive change.

Relevant research areas include biomass and biofuels.