Cooperative Research Australia

CRA's submission to the Strategic Examination of Research and Development discussion paper April 2025

Cooperative Research Australia acknowledges the traditional custodians of the land on which we operate, the Ngunnawal people. We also acknowledge the traditional custodians of the various lands across Australia upon which our members operate.

We pay our respects to Elders past, present and emerging and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to our lands and waters.

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Strengthening Australia's R&D System Through Industry-Led Collaboration and Translation

1. Executive Summary

Cooperative Research Australia (CRA) welcomes the opportunity to provide recommendations for consideration in the Australian Government's Strategic Examination of Research and Development.

CRA is the voice of industry-research collaboration in Australia. CRA advocates for the translation of research, maximising commercial, economic, social, and environmental outcomes for the benefit of all Australians. Our members are the lynchpin in the Australian innovation system and are focused on creating new products, services, industries, and value in our economy. CRA represents Cooperative Research Centres (CRCs) and the research and industry partners they bring together, their spinoff/successor entities, CRC–Project grant participants, 30 universities and research institutions, other industry-research boundary spanning entities, associated businesses, alumni and professionals.

Our submission focuses on strengthening industry-led R&D through the proven CRC model—with a particular emphasis on enhancing research translation, fostering enduring industry partnerships, and improving policy settings to scale commercialisation and long-term impact.

It draws from consultation with CRA members and stakeholders and the National Innovation Policy Forums – a CRA initiative since November 2022 that brings together government, business, research organisations and boundary spanning organisations such as CRCs to find agreement on policy interventions that will enhance Australia's innovation performance.

CRA general recommendations are:

1 Affirm R&D and Innovation as Core Economic Policy
In the face of rapid geostrategic and technological change, the Australian Government must explicitly recognise R&D and innovation as central pillars of national economic policy — essential for productivity, sovereign capability, resilience, and global competitiveness.

2. Design Policy Around Clear National Priorities and Guiding Principles
Design for impact by ensuring that all innovation and R&D programs are designed with consistent, principles-based frameworks tied to clear national missions (e.g. net zero, health, sovereign manufacturing). Embed these principles in program design, evaluation, and funding criteria.

3. Establish a National Innovation Coordination Mechanism
Harness the convening power of the Australian Government to create a central, cross-portfolio coordinating body or function to oversee the national innovation system. This should ensure alignment of programs, policy consistency across election cycles, and system-wide planning based on shared national priorities.

4. Scale and Sustain What Works Across Portfolios
   Ensure long-term support, coordination, and cross-portfolio adoption of proven models such as CRCs, Research and Development Corporations (RDCs), and Trailblazers. These models should be integrated into broader strategies across defence, environment, health, and advanced manufacturing.

5. Modernise Government Procurement to Drive Innovation
   Implement a national Small Business Innovation Research (SBIR)–style program at scale that enables government to act as a first customer for Australian innovation or revisit that models leveraging large government procurements to promote collaborative investment in Australian R&D and industry development activities such as the Partnerships for Development scheme and the Endorsed Supplier Arrangements. Procurement reform should support scale-up and commercialisation of emerging technologies aligned with public needs.

6. Foster a National Culture of Innovation and Entrepreneurship
   Embed entrepreneurship and innovation education at all levels. Actively celebrate success, reduce stigma of failure, and promote Australia's innovation story to inspire future talent and create cultural change.

7. Invest in Place-Based Innovation and Innovation Ecosystem Development
   Incentivise the development of place-based innovation ecosystems by investing in anchor institutions, local collaboration hubs, and precincts that link industry, research, and communities, leveraging existing models such as CRCs.

8. Reform the Research and Development Tax Incentive (RDTI)
   Revise the RDTI to ensure it delivers on its intended purpose. Consider targeted incentives for emerging technologies, translation activities, and industry–research collaboration.

9. Build Agility and Capacity for Fast-Failure and Iteration
   Policy must accommodate experimentation. Design programs with built-in flexibility, fast-fail mechanisms, and rapid feedback loops — particularly in early-stage R&D and commercialisation phases.

10. Commit to Long-Term, Whole-of-Government Tracking of Impact
    Implement a national system to track outcomes from R&D and innovation investments well beyond individual program timeframes by recognising that the Australian Government funding is often seeding greater capability that may take decades to fully realise. This should include economic, social, and environmental indicators — enabling strategic policy adjustments and accountability over the long term.

CRA Cooperative Research Centre (CRC) specific recommendations

1. Scale the CRC Model
   Restore the CRC Program as a program designed for impact to its long-run average in real terms by increasing annual funding to $250 million. This uplift would enable at least two

new CRCs and up to eight CRC-Ps each year, supporting unmet national priorities and allowing Australia to respond strategically to emerging industries and challenges. Separate out CRC-P funding to ensure clarity for participants.

2. Expand the CRC Model Across Government Portfolios
   Enable CRCs and CRC-like models to be adopted and funded across a broader range of government portfolios — including health, environment, agriculture, defence, and regional development. This cross-portfolio expansion would better align translational research with national missions and ensure CRCs – and their capability to build coalitions across business, research and civil society are embedded in the full spectrum of Australia's innovation agenda, as recommended by the Miles Review.

3. Improve Continuity, Flexibility and Transition Pathways for Successful CRCs
   Develop structured mechanisms to support CRCs transitioning into sustainable, post-grant entities — as demonstrated by the evolution of the Cancer Therapeutics CRC into Canthera Discovery. This could include bridge funding, transition planning to preserve national capability and maintain commercialisation pipelines, and flexibility in unfunded extensions to enable commercialisation.

4. Enable CRC Access to Cross-Program Funding
   Formally recognise CRCs as mission-driven innovation hubs and as such as eligible recipients and delivery mechanisms within broader national funding programs such as the National Reconstruction Fund, the Industry Growth Program, and Clean Energy Future initiatives. Harmonising eligibility and timelines across programs will unlock the full translational potential of CRC consortia.

5. Strengthen Long-Term Tracking of CRC Outcomes
   Establish long-term monitoring and evaluation processes to measure the economic, social, and environmental impact of CRCs and their spinoffs and/or legacy entities beyond the life of the initial funding.

6. Leverage CRCs to Address the "Missing Middle"
   Position the CRC Program as a direct tool for supporting scale-up of innovative, medium-sized Australian companies. Introduce incentives and fast-track mechanisms to ensure mid-tier businesses participation in CRCs and CRC-Ps, and integrate CRC outcomes with broader capability-building programs to help these firms grow and compete globally.

7. Promote CRCs as a Flagship of Australian Innovation Policy and Diplomacy
   Embed the CRC Program in Australia's international innovation and trade strategy. Support CRCs to export their models and technologies, engage in global partnerships, and showcase Australian translational science on the world stage — elevating the CRC brand as a symbol of collaborative, high-impact R&D in much the same way as the UK does with Catapults.

In Addition, the Cooperative Research Australia Rural, Regional and Remote Interest Group has developed a rural specific submission (attachment A) and makes the following recommendations, which form part of our Recommendations:

1. Establishing a National Regional Innovation Fund to build infrastructure and research networks.
2. Introducing a Regional Innovation Tax Incentive to stimulate private sector R&D outside metro areas.
3. Increased collaboration by CRCs with a regional focus to boost applied research in key industries.
4. Creating a Regional Innovation Venture Fund to commercialise regional R&D.
5. Supporting global R&D collaboration to connect regional innovations to international markets.

Cooperative Research Australia is committed to working collaboratively with the Australian Government to build an innovation strategy that ensures a productive and prosperous nation for all Australians. We are open to facilitating further consultation and/or clarification with our members on any of the recommendations, and with our unique access to the industry-research collaboration community, would be keen to work with government to develop and consult on detailed proposals or programs.

1.1. Impact Case Study: Cochlear and the CRC Program

Transforming Hearing Solutions Through Industry-Led Research

Cochlear Limited, a global leader in hearing implant technology, has long been at the forefront of industry-led research in Australia. As a key partner in the Cooperative Research Centres (CRC) Program, Cochlear leveraged cutting-edge research collaborations to drive innovation, improve hearing outcomes, and help build its global competitiveness. The company's involvement in the HEARing CRC and its two predecessor CRC's - the CRC for Cochlear Implant and Hearing Aid Innovation [1999-2007] and CRC for Cochlear Implant, Speech and Hearing Research [1992-1999] helped accelerate the development of new implant technologies, speech processing algorithms, and clinician training programs that have transformed the hearing industry worldwide and saw Australia claim a sizeable share of the market.

Economic & Industry Impact

The partnership between Cochlear and the HEARing CRC and its predecessors contributed significantly to Australia's advanced manufacturing sector. The CRCs played an important role in Cochlear's development. Cochlear has ultimately grown from a small subsidiary of Nucleus to a global powerhouse, generating billions in exports and reinforcing Australia's reputation for world-class medical technology. It is one of the most innovative companies in the world according to Forbes and a significant investor in homegrown R&D in Australia. The CRC model also facilitated industry-led R&D, driving faster commercialisation of research discoveries and ensuring that Australian innovation remained competitive on the global stage.

Social & Environmental Benefits

The impact of this industry-led CRC extended beyond commercial success, directly improving the lives of people with hearing loss. Cochlear's technology, enhanced by CRC research, has enabled hundreds of thousands of individuals worldwide to regain hearing, improving communication, education, and employment opportunities. Furthermore, advancements in battery efficiency and sustainable materials have contributed to more environmentally friendly medical devices.

Workforce & Industry Capacity Building

A key outcome of the HEARing CRC and its prececessors was the development of a highly skilled workforce, with numerous PhD students and postdoctoral researchers transitioning into industry roles at Cochlear and other hearing-related enterprises. Industry-led research projects enabled hands-on training for clinicians, engineers, and audiologists, ensuring that Cochlear and its partners remained at the cutting edge of hearing science. Cochlear has grown to be a global company headquartered in Australia, where the majority of its R&D still takes place.

Looking Ahead: Future Industry Impact

Cochlear's research teams collaborate extensively with top hearing professionals and have more than 100 active research partners in 20 different countries to continuously innovate and provide breakthroughs to those with hearing loss.

Cochlear remains a model for how the combination of conditions, including science, entrepreneurship, government support and industry leadership within CRCs can drive lasting economic and societal impact.

Key Industry Outcomes (Source: Cochlear 2024 Annual Report)

- $20+ billion in global exports since Cochlear's founding.
- 60% global market share
- 5000 employees across 50 countries
- 6 manufacturing locations including 3 in Australia
- AUD 270 m investment in R&D – 12% of sales revenue

"*Australia is very good at innovating. If you look at the quality of research and the volume of research that's done in Australia, we rank very highly in the world. Our challenge has always been, how do we use that research for really delivering gains and benefits to society? And there, I think companies are critically important, but there's also institutions like the CRCs, have been important in helping the commercialisation of research done in Australia*." Dig Howitt, CEO Cochlear 2021

2. The Case for Action

Australia's prosperity depends on its ability to generate, translate, and adopt new ideas. Yet there is a significant gap between Australia's world-class research sector and the translation of these discoveries into commercial products and industry-research collaboration.

This document outlines challenges in the current innovation landscape and offers a solution leveraging existing proven and scalable models based on data driven insights and consultation. It provides insight from CRA's extensive network of members and stakeholders, which includes universities, businesses and research organisations.

CRA's submission is grounded in robust data and stakeholder insights, drawing from:

- Economic impact assessments of the CRC program, quantifying their contributions to jobs, business growth, and industry transformation.
- Member and stakeholder feedback, reflecting on challenges, successes, and areas for policy improvement.
- Consultation with the Expert Panel, ensuring alignment with broader national R&D strategies.
- Stakeholder survey results, providing direct input from industry and research organisations on barriers to collaboration.
- Case studies, showcasing successful CRC partnerships that have driven commercialisation and societal benefits.
- Industry letters, demonstrating business demand for stronger, more coordinated R&D support structures.

Throughout this consultation process, it is clear that addressing Australia's R&D challenges requires a shift from fragmented, short-term approaches to strategic, mission-driven collaboration.

A principles-based approach is needed—one that enhances the flexibility and accessibility of collaborative R&D models like CRCs for their core purpose of solving industry problems, funds research translation, adoption and commercialisation at scale, and reforms incentives and support programs that ensure R&D intensive companies grow from small to large. This is key to enabling Australia to solve complex national challenges, build long-term capability, and grow a more diverse and resilient economy.

3. The Current State of Australia's R&D System: Challenges and Barriers

3.1 Declining Business Investment in R&D

Historical data shows a correlation between CRC funding and BERD. During the first decade of the 2000s, when the Cooperative Research Centres (CRC) program was strongly supported, BERD was at its peak. However, Australia's R&D intensity and Business expenditure on R&D (BERD) have consistently declined over the past years. This decline reflects structural gaps in the innovation system—especially around incentives, collaboration, and risk tolerance.

Part of the problem lies in the composition of Australia's industrial base, which leans more heavily toward project-based companies than product-based companies that develop proprietary technology or IP. The latter often see limited return on R&D investment unless they are directly supported through collaboration frameworks that reduce risk.

In addition, businesses report that existing incentive structures—including the R&D Tax Incentive—do not sufficiently encourage collaborative or experimental research. The complexity and administrative burden of accessing these incentives can be a deterrent, especially when weighed against the commercial urgency of project delivery.

Compounding the issue is the lack of strategic alignment between public investment in research and industry innovation priorities. While governments fund a vast array of research programs, these are often fragmented or insufficiently targeted to national missions that would give businesses confidence to invest alongside.

3.2 Weak Research-Industry Linkages

Despite Australia's world-class research institutions, its performance in industry–research collaboration remains low by international standards. Many businesses—particularly SMEs—lack the capacity to identify, absorb, or co-develop new knowledge, while universities face pressure to deliver research outputs rather than focus on translation. This disconnect limits the potential of public investment in research to deliver economic returns.

Through CRA's consultation and surveys, members repeatedly identified the need to simplify pathways to collaboration. Bureaucratic complexity and inflexibility, short funding cycles, and uncertainty around intellectual property (IP) arrangements were cited as persistent barriers. Importantly, a flexible approach to IP ownership was recognised as a practical tool to enable partnerships, but there remains a significant lack of training and understanding about how to implement such models in practice.

3.3 Fragmented and Uncoordinated Funding System

Australia's R&D funding landscape spans more than 150 programs spread across 14 different government portfolios. While this breadth reflects strong intent, its complexity creates

practical barriers—particularly for industry, who do not have the time or internal expertise to decipher eligibility or align their activities with disparate funding cycles.

Consultation with CRA members consistently reveals frustration with the lack of clarity and strategic direction in R&D funding, duplication and barriers to collaboration across funded entitles. Many organisations point to short-termism, reactive program design, and weak alignment with broader economic or societal missions. CRA consultations repeatedly point to the need for a more coherent and mission-driven funding architecture.

In addition, several members pinned the complexity and expensive application processes, delays in funding or inconsistent timing of grant rounds, as main reasons undermining long-term planning and discouraging private sector investment. To grow industry participation, government processes need to provide predictability of timing and processes.

Furthermore, discussions pointed to the need of a revision and greater transparency around R&D Tax Incentive (RDTI) settings and program goals to give businesses more confidence to invest.

Global partners and competitors set out clear national approaches to innovation. The USA recognises its system in the National System of Innovation NIS framework, EU has the European Innovation Agenda, the UK its Innovation Strategy. Germany has a well-defined Innovation System, Sweden has the Swedish National Innovation Model, Switzerland uses the Triple Helix Model of Innovation and has further developed an integrated framework for innovation, Canada has the Canada Innovation Corporation Blueprint, Israel uses the Helix model for innovation frameworks. Spain has a Science, technology, and Innovation strategy. Singapore has defined a National Innovation System and a RIE plan.

3.4 Limited Support for Experimental Development

As the discussion paper highlights, Australia performs well in basic and applied research but falls short when it comes to experimental development—the critical phase where discoveries are translated into real-world applications. Without sufficient investment in prototyping, testing, and refinement, promising research often stalls before it can be commercialised or adopted at scale, representing a missed economic opportunity.

CRA's consultation found this stage of the pipeline to be one of the most under-supported, particularly for SMEs and early-stage ventures. Many businesses lack the facilities, time, or risk tolerance required to undertake this type of work independently.

To overcome these barriers, CRA members and stakeholders highlighted the importance of building resilient innovation ecosystems by fostering innovation hubs around established industry-research entities such as CRCs.

Moreover, many called for new models to address the "valley of death" (the gap between proof-of-concept and commercialisation), recognising that without structured support, valuable research outcomes may never reach the market or broader society.

This requires policy settings that explicitly back experimental development—not just discovery. It means funding structures that allow for flexible, fast-failure environments; support for cross-disciplinary teams; and better incentives for public research institutions to participate in late-stage development.

4. The Role of CRCs in Solving Australia's R&D Challenges

4.1 CRCs: A Proven Model for Industry-Led Innovation

Data from independent impact assessments consistently show the economic return of CRCs through job creation, business growth, and new product development. Furthermore, beyond the numbers, CRCs offer a mechanism for building capability and culture around collaboration.

- Long-term, industry-led partnerships: CRCs typically run for 7-10 years, providing the time and certainty needed to tackle complex challenges. They are driven by industry-defined problems, ensuring relevance and early engagement from end-users.
- Focus on commercialisation and technology adoption: The program structure incentivises translational work, with industry partners actively shaping the development and implementation of solutions.
- Engagement of SMEs in R&D activities: CRCs provide a practical entry point for SMEs to participate in collaborative research by offering shared infrastructure, project coordination and access to research expertise.
- Training and workforce development: Thousands of researchers and students have been embedded in industry through CRCs, equipping them with real-world experience and enhancing Australia's R&D workforce.

Importantly, CRCs are inherently collaborative—not only across sectors, but across jurisdictions, disciplines, and scales of enterprise. This makes them uniquely suited to addressing national missions, from decarbonisation to regional development.

4.1.1 Case Study: Data to Decisions CRC spin-out companies go global as new wave of data scientist workforce created for Australia

D2D CRC (2014-19) brought together researchers and industry, with world class mathematicians, data scientists and artificial intelligence (AI) experts to work on big data solutions for national security.

Backed by the Australian Government and 14 industry partners including Unisys, BAE Systems, Pivotal, and SAS, the CRC hit its mark fast. By 2017 it had created AI and machine learning technology enabling analysts and intelligence teams to conduct highly targeted open-source investigations with amazing speed.

Data to Decisions CRC (D2D) spawned spin-off companies Fivecast and NQRY whose cutting-edge tools are now used by national security agencies and law enforcement around the world.

D2D CRC-developed software uses artificial intelligence to search masses of texts, images and videos on the internet to uncover red flags for extremism, organised crime and fraud – and more recently help with COVID-19 contact tracing.

Fivecast now has major contracts in Australia, UK and the US, including with the US Department of Defence.

D2D CRC's other spin-out company NQRY specialises in next generation investigative tools and effective case management solutions for law enforcement and public safety organisations.

During its lifetime, D2D CRC trained more than 2000 data scientists, supported 71 PhD students, delivered five software products, and filed five patents.

"In 2014, we set out to respond to the national security community's data analytics needs as well as to help build a sustainable data workforce for Australia. I am proud to say that we have done just that," D2D CRC Chairman Tim Scully said.

The CRC also created Australia's first Data Science Competency Framework, which will influence the training and development of Australian data scientists for years to come.

"Our legacy will be recognised through over 2,000 people who have completed D2D CRC training. And the unique Data Science Competency Framework, an Australia-first, will influence data scientists' development for years to come," Mr Scully said.

"Our goal was to solve complex problems that the national security agencies faced and … we have produced real capabilities that now help keep Australians safe, capabilities that are now commercialised by our two spinout companies, NQRY and Fivecast. I am pleased that our legacy will live on through these companies as they carry forward key elements of our technologies," Scully said.

4.1.2 Case Study CRC for Advanced Composite Structures soared with $5bn Boeing deal

Virtually every passenger jet in the sky has major wing or tail components embedded with Australian innovation, thanks to the pioneering work done by the highly-acclaimed CRC for Advanced Composite Structures (CRC-ACS) and its spin-out successor company, Advanced Composites Structure Australia (ACS-A).

The CRC (1996-2015) established itself as the world's leading expert on the development of carbon-fibre and glass-fibre-composite materials, which are widely used in modern aircraft, automobiles, ground transportation, renewable-energy infrastructure and marine craft.

The moveable trailing edges of the Boeing 787 Dreamliner were developed utilising technologies from CRC-ACS, resulting in a A$5bn manufacturing contract over 20 years and thousands of local jobs.

Indeed, the CRC's innovations changed the aviation industry. Airbus - a CRC partner alongside Boeing - quickly adopted the technology for its Airbus A350XWB, which is more than 50% made from composite materials. Today, composite materials have become the material of choice for modern aircraft structures.

Led by Lawrence Hargrave Award recipient Professor Murray Scott, the CRC's program of technology development and success in technology implementation ranged across market sectors, including aerospace and defence industries, automotive, and oil and gas.

Significantly, the intellectual firepower, experience and IP behind the CRC moved across to spin-out commercialisation company Advanced Composites Structure Australia (ACS-A), which continues to thrive and innovate with major contracts across a range of industries. The company is known globally for solving problems in novel ways and continues to work with major companies, research organisations, and government entities, including on cutting-edge innovations for drones and advanced armour in the aerospace and defence sectors.

4.2 First Nations Leadership

Australia's Cooperative Research Centres (CRC) Program have played a critical role in advancing research and innovation in partnership with First Nations communities. Over the past two decades, a series of CRCs have demonstrated that genuine inclusion of Aboriginal and Torres Strait Islander knowledge can strengthen scientific outcomes, create public good, and empower communities.

CRCs such as the CRC for Aboriginal and Tropical Health, CRC for Aboriginal Health, and the Desert Knowledge CRC established foundational approaches to incorporating Indigenous knowledge in areas like health, land management, and economic development. These efforts were often led by visionary First Nations leaders and resulted in enduring institutions such as the Lowitja Institute and Ninti One Ltd.

Successful CRCs embedded Indigenous leadership in their governance. The Lowitja Institute CRC featured a majority-Indigenous board; CRC-REP and Ninti One included multiple Indigenous directors. This governance enabled Aboriginal and Torres Strait Islander peoples to set research agendas and shape outcomes.

CRCs produced tangible innovations grounded in First Nations knowledge, including:

- Bushfood cultivation techniques integrating traditional harvesting expertise;
- Health service reform driven by culturally informed research;
- Remote telehealth systems co-designed with Aboriginal Community Controlled Health Organisations;
- Culturally appropriate mine rehabilitation and water management strategies.

Current CRCs are advancing this legacy:

- CRC for Developing Northern Australia supports Indigenous enterprise, bushfoods, and community-designed telehealth;
- CRC for Transformations in Mining Economies has a First Nations Inclusion Strategy to ensure Traditional Owners co-design post-mining futures;
- One Basin CRC has embedded Indigenous leadership and is co-developing projects on cultural water, native grains, and environmental restoration, guided by traditional knowledge holders.

These CRCs have built a cohort of Indigenous researchers, entrepreneurs, and policy contributors, supporting Indigenous self-determination in research and innovation.

4.2.1 Case Study: Ninti One – Sustaining CRC Legacy and Economic Participation of First Nations in Remote Australia

Ninti One Ltd is a nationally recognised Indigenous-led research and consulting organisation, and a key example of a successful long-term outcome from the Cooperative Research Centres (CRC) Program. It was established during the Desert Knowledge CRC (2003–2010) and it continued to grow under its management of the CRC for Remote Economic Participation (CRC-REP, 2010–2017). These CRCs pioneered place-based, participatory research with remote Aboriginal and Torres Strait Islander communities, addressing priorities across land management, enterprise development, education, and service delivery.

A central feature of both CRC-REP and Ninti One has been the genuine integration of First Nations knowledge systems and leadership. The governance of CRC-REP included up to five Indigenous directors, several of whom transitioned onto the Ninti One board. Ninti One continues to operate as an Indigenous-controlled not-for-profit company, embedding Aboriginal and Torres Strait Islander perspectives across its operations. It is now one of the largest providers of Indigenous research and engagement services to the Australian Government and plays a central role in enabling effective Indigenous participation in policy and program design. Ninti employs of 150 people each year across Australia and internationally, the majority being Indigenous. It also operates one of Australia's few Supply Nation Registered Training Organisations (RTO), which has a focus on primary health care in remote Aboriginal and Torres Strait communities.

The research approach developed through CRC-REP and sustained by Ninti One emphasises co-design, local knowledge, and practical application. Projects such as the "Plant Business" initiative, which integrated traditional bush tomato harvesting practices with scientific agronomy, exemplify this approach. Other notable outputs include the Interplay Wellbeing Framework, which blends Indigenous concepts of wellbeing with Western social indicators, and economic research that strengthened remote art and tourism enterprises owned by Indigenous communities. These projects not only generated academic insights, but also delivered social and economic benefits directly aligned with community aspirations.

A strong commitment to capability development underpinned these efforts. CRC-REP and Ninti One invested in building research and leadership skills among Aboriginal and Torres Strait Islander people in remote areas—employing community researchers, supporting

postgraduate study, and fostering pathways into employment. Many of the individuals trained through these CRCs are now working in Indigenous organisations, universities, and government roles, contributing to ongoing policy development and research translation. Importantly, Ninti One demonstrates how outcomes from the CRC Program can be institutionalised beyond the life of a CRC. It has grown into a respected Indigenous business with national reach, supporting initiatives under the Indigenous Procurement Policy and collaborating with government and industry to co-deliver community-informed solutions.

The evolution of CRC-REP into Ninti One highlights the value of CRCs as vehicles not only for knowledge creation, but also for structural change—supporting Indigenous self-determination, enterprise, and long-term research capacity.

As Australia examines the future of its research and development system, the Ninti One case illustrates the lasting impact of CRCs that prioritise Indigenous partnership and local knowledge. It affirms the importance of flexible, place-based, and community-led approaches that extend research benefits beyond traditional institutional boundaries and deliver enduring value to First Nations communities.

4.3 Collaboration to tackle Australia's Net Zero Ambitions

An independent study by ACIL Allen has confirmed that the Cooperative Research Centres (CRC) Program is significantly advancing Australia's decarbonisation efforts. Focusing on 13 CRCs and post-CRC entities, the study estimates that from 2017 to 2032, these centres will contribute an additional $4.8 billion to Australia's economic output, abate 3.3 billion tonnes of CO_2, and create approximately 3,705 job-years. This impact stems from over $1 billion in combined public and private R&D investment, highlighting the CRC model's effectiveness in fostering industry-research collaboration to address complex challenges.

The CRCs' extensive network, encompassing over 1,600 partners across research, industry, and government sectors, with connections in more than 18 countries, underscores their pivotal role in driving innovation. Examples include the Blue Economy CRC's work on offshore clean energy, Future Fuels CRC's development of zero-emission fuels, iMove CRC's efforts in transport electrification, and SmartCrete CRC's advancements in sustainable construction materials. These initiatives demonstrate how CRCs serve as scalable, collaborative platforms capable of accelerating Australia's transition to a net-zero economy

4.4 Lifting Rural and Regional Economies

Since its inception, the CRC has made a substantial and enduring contribution to rural and regional Australia, particularly across agriculture, water, environment, and food systems. By fostering long-term collaboration between researchers, industry, and government, CRCs have translated scientific excellence into practical solutions that benefit communities, businesses, and ecosystems.

Across three decades, CRCs in these sectors have:

- Driven Innovation: CRCs have delivered breakthroughs such as genomic selection tools for livestock, water quality frameworks, pest control technologies, and new crop management strategies — significantly improving productivity and sustainability.
- Accelerated Commercialisation: CRCs have brought new technologies to market through industry partnerships, delivering commercial products, spin-off ventures, and improved on-farm and processing methods. Agriculture-related CRCs alone generated over $9.1 billion in economic benefit between 2012–2020.
- Strengthened Capacity and Skills: Thousands of students and professionals have been trained through CRCs, returning skilled graduates and innovation know-how to regional businesses and institutions.
- Enabled Policy and Systems Change: CRC outputs have shaped national standards (e.g. drinking water guidelines), informed government strategies (e.g. biosecurity, climate accounting), and improved emergency management and disaster resilience.
- Delivered Social and Environmental Outcomes: Beyond economic returns, CRCs have improved water security, natural resource stewardship, health outcomes, and community safety — especially in regional and remote areas.

The program's structure – co-designed problems, long-term collaboration, and embedded pathways to adoption – has proven highly effective in addressing national and local challenges.

4.4.1 Case Study: Cotton Catchment Communities CRC – Driving Profitable and Sustainable Irrigated Agriculture

The Cotton Catchment Communities CRC (2005–2012) stands as a leading example of a Cooperative Research Centre delivering high-value, science-led innovation to rural industries. With a focus on improving productivity and environmental management in irrigated agriculture, the CRC brought together cotton growers, natural resource managers, researchers, and regional communities across Australia's major cotton-producing regions.

Key Outcomes and Impact

- $1 Billion in Net Benefits: An independent economic evaluation found that the CRC's outputs generated more than $1.0 billion in net benefits to the cotton industry, with a benefit-cost ratio of 7:1 — an exceptional return on public and private investment.
- Water Use Efficiency: The CRC developed advanced irrigation tools and decision-support systems, enabling growers to make precise water allocation decisions. These innovations significantly improved on-farm water use efficiency and helped reduce pressure on regional water systems.
- Natural Resource Management: Integrated catchment-scale models and on-farm tools were co-developed to manage soil salinity, water quality, and biodiversity. These tools informed better land-use planning and contributed to environmental outcomes in the Murray-Darling Basin.
- Technology Adoption and Capacity Building: The CRC's collaborative model ensured that scientific outputs were rapidly adopted by growers. Through extensive extension

work, including trials, workshops, and digital tools, the CRC supported widespread uptake of innovations across the cotton-growing regions of NSW and Queensland.

- Science into Policy and Practice: CRC research shaped regional natural resource policy and supported best-practice management standards across catchments. Its legacy continues through tools and partnerships adopted by industry bodies and regional NRM organisations

Operating in one of Australia's most economically and environmentally sensitive sectors, the Cotton CRC's work demonstrates the CRC model at its best: delivering scientifically rigorous, commercially viable, and environmentally sustainable solutions with lasting regional benefits. It also exemplifies how collaboration between industry, government, and researchers can produce outcomes that are both nationally significant and deeply rooted in place.

5. Policy Recommendations: Strengthening Australia's R&D System

To unlock the full potential of Australia's innovation system, CRA recommends a suite of strategic reforms to improve coordination, capability, participation, and impact. These recommendations are based on evidence gathered from stakeholder consultations, case studies, international comparisons, and long-term evaluation of translational R&D programs like the CRCs.

1. Affirm R&D and Innovation as Core Economic Policy

Position research and innovation as foundational to Australia's long-term economic strategy, linking it directly to national productivity, resilience, and competitiveness.

- Explicitly embed R&D and innovation in the remit of central economic agencies and national economic planning processes.
- Set an ambitious national R&D intensity target (e.g. 3% of GDP) to drive public and private investment.
- Ensure that innovation performance is measured and reported alongside core economic indicators.

2. Design Policy Around Clear National Priorities and Guiding Principles

Design for impact by provide clarity, alignment and long-term certainty to innovation stakeholders by ensuring that all programs are underpinned by shared national missions and design principles.

- Establish a set of core principles (e.g. collaboration, flexibility, translation, impact, transparency) to guide policy and program design across portfolios and prevent the creep of regulatory burden that acts in opposition to the principles.
- Align innovation funding programs with defined national missions (e.g. net zero, health security, sovereign manufacturing) to enable strategic investment.
- Encourage bipartisan commitment to a long-term National Innovation Strategy to reduce volatility across election cycles.

3. Establish a National Innovation Coordination Mechanism

Improve coherence and system-level planning across Australia's fragmented innovation landscape by creating a dedicated, cross-portfolio coordinating function.

- Create a central coordinating body or mechanism within the Commonwealth to oversee innovation program alignment, system architecture, and impact tracking.
- Empower this body to harmonise program timelines, reduce duplication, and broker alignment across Commonwealth, State and industry strategies.
- Task it with leading regular system reviews, performance evaluations, and stakeholder engagement to ensure responsiveness and effectiveness.

4. Scale and Sustain What Works Across Portfolios

Ensure long-term investment in proven translational models, such as CRCs, Research and Development Corporations (RDCs), and Trailblazers, by embedding them into whole-of-government innovation strategies.

- Increase the scale and longevity of successful collaborative models with funding that matches their national impact.
- Extend adoption of these models across portfolios—including Health, Defence, Agriculture, Environment and Regional Development.
- Streamline and simplify application, contracting and reporting processes to reduce burden and accelerate outcomes.

5. Modernise Government Procurement to Drive Innovation

Use public procurement as a strategic tool to support early-stage innovation and the commercialisation of Australian technologies.

- Introduce a national Small Business Innovation Research (SBIR)–style program at scale that enables government departments to act as early adopters of Australian innovation.
- Mandate innovation-focused procurement targets within key agencies and link procurement reform with broader innovation policy objectives.
- Use procurement programs to derisk adoption of new technologies, especially for SMEs, and drive demand-led scale-up of Australian capabilities.

6. Foster a National Culture of Innovation and Entrepreneurship

Shift cultural norms to value experimentation, risk-taking, and entrepreneurship as essential to Australia's innovation future.

- Embed entrepreneurship education across all levels of the education system and invest in practical, challenge-based learning opportunities.
- Celebrate success stories and lessons from failure through national platforms, awards and storytelling campaigns.
- Support innovation fellowships, accelerator programs, and startup-industry partnerships—particularly in regional and emerging sectors.

7. Invest in Place-Based Innovation and Innovation Ecosystem Development

To grow high-value, regionally distributed innovation capacity that drives inclusive economic development, enhances sovereign capability, and strengthens Australia's position in the global innovation economy.

- Invest in the development of research and innovation precincts—particularly those anchored by collaborative models such as CRCs, Trailblazers, and University–Industry hubs—to act as long-term platforms for economic transformation and sovereign capability.
- Support the co-location of research, industry, startups, and education providers in innovation districts and regional clusters, enabling the creation of high-value, knowledge-intensive jobs.
- Maximise the creation and retention of intellectual property (IP) within Australia by embedding R&D, commercialisation support, and talent pipelines in place-based innovation strategies.

- Prioritise regional equity by directing innovation investment to rural, industrial, and historically disadvantaged areas—ensuring bottom-up and middle-out economic growth.
- Embed ecosystem-building criteria in funding assessments, and support enabling infrastructure (testbeds, digital platforms, shared labs) that links local innovation to national missions and global markets.

8. Reform the Research and Development Tax Incentive (RDTI)

Ensure the RDTI delivers on its intended purpose by more effectively supporting collaboration, translation, and economic additionality.

- Conduct an independent review of the RDTI's effectiveness, complexity, and alignment with national innovation objectives.
- Consider introducing a collaboration premium or additional incentives for industry–research partnerships and experimental development.
- Explore mechanisms such as income-contingent loans, refundable credits, or place-based incentives for regional and Indigenous-led R&D activity.

9. Build Agility and Capacity for Fast-Failure and Iteration

Enable the experimentation, iteration and risk that are essential for innovation—particularly in early-stage development and commercialisation.

- Design programs with built-in flexibility, including stage-gated funding, rolling rounds, and pilot-friendly structures.
- Expand innovation sandboxes and "testbed" environments to allow safe trialling of new technologies, business models, and policy settings.
- Shift risk appetite in existing programs to accommodate smaller, riskier ventures and enable quicker response times.

10. Commit to Long-Term, Whole-of-Government Tracking of Impact

Improve accountability, learning, and system performance by tracking the long-term outcomes of innovation investments.

- Establish a national framework to monitor the economic, social and environmental outcomes of publicly funded R&D, including post-program impact tracking for CRCs and similar models.
- Create a central public dashboard of key innovation metrics and program evaluations.
- Mandate outcome reporting three-five years post-grant for innovation programs, and use this data to inform future program design.

5.1 CRC -Specific Recommendations

1. Scale the CRC Model

To restore the CRC Program as a program designed for impact to its long-term average in real terms and meet current and emerging national challenges with sufficient scale and frequency.

- Increase the annual CRC Program budget to $250 million (in 2024 dollars), reflecting a return to historic averages in real terms.

- This uplift would support at least two new full-scale CRCs and up to eight CRC-Ps each year, strengthening Australia's innovation pipeline.
- Target new CRCs toward unmet national priorities, regional development goals, and strategic industry sectors where Australia has emerging or established competitive advantage.
- Establish a separate funding stream for CRC-P grants for clarity and certainty for participants

2. Expand the CRC Model Across Government Portfolios

To embed the benefits of the CRC model in solving national challenges across health, environment, defence, regional development, agriculture, and other sectors beyond traditional portfolios.

- Enable co-investment in CRCs by departments outside DISR, supported by a central innovation coordination mechanism.
- Fund CRC-like initiatives through mission-driven programs across health, climate adaptation, regional development, and sovereign capability.
- Encourage shared governance and performance metrics between portfolios to maximise collaboration and national alignment.
- Promote this approach as a mechanism to integrate research translation into delivery of broader public policy objectives.

3. Improve Continuity, Flexibility and Transition Pathways for Successful CRCs

To preserve the value created by CRCs at the conclusion of their funding cycle and ensure continued commercialisation, adoption, and capability development.

- Develop structured transition mechanisms for successful CRCs to evolve into self-sustaining entities (e.g. Canthera, Ninti One).
- Introduce bridge funding, soft-landing extensions, and tailored transition planning support to enable the transfer of IP, workforce, and commercialisation pipelines.
- Create greater flexibility for unfunded extensions for CRCs to support commercialisation via spinouts, licensing, or downstream adoption activities.

4. Enable CRC Access to Cross-Program Funding

Formally recognise CRCs as mission-driven innovation hubs and unlock the full potential of CRC consortia by allowing them to align with and deliver on the goals of other national innovation programs.

- Formally recognise CRCs and their consortia as eligible applicants and delivery partners within broader national funding schemes, including:
    - The National Reconstruction Fund
    - Industry Growth Program

    - Clean Energy Future Fund
    - Regional innovation and infrastructure programs
- Promote CRCs as collaborative vehicles capable of implementing multi-program strategies through shared governance and outcome frameworks.

5. Strengthen Long-Term Tracking of CRC Outcomes

To build an evidence base that recognises the enduring economic, social, and environmental returns of CRCs and their successor entities.

- Introduce a national CRC impact monitoring framework, enabling outcome reporting for at least 5–10 years after grant funding concludes.
- Track the performance of CRC alumni (e.g. spinouts, industry partnerships, commercialised IP) to understand long-term impact.
- Fund independent program-wide evaluations at regular intervals, incorporating both quantitative outcomes and stakeholder feedback.
- Use this data to inform future program design and communicate public value to stakeholders and international partners.

6. Leverage CRCs to Address the "Missing Middle"

To enable Australia's mid-sized innovation-oriented companies to grow, scale and compete globally by placing them at the centre of translational research partnerships.

- Adapt the CRC-P model to allow streamlined applications for mid-tier businesses and consortia with strong commercialisation potential.
- Provide fast-track mechanisms, reduced red tape, and greater flexibility in matching contributions for mid-sized companies in CRCs or CRC-Ps.
- Use CRCs as a platform to incubate and scale the next generation of globally competitive Australian firms.

7. Promote CRCs as a Flagship of Australian Innovation Policy and Diplomacy

To position CRCs as a symbol of Australia's collaborative innovation capability and leverage Australia's reputation as an innovation national internationally.

- Embed the CRC Program in Australia's international trade and science diplomacy strategies.
- Support CRCs and their spinouts to engage in global collaboration, export technology, and attract international investment.
- Promote the CRC model as a globally replicable structure for translational R&D, aligned with Australia's regional and bilateral innovation partnerships.
- Publicly elevate CRC success stories and alumni as exemplars of Australia's research and innovation ecosystem.

6. Conclusion: A Call for Bold R&D Reform

Australia's future economic success will depend on its ability to harness R&D as a national asset—creating jobs, strengthening industries, and solving complex challenges through coordinated, mission-driven innovation.

R&D must be harnessed as a central lever of national policy, tightly linked to broader societal goals such as decarbonisation, health security, sovereign capability and inclusive growth. That requires a shift away from fragmented funding and short-term interventions toward coordinated, mission-driven investment in innovation.

Australia must move beyond discovery to impact. That means investing in translation and adoption, in industry-led R&D—not just ideas, but implementation. It requires a collaborative innovation ecosystem where research, industry, and government are aligned around clear national missions and with a proper incentive system.

The Cooperative Research Centres (CRC) Program stands out as one of Australia's most effective tools for achieving this coordinated, problem-solving approach to R&D. It has delivered real results—and holds even more untapped potential if prioritised in the innovation agenda, if expanded, and if better supported.

For over three decades, CRCs have built enduring partnerships between industry, research, and government. They deliver economic, social, and environmental value by aligning research with real-world challenges and supporting pathways to adoption. The CRC model has repeatedly demonstrated its value as a catalyst for industry collaboration, innovation, and economic resilience.

We are calling for long-term government commitment to industry-driven R&D, and to scaling the Australian companies that invest, take risks, and emerge stronger. That means backing proven translational models, supporting cross-sector collaboration, and enabling risk with reward.

7. Supporting Documents

Attachment A CRA Rural, Regional and Remote Interest Group Submission

Attachment B Letters from Industry Partners

Attachment C Consultation Summary from CRA's Engagement with the Expert Panel

Attachment D Additional CRC Case Studies

Attachment E Acil Allen CRCs and Decarbonisation Study

Attachment F CRA Entrepreneurial Alumni Report

Attachment G National Innovation Policy Forum Report 2022

Attachment H National Innovation Policy Forum Report 2023

National Innovation Policy Forum 2024 Summary can be found at
https://www.cooperativeresearch.org.au/events/national-innovation-policy-forum/