



18 September 2015

GROUP OF EIGHT SUBMISSION TO THE REVIEW OF RESEARCH POLICY AND FUNDING ARRANGEMENTS FOR HIGHER EDUCATION

The Group of Eight (Go8) welcomes the opportunity to provide input into the *Review of Research Policy and Funding Arrangements for Higher Education* (the *Review*). Please note that this submission represents the views of the Go8 network; member universities may also make their own, more detailed submissions.

The Go8 comprise Australia's most research-intensive institutions, representing a powerhouse of Australian university research, as reflected in metrics such as those provided in Appendix A. As such, the Go8 is uniquely positioned to provide advice and expertise on strengthening the research policy framework to ensure Australia is optimally positioned to perform within a 21st century, global knowledge economy.

Executive Summary and Recommendations

Australia is at a critical crossroads. Technological advancements are driving unprecedented levels of change across the globe. Economies that wish to be competitive and successful in this new environment will need to negotiate the path from producers of traditional goods to developers and crafters of knowledge. Australia is well placed to capitalise on our already strong research sector and become leaders in the 21st century, global knowledge economy. But this will require an effective and efficient approach to research funding.

The Go8 believes that the most critical factor in ensuring Australia realise its full potential is excellence. The higher the quality of the research we produce, the better positioned we are to support industry, both here and overseas; drive discovery and innovation; support the reputation of Brand Australia and thus our hugely successful education export industry, currently valued at \$18 billion;¹ and develop the high level expertise that will increasingly become the price of participation in the technology-driven, global knowledge economy. It is also true that industry partners looking to engage in R&D collaborations will seek to do so with those institutions that produce the highest quality research in the most relevant area. Therefore, the best strategy Australia could take to secure its future is to ensure that its research efforts are of the highest quality.

We are pleased that the *Review* has noted the need to take account of the numerous other reviews and strategies tasked to consider aligned issues, as outlined on the first page of the *Issues* paper. Policy coherence across the related areas of research funding, training, prioritisation, infrastructure, CRCs and R&D tax incentives will be critical to ensuring that Australia's research endeavours are optimised to ensure maximum national benefit, now and into the future.

¹ <https://ministers.education.gov.au/pyne/education-exports-worth-181-billion>



We do not believe that current levels of public research funding are adequate, especially given the increasing importance of research and knowledge transfer to social and economic wellbeing. However, we also accept that there are ways in which the existing funding could be made to work more efficiently in the national interest. For example, one of the biggest issues facing the sector at the moment is the lack of support for indirect costs of research. The rigorous selective processes employed by funding bodies such as the ARC and NHMRC mean that the projects that are ultimately successful are of the highest quality and deemed by a panel of their peers as most able to advance Australia's economic, health, medical and/or social benefit. Yet each grant carries with it a substantial financial burden in indirect costs that represents an enormous opportunity cost for the very universities who produce the bulk of Australia's top tier research.

The Go8:

- Agrees that Australia must improve its ability to leverage better outcomes from our strong research performance. This will require ensuring that effective and nuanced solutions are put in place, including:
 - Incentives provided to universities be part of a holistic suite of incentives aimed at all sectors that stand to benefit from increased university/industry collaborations and knowledge transfer, including SMEs (see the Go8 submission to *Re:Think* for details);²
 - Strategies to ensure that the industry sector, especially SMEs, are aware of the potential benefits of engaging in discovery and innovation and are educated as to the opportunities that exist for increasing linkages with universities;
- Recommends that current approaches to research funding be better aligned to the promotion of research excellence.
- Recommends the Review of Research Policy and Funding Arrangements Working Group consult with the Single Higher Education Research Data Collection Working Group to determine the best measure of research output for use in the RBG formula;
- Advocates increasing funding support to existing programs that are designed to encourage collaborative activities between universities and other end users, such as CRCs and ARC Linkage Grants, while maintaining the integrity of other types of funding programmes;
- Urges that any metrics used to encourage or measure impact and engagement must be transparent, robust and fit for purpose, and encompass a holistic assessment, including economic, societal, environmental and other benefits of research;
- The Go8 encourages the Review Panel to consider the learnings from the UK REF (2014) and how they might be applied to the Australian system.

² <https://go8.edu.au/publication/group-eight-submission-rethink-tax-discussion-paper>



Overview of Current Policy and Funding Framework for University Research

As noted in the *Issues Paper*, Australia's research industry is 'highly productive, internationally connected and globally recognised for quality research',³ with Go8 universities representing a substantial portion of that research effort. This means that Australia should be well positioned to compete in a knowledge-based, global 21st century economy. Yet our national record on innovation and knowledge transfer suggests we are not sufficiently capitalising on our potential in this area.

The Go8 therefore agrees that Australia must improve its ability to leverage better outcomes from our strong research performance. However, it is also important to acknowledge that knowledge transfer and commercialisation activities occur via a network of interactions, and care must be taken in determining the mechanisms by which these will be prioritised.

Australia's poor rate of university-business collaboration is a long-standing issue, stretching back to the 2000s.⁴ Similarly, our performance in innovation over this time has been less than optimal. According to the Global Innovation Index, Australia commenced at a global ranking of 17 when the first edition was released in 2007, and was still ranked 17 in 2014, dropping during the intervening period to a position as low as 23.⁵ It is interesting to note that this occurred against a context of increasing university effort in applied research, rising from 30% in 1992 to 45% by 2012.⁶ This suggests that simple measures such as increasing the amount of commercially-focused research is unlikely to prove effective. Rather, substantial increases in commercialisation and knowledge transfer activities will require a nuanced and considered approach, targeted across all sectors of research and industry, with realistic timeframes and milestones.

For example, as noted in the Go8 submission to *Re:Think: the Tax Discussion* paper, successful collaboration requires strong incentives aimed at all involved parties. The Go8 therefore recommends that incentives provided to universities be part of a holistic suite of incentives aimed at all sectors that stand to benefit from increased university/industry collaborations and knowledge transfer, including SMEs. Our submission to *Re:Think* provides a number of practical suggestions as to how this could be achieved.⁷

There is growing recognition within the higher education and industry sectors of the need to ensure that Australia invests in a balanced research profile, providing both problem-focused efforts aimed at addressing issues faced by industry and society, as well as curiosity-driven, 'blue sky' work to ensure a pipeline of discoveries to fuel future innovations. Studies have shown, for example, that 73% of the papers cited by industry patents in the USA came from public science, authored at academic, governmental and other institutions, with only 27% coming from industrial scientists.⁸

³ *Review of Research Policy and Funding Arrangements for Higher Education Discussion Paper*, 2015pp.1-2

⁴ *Review Discussion Paper*, 2015, p.2

⁵ <https://www.globalinnovationindex.org/content.aspx?page=GII-Home> ; see also *Review Discussion Paper*, p.3

⁶ Australian Bureau of Statistics, Research and Experimental Development, Higher Education Organisations, Australia, 1992-2012, www.abs.gov.au.

⁷ <https://go8.edu.au/publication/group-eight-submission-rethink-tax-discussion-paper>

⁸ Narin, F., Hamilton, K.S., and Olivastro, D., (1997), 'The Increasing Linkage Between U.S. Technology and Public Science', *Research Policy*, 26(3): 317-330



High quality blue sky research, and the new knowledge that it brings, will also advantage Australia in a world where the big challenges and problems are increasingly global – energy, food supplies, water purity and management, and so on. Discoveries made in Australia not only increase the reputation of our research industry, but provide the seeds of future exports not yet able to be foreseen.

However, urgent and specific problems must also be addressed, and Australia must also ensure that barriers to researchers working to improve productivity and innovation in industry are minimised.

The best way forward is therefore to ensure that researchers are enabled to focus at all points of this research continuum, and that industry is best positioned to work with these researchers to gain maximum benefit from their discoveries.

It is worth considering learnings from overseas. The UK has consistently performed better than Australia in measures of business to university collaboration and innovation.⁹

While there are likely to be a number of factors underpinning this success, such as recognition of research engagement in their funding system and the existence of ‘third stream’ funding,¹⁰ it is also worth noting the findings of the 2003 Lambert Review, commissioned by the British Government to explore collaborative partnerships between universities and business.¹¹

This review recognised that university/business linkages are part of a system, and that strengthening that system requires strategies aimed at each of the key stakeholders: at universities, to encourage better identification of areas of competitive strength in research; at government, to do more to support business/university collaboration; and at businesses, to learn how to exploit the innovations being developed in the research sector. It also recognised that one of the main challenges was not so much in increasing the flow of commercial ideas from universities, but in raising the overall level of demand by business for research.¹²

The Go8 therefore recommends that the *Review Panel* consider strategies to ensure that the industry sector, especially SMEs, are aware of the potential benefits of engaging in discovery and innovation and are educated as to the opportunities that exist for increasing linkages with universities.

Research Block Grants

The Go8 does not believe that current levels of public research funding are adequate, especially given the increasing importance of research and knowledge transfer to social and economic wellbeing. However, we recognise that current fiscal constraints mean that public investment of money must be made according to conditions that maximise potential return on investment. This makes the *Review*

⁹ See the Global Innovation Index (<https://www.globalinnovationindex.org/content.aspx?page=GII-Home>) and OECD Science, Technology and Industry Scoreboard reports, www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-industry-scoreboard-2013_sti_scoreboard-2013-en

¹⁰ PACEC and the Centre for Business Research, University of Cambridge, 2009, *Evaluation of the effectiveness and role of HEFCE/OSI Third Stream Funding*, <http://webarchive.nationalarchives.gov.uk/20100202100434/http://www.hefce.ac.uk/pubs/year/2009/200915/>

¹¹ http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/d/lambert_review_final_450.pdf

¹² Lambert, 2003, pp.3,4



an important opportunity to evaluate current approaches to research and teaching activities to ensure the best use of public funds.

The most critical factor in ensuring that Australia realises its full research potential is excellence. The higher the quality of the research we produce, the better positioned we are to support industry, both here and overseas; drive discovery and innovation; support the reputation of Brand Australia and thus our hugely successful education export industry, currently valued at \$18 billion;¹³ and develop the high level expertise that will increasingly become the price of participation in the technology-driven, global knowledge economy. It is also true that industry partners looking to engage in R&D collaborations will seek to do so with those institutions that produce the highest quality research in the most relevant area. Therefore, the best strategy Australia could take to secure its future is to ensure that its research efforts are of the highest quality.

The current approach is causing significant and unsustainable strains on the system. One of the biggest issues facing the sector at the moment is the lack of support for indirect costs of research. The rigorous selective processes employed by funding bodies such as the ARC and NHMRC mean that the projects that are ultimately successful are of the highest quality and deemed by a panel of their peers as most able to advance Australia's economic, health, medical and/or social benefit. Yet each grant carries with it a substantial financial burden that represents an enormous opportunity cost for the very universities who produce the bulk of Australia's top tier research.

The amount of cross-subsidisation of research across the sector can be estimated by comparing research income (using HERDC and RBGs) with estimates of research spending (as reported by the Australian Bureau of Statistics). The results are shown in Figure 1 below.¹⁴ It suggests:

- The burden of cross-subsidisation of research as a percentage of research income has been steadily increasing across the sector since at least 2006;
- The funding gap is highest at Go8 universities, due to our record in winning competitive grants;
- However, it is a growing problem at non-Go8 institutions as well.

Go8 universities' disproportionate rate of success in winning competitive grants attests to the quality of our research, but also means we are disproportionately burdened with the unsupported costs of delivering that research. This means that much needed funds that could be used for other purposes, such as infrastructure, enhancing the student experience, providing scholarships or study support, or further world class research are having to be diverted to support the hidden costs of Australia's research effort. If the government is serious about promoting research and innovation as the new drivers of the Australian economy both now and into the future, this issue can no longer be ignored.

¹³ <https://ministers.education.gov.au/pyne/education-exports-worth-181-billion>

¹⁴ ABS, Research & Experimental Development, Higher Education Organisations (HERD); Department of Education and Training, Higher Education Research Data Collection (HERDC), and Research Block Grants, www.education.gov.au. Note that all of the figures are expressed in nominal terms, so increases include the effects of inflation.

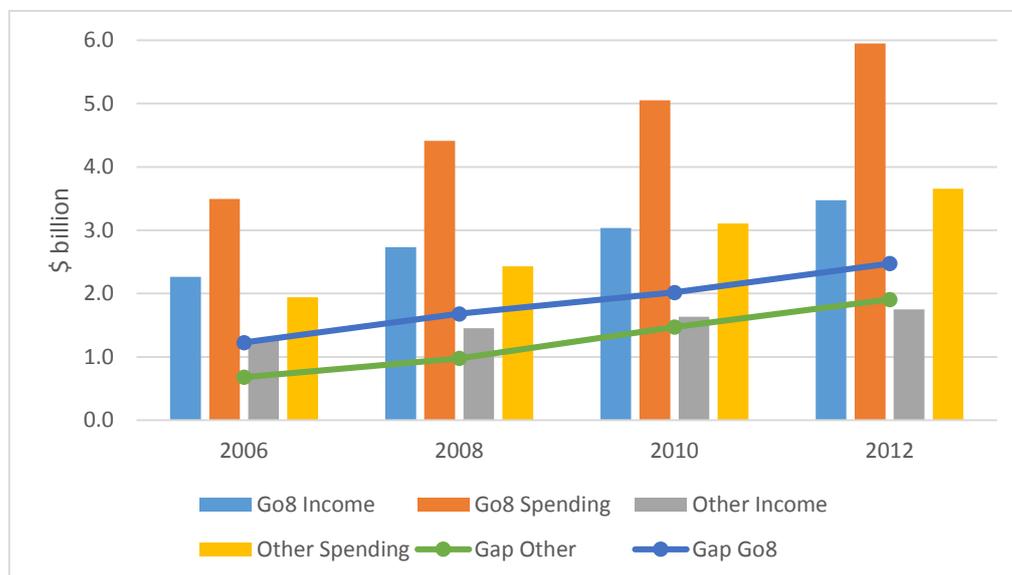


Figure 1: Estimates of Research Income and Research Spending, 2006-2012, Go8 Compared to Non-Go8 Universities. Source: ABS; HERDC and Research Block Grant data collections; additional figures supplied by individual Go8 institutions.

In our submission to the *Review of the Research Training System*, the Go8 advocated for the use of ERA metrics to inform the allocation of research training funds. The Go8 also notes that the current approach to HERDC is at odds with the Government's promotion of quality research within the Australian Higher Education sector. The attributes of high impact research include the production of research outputs that are:

- authored by researchers from multiple institutions;
- international in terms of author affiliation; and
- published in high impact journals.

HERDC provides a perverse incentive that rewards quantity over quality. The use of weighted authorship means that collaboration is penalised rather than encouraged. Further, the source of publication or the performance of a publication in terms of citation metrics has no bearing on its value in HERDC.

To maximise the benefits of government funded research, all drivers for future funding should be towards encouraging the production of the highest quality research possible. As a result, the Go8 recommends that apportioned authorship is no longer used as the measure for publications in HERDC.

Further, we recommend the Review of Research Policy and Funding Arrangements Working Group consult with the Single Higher Education Research Data Collection Working Group to determine the best measure of research output for use in the RBG formula.

Competitive Grant Programmes

The ARC and NHMRC fund a range of different types of research, from basic, blue sky investigations to more applied projects. Some funding programs are specifically aimed at encouraging collaborative activities between universities and other end users.



ARC Linkage Grants are designed to support research projects which are “collaborative between higher education researchers and other parts of the national innovation system”.¹⁵ The competitive nature of the grants helps to ensure that successful applications are of high quality, however recent changes to fewer rounds with more restrictions could act as a significant disincentive to industry to engage.

The ARC Centre of Excellence programme facilitates cooperation between entities such as universities, publically funded research organisations, governments and businesses to create innovative and transformative research collaborations.¹⁶ This has the potential to create long term relationships with the capacity to nurture the findings from basic research to development and translation into meaningful outcomes for industry. For example, the Centre of Excellence for Quantum Computation and Communication Technology (CQCT) represents a collaboration between Australian universities, including five Go8 institutions,¹⁷ a number of international universities (including the University of Oxford and the University of Tokyo), research organisations (e.g., the Defence Science and Technology Organisation) and industry partners such as Toshiba Research Europe and IBM Research.¹⁸ This is helping to place Australian research at the centre of developments into quantum information technology, potentially leading to breakthroughs such as data encryption that is not just difficult to break, but “inherently unbreakable”.¹⁹

The Go8 therefore advocates increasing funding support to these types of programmes, while maintaining the integrity of other funding programmes. It is essential to Australia’s future to ensure that the ARC and NHMRC are sufficiently funded to maintain success rates, grant sizes and duration of grants that are comparable with those in leading nations and that investment per researcher converges with that in other advanced nations. Otherwise, we risk allowing Australia to become increasingly irrelevant and ill-equipped to make use of advancements and innovations developed overseas.

Performance of the Research System

The Go8 submission to *Re:think* provided a number of practical suggestions for increasing linkages between universities and industry. As noted, a full copy of the report is available on the Go8 website, but possible ways of ensuring there are sufficient incentives in place to encourage all sectors of industry, regardless of size, to engage in Research and Development (R&D) activities could include:

- Differential rates of incentive, with higher tax breaks for businesses that engage with public research organisations;
- Incentives for medium sized companies to receive higher levels of tax concessions for investments that make use of university Intellectual Property (IP); or

¹⁵ <http://www.arc.gov.au/linkage-projects>

¹⁶ <http://www.arc.gov.au/arc-centres-excellence>

¹⁷ The University of New South Wales (Administering Organisation), The University of Melbourne, The University of Queensland, The Australian National University and The University of Sydney.

¹⁸ <http://www.arc.gov.au/arc-centre-excellence-quantum-computation-and-communication-technology>

¹⁹ <https://theconversation.com/australia-could-become-a-leader-in-cybersecurity-research-43716>

- Schemes to encourage collaborations between small businesses and research students or early career researchers to assist with a specific aspect of the business or business process, and to encourage consideration of career paths outside academia.

In order to be truly competitive the Australian research sector needs to be able to produce:

- A per capita output of high quality basic research that sits in the top quintile of advanced economies;
- Research activity that leads to positive economic and wider societal impacts through translational activity in partnership with potential end-users of research. We already have programmes that have done this successfully, such as ARC Linkage scheme and the CRC scheme, however both have been reduced in scope since their original inception, to our national detriment; and
- Graduates at both undergraduate and postgraduate level who are enthused by the opportunity to become innovators. As Australia's research intensive institutions the Go8 believe in the importance of research skills as tools to equip our graduates to fulfil this role in the Australian economy.

However, this cannot occur without commensurate effort and/or recognition by Australian industry that innovation is important in both hiring and investment principles.

Impact and Engagement

As noted throughout this paper, high quality research, and the discoveries that it brings, has a significant and lasting impact on national prosperity.

Access Economics has estimated that \$1 invested in Australian health research provides a return of \$2.17 in benefits.²⁰ Similarly, the Knowledge Transfer Partnerships (KTP) programme in the UK, which partners businesses with an academic institution, has shown an estimated return on investment of £4.70-5.20 (\$8.71-9.63) of net value for every £1 of public investment.²¹ The Productivity Commission noted in 2007 that basic research “plays the most crucial in supporting successful innovation over the medium to longer term”.²²

However, the relationship between research and impact/benefit is rarely simple or linear. Impact is a complex and multi-faceted phenomenon. It can be unpredictable, occur in a different field of research to the one in which the research was conducted, and happen many years after the original research was conducted. Professor Stephen Simpson's breakthrough work on the role of protein intake in human obesity, for example, had its origins in investigations into the reasons why locusts swarm.²³ The Lambert Review found that the most effective forms of knowledge transfer involve human interaction, which universities drive through a range of activities such as student placements, industry

²⁰ <http://www.researchaustralia.org/documents/item/125>

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<http://www.acola.org.au/PDF/SAF04Reports/SAF04%20Role%20of%20SRT%20in%20lifting%20Aus%20Productivity%20FINAL%20REPORT.pdf> p.79

²² Productivity Commission Research Report, *Public Support for Science and Innovation*, 2007, p.7,

http://www.pc.gov.au/_data/assets/pdf_file/0016/37123/science.pdf

²³ https://go8.edu.au/sites/default/files/docs/publications/the_importance_of_basic_research-final_0.pdf

internships, and research contracts and consultancies. Such activities would need to be captured if engagement was to be measured effectively.²⁴

Care also needs to be taken to ensure that ‘impact’ and ‘engagement’ are not defined solely in relation to commercial or industrial benefits, which would devalue the broad scope and variety of ways that research can contribute to Australia’s cultural, social and economic wellbeing. As noted by the Department of Defence in the U.S., even the most advanced cyber-security software systems can be easily bypassed with a knowledge of common human behaviours.²⁵

Any metrics used to encourage or measure impact and engagement must therefore be transparent, robust and fit for purpose, and encompass a holistic assessment, including economic, societal and other benefits of research.

The UK has attempted to address this issue through the Research Excellence Framework (REF) exercise. The 2014 round incorporated assessment of impact for the first time, using a combination of case studies and templates focused on the wider translation strategies which were then evaluated by expert panels. The case study approach allowed sufficient flexibility to capture some of the nuances of research impact, as mentioned above. Indeed, a report on the process by Kings College London noted that “[o]ne of the most striking observations from the analysis of the REF case studies was the diverse range of contributions that UK HEIs have made to society.”²⁶

A review of the process by the RAND Corporation confirmed that, as ‘the first attempt at assessing impact on a large scale, it was seen to be successful’.²⁷ Questions were raised over the cost of such an exercise,²⁸ especially given the finding that universities that scored well on research outputs also tended to score well on impact²⁹ indicating that excellent research underpins impact. This raises the potential for exercises such as ERA to be used as an impact proxy measure, although caution must be exercised as while excellent research *underpins* most impact it is not always a *predictor* of impact.

Other findings suggested that the gains from the UK REF (2014) may have extended beyond the assessment itself, i.e.:³⁰

- Academics and institutions reported a number of benefits of engagement with the impact component of REF 2014, such as developing the ability to identify and understand impact, and the stimulation of broader strategic thinking about impact;
- Complying with the impact component of the REF imposed a burden on resources and time for individuals and for the sector as whole. Academics perceived the process to be overly burdensome to research users who were involved to provide evidence, but this was not the experience of research users.

²⁴ Lambert Review, 2003, p.4

²⁵ <http://www.scmagazine.com/militarys-ban-of-usb-thumb-drives-highlights-security-risks/article/121326/>

²⁶ Kings College London, March 2015, *The Nature, Scale and Beneficiaries of Research Impact: AN Initial Analysis of Research Excellence Framework (REF) 2014 Impact Case Studies*, https://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/Analysis_of_REF_impact.pdf, p.6

²⁷ RAND report, p.xii,

http://www.rand.org/content/dam/rand/pubs/research_reports/RR1000/RR1032/RAND_RR1032.pdf

²⁸ <https://www.timeshighereducation.co.uk/blog/world-university-rankings-blog-value-impact-assessment>

²⁹ <https://www.timeshighereducation.co.uk/features/the-impact-of-impact/2018540.article?nopaging=1>

³⁰ http://www.rand.org/content/dam/rand/pubs/research_reports/RR1000/RR1032/RAND_RR1032.pdf; p.53,

- A cultural change appears to be taking place whereby institutions and individual academics are adopting a new focus on the current and potential impacts of their research. Alongside a wider impact agenda, UK REF (2014) has contributed to this shift.

The UK exercise has led to the recognition that research impact is likely to remain a part of the UK research landscape.³¹ And the RAND finding that universities that scored well on research outputs also tended to score well on impact,³² suggests that ultimately the best research is focused on quality – good impact will come from high quality research.

This makes it even more imperative that Australia focus its scarce public research funding into areas of demonstrated excellence.

Research Training and Employment

There are a number of costs involved in effective HDR training. For example:

- *Research Training*: the funding needed to cover the costs of a candidate’s research training curriculum, which includes the costs of: research supervision; the teaching of structured learning programs—i.e. required coursework elements; conference participation; cross-disciplinary, cross-institutional and/or cross-sectoral engagement; and the infrastructure associated with each.
- *Research Project*: Funding necessary to cover the costs of the research undertaken by a candidate during the course of their Doctoral education program.
- *Stipend*: Funding to support the living costs of candidates during their Doctoral program.

While attempts to define the cost of research training have been somewhat elusive, it is reasonably clear that the current RTS does not provide adequate levels of funding for the numbers of students it supports.³³ Given that the RTS budget line has been flagged for a 10% decrease in 2016, this situation can only get worse.

In this context, it is worth revising the use of RTS funds to ensure that scarce commonwealth funding is directed into programmes or environments that have demonstrated a focus on quality and the likelihood of a strong return on investment. As noted above, limiting the provision of RTS places institutions and disciplines demonstrating a minimum ERA rating of 3 at the 2 digit Field of Research (FoR) level would act as a quality assurance mechanism consistent with the *Final Proposed Higher Education Threshold Standards*.

It is also worth exploring best practice overseas models of provision. In the UK, many doctoral students are now enrolled through a Centre for Doctoral Training (CDT) or Industrial Doctorate Centre (IDC). Students enrolled through these centres are provided with technical and transferrable skills training, and provide opportunities to gain industry experience. All of the centres engage with industry, but students enrolled through IDCs spend around 75% of their time working directly with a company.³⁴ The Centres are funded by government, as allocated through the research councils, with an industry

³¹ <http://www.researchmedia.com/blog/the-impact-conundrum/>

³² <https://www.timeshighereducation.co.uk/features/the-impact-of-impact/2018540.article?nopaging=1>

³³ *Examining the Full Cost of Research Training*, Deloitte Access Economics, July 2011

³⁴ <https://www.epsrc.ac.uk/skills/students/centres/pre2013/idd/>



contribution. In 2009, for example, the Engineering and Physical Sciences Research Council (EPSRC) allocated £250m to develop 44 new centres focused on training scientists and engineers:³⁵

Each centre will have a particular research bias: industrial, problem-based, or what Reid calls "blue-skies thinking", with skills training tailored accordingly. In the industrial centres, students will spend a year in industry. Those working on specific problems, such as how to improve healthcare, will receive training in understanding the broader impact of their research. "It's about creating really good scientists who are more engaged with society," says Reid. The aim of the blue-skies centres, meanwhile, is to work across disciplines to tackle potential issues in the future.³⁶

Allocating the Centres through research funding councils also helps ensure quality standards are maintained. The Economic and Social Research Council (ESRC), for example, requires minimum quality standards based on the Research Excellence Framework, such that more than half of the Units of Assessment involved must have been rated at 3* or 4* across output, environment and impact measures (with 4* the highest rating possible).³⁷

The Go8 encourages the Review Panel to consider the learnings from the UK REF (2014) and how they might be applied to the Australian system.

³⁵ <http://www.theguardian.com/education/2009/feb/03/doctoral-centres>

³⁶ <http://www.theguardian.com/education/2009/feb/03/doctoral-centres>

³⁷ <http://www.esrc.ac.uk/funding-and-guidance/postgraduates/dtc/dtc-policy/commissioning-doctoral-training.aspx>



Appendix A: Group of Eight Research Performance

The Go8 comprise Australia's most research-intensive institutions, representing a powerhouse of Australian university research. This is reflected in metrics such as:

- All Go8 universities are listed within the top 200 of the major international ranking systems (the Academic Ranking of World Universities; the Times Higher Education World University Rankings; and the QS World University Rankings), with the Australian National University ranking within the top 20 in the QS World University Rankings;³⁸
- Go8 universities consistently win the majority of Australian Competitive Grant funding, attracting an average of nearly three quarters (74%) of sector Category 1 research income over the last five years, despite representing only around 20% of eligible institutions;³⁹
- Go8 universities have won an average of 67% of Category 3 funding (Industry and Other Funding) over the same period;⁴⁰
- Go8 universities have also consistently attracted an average of nearly 70% of research income from all sources (as measured by HERDC) over the same period;⁴¹
- Go8 universities attract on average 64% of Research Block Grant funding;⁴²
- Go8 universities account for 54% of domestic HDR completions, 49% of international HDR completions and 52% of total HDR completions;⁴³ and
- Go8 universities submitted 169 research units for evaluation to ERA 2012, of which 80% (135) were rated as 4 (above world standard) or 5 (well above world standard).⁴⁴

³⁸ ARWU 2015 (<http://www.shanghairanking.com/World-University-Rankings-2015/Australia.html>); THES 2014-15 (<https://www.timeshighereducation.co.uk/world-university-rankings/2015/world-ranking#/search/Australia>); QS 2015-16 (<http://www.topuniversities.com/university-rankings/world-university-rankings/2015#sorting=rank+region=+country=+faculty=+stars=false+search=>)

³⁹ Go8 share of Category 1 research income, HERDC data collection, 2009-2013.

⁴⁰ Go8 share of Category 3 research income, HERDC data collection, 2009-2013.

⁴¹ Go8 share of Total research income (Category 1 - 4), HERDC data collection, 2009-2013 (average of 68% share).

⁴² Research Block Grant funding, 2010-2015

⁴³ Department of Education Statistics Collection, 2014 Award Course Completions

⁴⁴ Units of Evaluation (UoE), ERA 2012