ACDS response to the 2026 National Research Infrastructure (NRI) Roadmap Exposure Draft

The Australian Council of Deans of Science (ACDS) is the national peak body representing science in Australian universities. We welcome the opportunity to contribute to the draft National Research Infrastructure Roadmap. Our submission focuses on selected consultation questions where the experience and perspectives of university science leaders can make a particular contribution.

Q1. What additional elements of 'what good looks like' should be considered in the future design of the NRI system?

A strong national research infrastructure system must support discovery, research training and translation, with equitable access across Australia's university science community.

- Infrastructure priorities should recognise the long-term value of fundamental research alongside immediate applications and clearly articulated pathways to future impact. Discovery generates the knowledge, methods and capabilities on which future translation and impact depends.
- User charges, travel, sample preparation and access to technical support can limit participation. Assess these costs when planning access arrangements, particularly for researchers in smaller and regional institutions. Pricing and allocation criteria should be transparent and support equitable participation across institutions and career stages.
- Universities provide infrastructure, specialist expertise, research training and substantial financial and in-kind support. These contributions should be recognised in national planning and investment decisions.
- Measurement, observation, experimentation and collections generate the data that underpin computing, modelling and AI. Digital investment should develop alongside the physical capabilities on which it depends.

Q4. What opportunities for change to current national planning and prioritisation approaches do you recommend for consideration?

National planning should establish clear priorities and support the full lifecycle of research infrastructure, including the people needed to sustain it.

- Explain how decisions will balance renewal and new capability, discovery and application, and domestic provision and international access. Identify the evidence and criteria used to assess these choices.
- Researchers, host institutions, technical specialists and co-investment partners should inform assessments of demand, feasibility and long-term sustainability.
- Investment decisions should account for operation, maintenance, technical staff, associated digital and AI operating costs, upgrades and eventual replacement or decommissioning. Include the costs absorbed by university hosts, where appropriate. Investment commitments should be supported by an agreed plan to fund these full lifecycle costs.

- Planning and funding should reflect the long development and operating lives of major facilities. Examine options for more enduring investment arrangements, including whether an MRFF-style mechanism could help sustain infrastructure and workforce capability.

Q5. What opportunities do you see for more effective coordination or integration among NRI facilities?

Better coordination should make infrastructure easier to find, share and use, while preserving the benefits of distributed capability.

- Build on existing networks to connect researchers with university-based facilities and infrastructure operated by CSIRO, other public research agencies, specialist research institutes—including medical and health institutes—and industry, where appropriate. Smaller facilities can collectively provide nationally significant capability and fill gaps in provision, when they are incentivised to collaborate. Pilot coordination arrangements where the benefits justify the effort.
- Require infrastructure proposals to identify upfront the computing, data storage, networks, software and specialist support needed throughout the project's life. Assess these interdependent requirements together before investment decisions, so essential supporting infrastructure is planned and funded alongside the primary equipment.
- Some duplication provides resilience, supports emerging disciplines and enables access for geographically dispersed researchers. Decisions to consolidate facilities should assess these benefits, including the implications for regional and Western Australian universities.
- Address booking arrangements, user charges and access to specialist technical support. Coordination needs to deliver practical benefits for both users and host institutions. Monitor waiting times and participation across institutions and career stages, using proportionate measures and existing information wherever possible.
- Connect infrastructure with testing, validation, prototyping and scale-up services. Involve industry in facility design and commissioning where appropriate, supported by clear access, contracting and intellectual property arrangements.

Q6. What specific opportunities for greater coordination between funding schemes do you recommend should be subject to further analysis in 2027–2028 to improve Australia's RI system?

Funding coordination should close gaps between research grants, infrastructure investment and the ongoing costs of delivering accessible capability.

- Examine NCRIS, ARC, NHMRC, relevant MRFF investments and state and territory support for mismatches in funding cycles and eligible costs. Include gaps between funding new research methods and providing the digital research infrastructure needed to use them, including AI and supercomputing capacity and the development and maintenance of reliable software tools. Funded research needs access to operating facilities and specialist staff; infrastructure planning needs evidence of research demand.
- Align the transition from LIEF to the proposed CIEF scheme with Roadmap implementation, ensuring continuity of support and identifying gaps affecting smaller-scale university infrastructure. Clarify how CIEF, NCRIS and institutional investment will together support renewal, maintenance and access.

- Agree responsibility for capital, operations, technical staff and renewal across funders and hosts. Record these responsibilities in transparent co-investment agreements before commitments are made, ensuring university hosts are not left with unfunded operating obligations. Recognise universities' existing contributions, differing financial capacity and the national benefits of facilities they support.
- Identify practical links with Commonwealth and state manufacturing and translation initiatives, including the National Reconstruction Fund and Future Made in Australia, while respecting their distinct purposes.
- Align reporting requirements and reuse existing information wherever possible. Coordination and evaluation should improve decisions without adding unnecessary burdens for facilities and universities.

Q11. In the descriptions of any of the capabilities (workforce, digital research infrastructure, fabrication, observation, measurement, and collections), are there key aspects that have not been mentioned? If so, please elaborate.

An expert, sustainable workforce must be treated as a funded component of research infrastructure throughout its lifecycle.

- Identify the skills and staffing needed to design, develop, construct, commission, operate and renew infrastructure. Workforce requirements should inform investment decisions from the outset.
- The Roadmap's recognition of multi-year workforce funding should translate into a clear recommendation for its implementation. Repeated short-term contracts put specialist expertise, institutional knowledge and reliable services at risk.
- Support training in instrumentation, machining, electronics, software and the construction of bespoke experimental equipment, alongside scientific and facility management expertise. Enable technical apprenticeships or equivalent training pathways to build the specialist workforce required by these facilities.
- Enable higher degree research students and early-career researchers to use major facilities and work alongside their specialists. Placements and structured training can build capability and expose emerging scientists to careers in technical leadership, infrastructure management and operations.

Q12. Do you have any comments on the proposed phased approach to elevate Indigenous Knowledge Systems?

ACDS supports Indigenous-led approaches, with dedicated resourcing from the first phase to make leadership and participation sustainable.

- Include First Nations expertise in infrastructure planning, priority-setting, governance and evaluation. Budget for participation and remunerate contributions appropriately, rather than relying on additional unpaid cultural work.
- Work through trusted partnerships and existing Indigenous governance arrangements wherever possible. Coordinate engagement to avoid repeated consultation and unnecessary demands on communities.
- Establish clear arrangements for Indigenous Data Sovereignty, cultural and intellectual property, and free, prior and informed consent, including how knowledge and data are accessed, used, shared and protected.

- Develop pathways for First Nations researchers, students and technical professionals to participate in and lead infrastructure activities. Define intended benefits with communities and assess progress against outcomes they value.

Q13. Do you have any comments on the proposed integrated national approach to HPC (high-performance computing)?

National coordination of high-performance computing should improve capability and access while maintaining service continuity and institutional expertise.

- Identify strategically important capabilities in AI tools, including agentic AI, deployment and assurance that Australia needs to develop and sustain. Prioritise sovereign expertise and capability in critical areas, reducing vulnerabilities arising from dependence on overseas providers. Include tools to evaluate AI systems and detect and mitigate AI-enabled threats, drawing on domestic and international expertise.
- Plan computing, storage, networks, research software and specialist support as a connected system. Include data management and discoverability, sustained software development and maintenance, and secure environments for sensitive data. Build cybersecurity and resilience to disruptions, including geopolitical risks, into infrastructure design and operation.
- Explore partnerships with data-centre providers to secure suitable, reliable and affordable computing and storage capacity for Australian research and innovation.
- Consider how emerging quantum computing capabilities could complement HPC and connect with national research infrastructure. Assess research needs, readiness and access opportunities, drawing on expertise across Australia.
- National integration should draw on local expertise and preserve institutional capacity that supports research, training and responsive user services.
- Provide software, training and specialist assistance across disciplines and institutions, including for researchers with emerging computing and AI requirements. Recognise that different research fields and problems require different computing architectures. Balance this diversity against delivery costs and the size of the communities served, while recognising emerging research needs, equitable access and resilience.
- Evaluate reliability, timely access, usability and research outcomes alongside technical capacity and efficiency. Include users and institutional specialists alongside Australian industry and international technology and AI providers in planning and evaluation.

Q16. Please add any other feedback you would like the Roadmap Expert Working Group to consider.

ACDS—the voice of university science—supports the Roadmap's direction and seeks a clear pathway from its principles to implementation.

The ACDS is the national voice of university science, representing Deans of Science and equivalent leaders across Australian universities. Our membership spans diverse institutional settings and science disciplines, including agricultural and food sciences; biological and life sciences; biomedical and behavioural sciences; earth and environmental sciences; mathematical and computational sciences; and physical and chemical sciences.

Our Strategic Plan 2026–2030 recognises the interconnected contributions of science education, research and translation, and the importance of advancing First Nations peoples and science.

Research infrastructure supports these contributions by enabling discovery, developing researchers and technical professionals, and connecting knowledge with applications.

ACDS welcomes the Roadmap's emphasis on national coordination, thoughtful assessment and prioritisation, and stronger translation pathways. The final Roadmap would be strengthened by a clear implementation pathway identifying immediate actions, areas requiring further analysis, responsibilities and indicative timeframes, supported by proportionate monitoring of outcomes. While detailed investment planning will follow, this would give the sector a clearer basis for planning and collaboration.