

9 April 2021

Mr Jeff Connolly
Chair
Expert Panel
University Research Commercialisation Scheme
C/- Department of Education, Skills and Employment
GPO Box 9880
CANBERRA ACT 2601

Via email only: urcs@dese.gov.au

Dear Mr Connolly

Submission for the Scoping Study - University Research Commercialisation Scheme

Thank you for the opportunity to make a submission in response to the consultation paper on *University Research Commercialisation*.

Introduction

TAFE Directors Australia (TDA) supports the Morrison Government's commitment to increasing the translation and commercialisation of research for the economic and social benefit of Australia. Australian TAFEs can contribute to this success.

I note that the purpose of the consultation is to inform a scoping study which is seeking to increase commercial outcomes from research funding to universities. TDA acknowledges 'Australia performs well in knowledge creation but is poor in translating this knowledge into new products or other innovations.'

TDA provides input to this consultation on the basis that effective commercialisation (or returns captured for the Australian economy) is more likely to be successful if there are effective ecosystems in place for translation of research. Central to this is the need for knowledge and skills to support the research in the first place but also to provide a workforce capable of translating the research 'into production' across supply chains. Translation is often not linear from original research to application.

TAFEs and Applied Research

Of the 27 tertiary institutes that are members of TAFE Directors Australia (TDA), nine TAFEs deliver higher education programs, with a further six members as TAFE divisions of dual sector universities¹. The comprehensive offering of TAFEs, at all levels, mean TAFEs are

¹ <https://tda.edu.au/highered-and-tafe/>

closely aligned and engaged with most sectors of the economy, industries, and with employing businesses. They undertake applied research through practice-based innovation, whether it is technology transfer to workers and students, or engaging with business to develop new products and service processes.

TAFEs have strong engagement with industry and businesses, especially small and medium enterprises (SMEs). With SMEs comprising the bulk of employment in Australia a major consideration for success in commercialisation is capacity for engagement at this level.

To assist the Expert Panel, attached is a submission we have already provided to the Australian Government, *SMEs and TAFEs collaborating through applied research for growth*.

Considerations for the Scoping Study

In respect of the scoping study TDA offers the comments below.

Also consider structural reform

The consultation paper has presented a range of possible programmatic responses to the commercialisation challenge. This may be the ultimate outcome from the scoping study, however, it would be unfortunate if structural issues were not explored in the study.

Even though the paper raises the misalignment of incentives in the current research system in universities as an issue, there are broader structural mismatches in the research and innovation systems that warrant investigation. For example, researchers such as Melkas and Harmaakorpi² contend that much innovation (commercialisation) policy has been equivalent to science and technology policy and even recent initiatives of regional and national clusters have not been as effective as anticipated. They conclude that it is “increasingly considered essential that science and technology-based innovation policy (STI) would be combined with practice-based innovation policy (DUI – doing, using, interacting). In the Australian context this could be extended to improved alignment with Commonwealth established industry growth centres and state and territory bodies engaged in industry development, amongst other things.

Deal with public good elements of research

Although the consultation paper is silent on public good elements of research it would be useful for the scoping study to explore this issue. TDA assumes from the consultation paper that the objective is to pursue commercial outcomes from public research funding, not to generate commercial returns (for Government). The distinction influences program design and measurement. Generating commercial returns from public research funding raises the question about who benefits from the returns and the extent of public financing and

² Helina Melkas and Vesa Harmaakorpi *Practice-Based Innovation: Insights, Application and Policy Implications*, Springer 2012

oversight to leverage those returns. It could also be argued that it distorts market incentives to invest in new products and services. An expectation of commercial outcomes on the other hand seems more plausible as it sets a clear expectation on funding recipients to pursue commercial relationships with business and consider the risk-return element between parties based on the merit of each project. This way, the return to the economy more broadly would be achieved.

Consider the skills ecosystem

Among many factors influencing the success of commercialisation is the absorptive capacity of Australian industry and the workforce. Even today, the readiness of workers to engage with, and apply new technologies and automation, is recognised as limiting Australia's capacity to take-up the suite of digital and automation options currently available.

The final report of the Skills for Victoria's Growing Economy Review by the Hon Jenny Macklin – *Future Skills for Victoria* – provides a useful evidence point. Drawing on analysis by AlphaBeta the report shows that an active skills policy aligned with industry policy creates demand for higher order skilled workers and professionals. The lack of the right talent would be a drag on realising these benefits.

The message is clear – skills deepening that is coordinated with industry policy not only meets new skills needs, it also helps to capture those industry opportunities in the first place³.

Facilitate networks and think about levels of research translation

In view of the complex nature of research translation, the scoping study would benefit in considering the role of networks. This would be broader than the university-industry link mentioned in the consultation paper or the linkages with venture capital markets, and could extend to players like industry growth centres and TAFEs which can have effective roles in facilitating translation with businesses. These can create platforms for technology transfer to firms and through workers.

Final program design could include these features as a key condition for funding, for example, and widen the impact of public research funding across the tertiary education and training sector.

Widen the pool of recipients

Program design may also benefit from opening up commercialisation research funding to other economic agents such as TAFEs. For nearly 20 years public vocational colleges and polytechnics have been supported by the Canadian Government to engage with industry and

³ <https://www.education.vic.gov.au/Documents/about/departments/macklinreview-finalreport.pdf> P37

business in applied research and commercialisation⁴. Similarly, the European Commission has recognised the importance of vocational education institutions as part of Europe's innovation systems and has funded centres of VET excellence to improve applied research collaboration with businesses⁵.

Noting the difference in size or impact of research between universities and TAFEs for example, the program could include an element of funding for rapid application of new research. In this case, the application process would be less cumbersome but with the expectation of more rapid roll-out to generate the commercial activity.

Capture spillovers within public institutions

All research activity comes with downside risks, particularly in achieving commercial outcomes. It is the possibility of these risks that justify restricting public research funding to public institutions. This way governments de-risk investment decisions for business (as outlined in the consultation paper) but the knowledge, lessons and other spillovers are captured for public benefit, whether that be in future research or in knowledge and skill development.

This logic applies equally to TAFEs as public institutions. The capacity to roll TAFEs into the national research ecosystem should be considered in the scoping study.

We hope this is helpful for the panel's deliberations. Further background information is provided at **Attachment A**.

If the panel needs further information, I may be contacted on 0412 299 028 or at crobertson@tda.edu.au.

Yours sincerely



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TAFE Directors Australia

⁴ https://tda.edu.au/wp-content/uploads/2020/10/2020-10-19-SMEs_and_TAFEs_Collaborating_Through_Applied_Research_for_Growth-003.pdf

⁵ https://eacea.ec.europa.eu/erasmus-plus/actions/centres-of-vocational-excellence_en

Research and scholarship - TAFE institutes

TDA acknowledges that scholarship underpins effective research. Scholarship and scholarly activity manifest in a variety of practices and is reflected in the research undertaken by TAFEs through vocational education and training (VET) and through higher education (HE).

In addition, TAFEs by their very nature, including for higher education offerings, are highly responsive to the needs of industries and employers.⁶

A recent Australian Research Council discovery project *Vocational institutions, undergraduate degrees*, shows there are a range of positive outcomes from higher education programs at TAFEs.⁷

- Degrees at TAFE are oriented to industry needs and prepare students for employment in specific occupations, often in new areas of para-professional work;
- Degrees at TAFE provide distinctive learning environments built on experiential and practical pedagogies facilitated by small cohorts and small class sizes;
- Students' reasons for selecting higher education at TAFE stress the student experience and learning style, alongside identifying the relevance of the degree for their chosen field of employment; and
- Designers of individual TAFE degrees are able to be highly responsive to the needs of industries and employers.

Other aspects of TAFE capability

In terms of the discussion questions in the consultation paper, it is worthwhile noting that:

- TAFE practitioners in applied research are experts in industry and technology areas and working with their industry partners and employing businesses on a continuing basis.
- TAFEs engage with their business partners, including through a strong industry-aligned organisational culture, to jointly manage intellectual property rights and regulation (TAFEs are well-versed in managing regulatory risk).
- TAFEs focus on commercialisation of applied research for the benefit of their business partners.
- While TAFEs have the capability to publish their research findings, TAFE staff do not have the same drivers as university staff to publish or to seek research funding for publication purposes.
- Translational research that shows proof of concept and viability at an early stage is the standard operating model for TAFEs and their business partners. This success is quickly transferred amongst industry and is effectively folded back into the network of TAFEs teaching and applied research practices.

⁶ <https://tda.edu.au/wp-content/uploads/2021/01/2020-12-TEQSA-Scholarship-Submission.pdf>

⁷ <https://tda.edu.au/wp-content/uploads/2020/05/The-Value-of-Higher-Education-at-TAFE-ARC-Report-May-2020.pdf>

- TAFE business partners have a clear line of sight as to how such investments would raise their productivity. TAFEs, as their applied research and commercialisation partner, are very conscious of this outcome.