

Minister's Approval for Industrial Transformation Training Centres for Funding Commencing in 2024 Schedule

Approved Organisation, Leader of Approved Research Program (Columns 1 and 2)	Approved Research Program (Column 3)	Estimated and Approved Expenditure (\$)					Indicative Funding (\$)		Total (\$) (Column 10)	Industrial Transformation Priorities (Column 11)	International Collaboration (Column 12)	Partner Organisation(s) (Column 13)
		2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	2028-29* (Column 9)					

New South Wales

The University of Sydney

IC240100009	ARC Training Centre for Future Leaders in Quantum Computing	493,568.00	987,725.00	988,314.00	988,314.00	992,734.50	498,577.50	4,949,233.00	Enabling capabilities	United States of America	DIRAQ PTY LTD, Q-CTRL PTY LTD, SILICON QUANTUM COMPUTING PTY LTD, INFLECTION, QUINTESSENCELABS PTY LTD, PSIQUANTUM, RIVERLANE LTD, DEFENCE SCIENCE AND TECHNOLOGY GROUP, COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION, PAWSEY SUPERCOMPUTING CENTRE (CSIRO), TRANSPORT FOR NSW, MAIN SEQUENCE VENTURES, BLACKBIRD VENTURES PTY LTD, ENGINEERS AUSTRALIA, CRUXES INNOVATION
Bartlett, Prof Stephen D	<p>The quantum computing industry is predicted to play a transformative role in Australia's future prosperity. The aim of this training centre is to identify and train the leaders of tomorrow's quantum workforce, providing students with capabilities spanning the full quantum computing 'stack' as well as agency over their high-tech careers. This program will reach across Australia's diverse population and increase access and opportunities for rural and regional communities and underrepresented groups. The expected outcomes are future leaders who will build and grow a quantum computing ecosystem. The benefit is an economic opportunity that is predicted to generate \$3.6 billion in revenue in Australia and create 12,700 jobs nationally by 2045.</p>										

National Interest Test Statement

Quantum computers will be able to solve problems that are impossible with today's computers, transforming key sectors including defence, transport, finance, and more. An emerging new Australian industry to deliver quantum computing represents a significant economic opportunity for the nation, but this industry must compete globally for talent capable of delivering on its potential. Our training centre will prepare the leaders of Australia's future quantum computing industry, and will equip this industry to harness the diverse range of talent and deliver these opportunities to all of Australian society. Research outcomes from the training centre will accelerate the commercialisation of quantum computing hardware and software by Australian companies. Our partners span the full range of research translation, from quantum computing researchers through to end-users and commercialisation partners, ensuring that fundamental discoveries can be rapidly taken up by industry and society to deliver world-leading change.

The University of Sydney	493,568.00	987,725.00	988,314.00	988,314.00	992,734.50	498,577.50	4,949,233.00
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Western Sydney University

IC240100020	Industrial Transformation Training Centre in digital platforms for Net-Zero Building Ecosystem Lifecycle (NOBEL)	500,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	500,000.00	5,000,000.00	Renewables and low emissions technologies, Value-add in	England	BIRMINGHAM CITY UNIVERSITY, DE MONTFORT UNIVERSITY,
Tam, Prof Vivian W	<p>This Centre aims to train the next generation of</p>										

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(Columns 1 and 2)	(Column 3)											
	transdisciplinary leaders within the building construction sector. It will deliver the training and end-user research capability necessary to address the need to transform the sector into a net carbon-zero ecosystem. The target is a transition to digital product-based methods and product-oriented companies. The outcomes include adoption of platform-based methods for net-zero project delivery models. Benefits will include the integration of efficient digital and manufacturing techniques, low-waste processes and ecofriendly materials into building design, construction, and maintenance stages. This will achieve advanced sustainability and productivity of our building construction sector.									resources, Enabling capabilities		LEICESTER, PT BLINK TECHNOLOGY PTY LIMITED, HI-TECH MODULAR HOMES, MODERN GLAZING GROUP PTY LTD, AYR INTERNATIONAL PTY LTD, ETEX AUSTRALIA PTY LTD, SEISMIC GROUP, BUILDING INTELLIGENTLY & UMBS JIE JIAN PTY LTD, URBANSPEC ENGINEERING PTY LTD, ECOQUARRY PTY LTD, SHANGHAI HORSE CONSTRUCTION, EVISSA PTY LTD, HOLCIM (AUSTRALIA) PTY LTD, LS-ECO CONSULTING PTY LTD
	National Interest Test Statement											
	To meet Australia's climate change targets, all new buildings must achieve net zero by 2030, and all buildings must operate at net zero by 2050. The Centre will significantly contribute to these targets by advocating for digital platforms that embrace circular construction processes, climate-responsive technologies, and enhanced productivity in building construction. This will be a vital contribution considering Australia is projected to require over 5 million homes by 2050, with approximately 39% of our annual carbon emissions stemming from buildings. The Centre will offer transdisciplinary training programs aimed at catalysing a fundamental industry transformation into ecosystems, where buildings are no longer resource-intensive structures but rather eco-efficient and net-zero entities contributing to environmental sustainability. While achieving net-zero emissions becomes a point of competitive difference, the knowledge cultivated in this Centre is essential to drive innovation and commercialisation; improve productivity; and contribute to our overall GDP by bolstering the international competitiveness of Australia's building products. The benefits of this initiative will also impact the economy by enhancing productivity and competitiveness and reducing waste; the environment through diminished carbon footprints and energy use; and society more generally by promoting technologies for production of high-quality low-maintenance buildings.											
IC240100041 Ghannoum, Prof Oula	ARC Training Centre for Smart and Sustainable Horticulture The ARC Training Centre for Smart and Sustainable Horticulture will train the next generation of professionals who will drive the expansion, profitability, and sustainability of Australia's protected horticulture to mitigate the impacts of food insecurity and climate change. The Centre will empower the Protected Cropping industry to respond to four key challenges: narrow variety base, shortage of skilled labour, establishment and energy costs, and slow technology adoption. Centre HDRs and ECRs will develop the required capabilities to accelerate the automation and efficiency of the medium and high-tech Protected Cropping sector, enabling long-term industry growth whilst integrating socio-economic issues and reducing environmental impact.	500,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	500,000.00	5,000,000.00	Renewables and low emissions technologies, Value-add in the agriculture, forestry and fisheries sectors, Enabling capabilities	India	KERALA AGRICULTURAL UNIVERSITY, VERTICAL PATCH, XAG AUSTRALIA, ORLAR INTERNATIONAL PTY LTD, SYNGENTA AUSTRALIA PTY LTD, BIZDATA PTY LTD, INTERSECT AUSTRALIA LIMITED, CICADA INNOVATIONS PTY LTD	

* Note - Indicative funding for approved projects will be made available through a funding variation under section 54 of the ARC Act

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National Interest Test Statement

Protected horticulture or cropping (PC), involves the production under shelter of valuable horticultural crops such as leafy greens, tomatoes, cucumber, capsicum and berries. Protected cropping enables producers to optimize growth conditions, to monitor, control or avoid environmental stresses such as drought and flooding, and to control diseases where the use of pesticides is undesirable, impractical or risks ruining the industry's clean reputation. PC contributed approximately \$2 billion to Australia's \$16 billion annual horticultural industry in 2021-2022. The central aim of the proposed Training Centre for Smart and Sustainable Horticulture is to underpin the inevitable expansion of the protected cropping sector in the face of changing and more erratic climatic conditions, as well as the increasing global and urban population. It will provide high level training of growers and both current and future industry leaders, and simultaneously integrate emerging technologies to increase crop yields and quality. Research training will be focused on collaborations between the private and public sectors. In particular, the Training Centre will leverage the \$60 million national investment in high-tech plant phenotyping facilities which will facilitate the Centre's industry-driven research. The Centre will also develop training programs that address decarbonization and circular agronomic strategies to lower the industry's carbon footprint, energy bill and water consumption.

Western Sydney University	1,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	1,000,000.00	10,000,000.00
New South Wales	1,493,568.00	2,987,725.00	2,988,314.00	2,988,314.00	2,992,734.50	1,498,577.50	14,949,233.00

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South Australia

The University of Adelaide

IC240100012	ARC Training Centre in Current and Emergent Quantum Technologies (CE-QuTech)	460,605.00	960,350.50	999,622.50	996,375.00	974,288.50	477,790.50	4,869,032.00	Defence capability, Enabling capabilities	Sweden, France, United States of America	QUANTX LABS PTY LTD, MOG LABORATORIES PTY LTD, COLDQUANTA AUSTRALIA PTY LTD, QUANDELA , ANALOG QUANTUM CIRCUITS PTY LTD, SINGLE QUANTUM
Solomon, Prof Glenn	This Training Centre aims to provide technical and leadership skills to our next generation of quantum technology leaders, advancing Australia's presence in current quantum technologies, and innovating and implementing new ones. In close collaboration with universities and industry members, and with strategic guidance, the Centre will address the Defence and Enabling Technologies needed in Australia as these technologies grow world-wide at an accelerated pace. The outcomes of training future quantum technology leaders in areas touching engineering, physics and biology are the broad shaping of the high-technology landscape in Australia as the quantum economy expands, and provide protection for our economic and political future.										

National Interest Test Statement

Quantum technologies are ground-breaking due to their harnessing of quantum mechanics, enabling unprecedented computational power, ultra-secure communication, and transformative advancements in sensing, materials, and industry applications. They are an area of national research excellence in Australia and of critical strategic importance for key areas such as defence, commerce, health, and the environment. There is an immediate need within Australian industries for highly skilled staff in quantum technologies. The Training Centre for Current and Emerging Quantum Technologies will be focused on developing novel quantum technologies by combining semiconductors, photonics, and quantum materials to drive the development of quantum computing, quantum communications, and quantum sensing. The Centre will train future leaders in partnership with key industry players. Working together with our 6 industry partners, we will solve their biggest quantum challenges. These partners will commercialise the Centre's research outcomes and bring new products to market that will benefit all Australians and position Australia "to generate over \$4 billion and 16,000 jobs by 2040" from quantum technologies. Centre outcomes will also be disseminated through public engagement and outreach via public and high-school lectures, explaining the ideas and benefits of quantum technologies and the nature of quantum light.

The University of Adelaide	460,605.00	960,350.50	999,622.50	996,375.00	974,288.50	477,790.50	4,869,032.00
South Australia	460,605.00	960,350.50	999,622.50	996,375.00	974,288.50	477,790.50	4,869,032.00

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Victoria

Deakin University

IC240100027	ARC Training Centre for Resource Efficient Alloys in a Circular Economy	499,506.50	998,758.50	997,679.50	996,964.00	996,883.50	498,347.00	4,988,139.00	Renewables and low emissions technologies, Enabling capabilities, Value-add in resources	England	BRADKEN PTY LIMITED, CALLIDUS PROCESS SOLUTIONS PTY LTD, FORMFLOW PTY LTD, DOOGOOD AUSTRALIA PTY LTD, HYSATA PTY LTD, BISALLOY STEELS PTY. LTD.
Barnett, Prof Matthew R	<p>To reduce carbon emissions in the alloy sector, we need both low energy solutions and increased recycling. This Centre aims to create leaders in alloy innovation for a more circular economy. Leadership will be developed on-the-job via four strategic objectives: USE-LESS - develop alloys and structures that use less mass for the task; DEMAND-LESS - innovate in alloy and process design to create lower energy pathways; LAST-LONGER - create alloying solutions that facilitate component longevity, and RE-USE - design new alloys, processes and components that facilitate recycling and re-use. Outcomes will include new alloys, products and processes. Benefits will include reduced emissions and increased competitiveness of Australian enterprises.</p> <p>National Interest Test Statement</p> <p>The proposed Training Centre addresses two of Australia's key targets: 1) to achieve net-zero emissions by 2050 and 2) to meet or beat 80% recovery rate of our waste by 2030. We will achieve this by pioneering innovation in the alloy manufacturing sector, by i) developing alloys and structures that use less mass, thereby reducing demands on resources ii) innovating new alloy and process designs to create lower energy pathways to achieving metal products iii) creating alloying solutions that facilitate component longevity to save on the emissions incurred by replacement, and iv) designing new alloys, processes and components that facilitate recycling and re-use. Outcomes will include immediate research translation into new alloys, products, and processes. Direct benefits will include reduced energy demand and emissions and lower manufacturing cost for more competitive local enterprises. It will also support sovereign supply chains in alloy production and recycling and allow new opportunities for recovery of value from alloy waste. Centre trainees will be skilled in the application of circular economy principles into manufacturing. Developed Artificial Intelligence based software for fast alloy and process design and energy and emissions auditing will be made open access for maximum impact. Research outcomes will be broadcast broadly through the media, at targeted symposia, and our networks of key industry bodies including in the space, recycling, and circular economy sectors.</p>										
	Deakin University	499,506.50	998,758.50	997,679.50	996,964.00	996,883.50	498,347.00	4,988,139.00			

RMIT University

IC240100010	ARC Training Centre in Electrifying Australia for a Net-zero Future	500,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	500,000.00	5,000,000.00	Renewables and low emissions technologies	Denmark, Japan, United States of America	DEPARTMENT OF ENERGY ENVIRONMENT AND CLIMATE ACTION, ENGINEERS AUSTRALIA, POWERCOR AUSTRALIA LTD, AUSNET ELECTRICITY SERVICES PTY LTD, ENERGY
Jalili, Prof Mahdi	<p>This Centre aims to bring together four leading universities and key industry stakeholders to advance the electrification of transport and homes. The energy and transport sectors contribute more than 75% of emissions and full electrification combined with increased electricity generation from renewables is key to decarbonise these sectors. The expected outcomes of the Centre include highly trained industry-ready researchers as well as advanced technologies to facilitate the transition to low-carbon energy and transport by empowering consumers and preparing the distribution grid to support large-scale electrification. This will</p>										

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provide significant benefits in the transition to a net-zero future and meeting our emission reduction targets.

QUEENSLAND LIMITED, K-BIK POWER PTY LTD, ADL BUILDING SERVICES PTY. LTD., BEYONDEV PTY LTD, RELECTRIFY PTY LTD, SPENDWATT PTY LTD, NET ZERO STACK PTY LTD

National Interest Test Statement

Large-scale electrification of energy and transport sectors would result in significant load consequences to the electricity grid. It is estimated that Australia needs to double its electricity generation by 2050 – all from renewables – to meet the zero-emission targets. Together with generation from renewables, large-scale electrification of transport, homes and businesses play key roles in reducing our carbon footprint. The existing distribution grids are not yet ready to accommodate mass electrification and no system of coordinated charging currently exists. This presents a significant obstacle in preparing grid infrastructure for wide-spread uptake of electric vehicles. In collaboration with industry partners, this Centre will train much needed, highly skilled and industry-ready research leaders to support future research and development activities in electrification. The Centre will develop data driven and machine learning based solutions and technologies to enable efficient grid planning and operation under mass electrification scenarios. The Centre will also develop mechanisms to increase consumer and end-user engagement in the “electrification movement”. Relationships with industry through previous and existing projects as well as co-design of projects with industry partners will support rapid industry adoption.

RMIT University	500,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	500,000.00	5,000,000.00
Victoria	999,506.50	1,998,758.50	1,997,679.50	1,996,964.00	1,996,883.50	998,347.00	9,988,139.00
	2,953,679.50	5,946,834.00	5,985,616.00	5,981,653.00	5,963,906.50	2,974,715.00	29,806,404.00