SUBMISSION

Submission to the Department of Education

Submission to the 2026 National Research Infrastructure Roadmap Exposure Draft Consultation

26 October 2026

The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

The Exposure Draft of the 2026 National Research Infrastructure (NRI) Roadmap outlines an ambitious but necessary vision for a more effective and strategic NRI ecosystem. Delivering this vision will require secure, long-term funding, including for the National Collaborative Research Infrastructure Strategy (NCRIS) program. As the internationally distinctive NCRIS program commences its third decade, stability should be achieved through ongoing funding arrangements and governance arrangements that recognise the program as a permanent national capability. ATSE recommends establishing an independent body supporting governance and planning for the NRI system, reducing the impacts of fragmentation. Underpinning this is the need to support the skilled NRI workforce: the people who enable research infrastructure to be used to its potential.

ATSE is proud to have contributed to previous consultations on the 2026 Roadmap (ATSE 2025a; ATSE 2025b) as well as the NRI Workforce consultation (ATSE 2025c), and is pleased to see its input reflected in the Exposure Draft, including the focus on high-performance computing (HPC) and shared-use Artificial Intelligence (AI) infrastructure, and on data sovereignty and data sharing.

ATSE makes the following recommendations for delivering the 2026 National Research Infrastructure Roadmap:

Recommendation 1: Convert NCRIS to an ongoing program with indexed base funding and a rolling ten-year investment plan tied to each Roadmap, with post-2028–29 arrangements confirmed well before current agreements expire.

Recommendation 2: Develop a nationally coordinated approach to translation research infrastructure, including access pathways for industry users.

Recommendation 3: Deliver the NRI Workforce Strategy committed in the 2021 Roadmap, including multi-year funding for critical roles.

Recommendation 4: Establish a standing, independent NRI body to support governance and whole-of-lifecycle planning, including a Commonwealth–state/territory NRI compact.

Delivering certainty through secure, ongoing funding

Innovation and capacity building depend on access to research infrastructure. The upcoming funding cliff is therefore an immediate challenge to national capabilities.. As identified in the Ambitious Australia report, Commonwealth funding for national research infrastructure is projected to almost halve after 2028-29 (Denholm, Chubb, Wood & Cornick, 2026). This is driven by the expiry of the flagship National Collaborative Research Infrastructure Strategy (NCRIS) program. NCRIS, established in 2006, has been funded through periodical announcements despite being an integral part of the national research infrastructure landscape. ATSE recommends that NCRIS is converted to an ongoing program with indexed base funding and a rolling ten-year investment plan tied to each Roadmap. This would reflect the long-term nature of research infrastructure; it cannot be quickly spun up or wound down in response to short funding cycles.

Pressures on co-investors reinforce the need for ongoing Commonwealth funding. NCRIS guidelines require co-contributions to "at least match the NCRIS grant for each project". However, major co-funders such as CSIRO and universities are increasingly resource constrained. Universities' spending of their own general funds per dollar of research income, an indicator of their capacity to co-invest, fell from $1.28 in 2018 to $1.06 in 2022 (UA 2026). Partners are therefore unlikely to offset the significant drop in Commonwealth contribution beyond 2028–29.

Funding uncertainty contributes to many of the other challenges identified in the Exposure Draft. It undermines workforce stability, limits strategic planning, and diverts effort away from research delivery towards securing future funding. With sectoral discussions dominated by funding challenges, attention is displaced from other priorities such as increasing industry engagement and developing workforce capability.

High-performance computing (HPC) provides an example of identifying a strategic priority without providing the resources to deliver it. The Exposure Draft highlights HPC as integral for research, sovereign capability, and rapid decision-making in sectors important to the Australian economy. The 2021 Roadmap identified HPC as requiring more resourcing and development. However, it has not delivered additional capability at the required scale. The 2026 Exposure Draft intensifies its focus on HPC, outlining a pathway towards an

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integrated HPC capability. This is an important feature for the 2026 Roadmap, and it is crucial that this plan is backed up by a commitment to turn it into a reality, within the framework of an ongoing NCRIS program.

Maintaining a collaborative ecosystem, as has emerged from the NCRIS program, would help maximise the value of public investment. National research infrastructure requires long-term coordination between governments, providers, researchers, industry and end users to ensure capabilities are aligned with national needs.

Recommendation 1: Convert NCRIS to an ongoing program with indexed base funding and a rolling ten-year investment plan tied to each Roadmap, with post-2028–29 arrangements confirmed well before current agreements expire.

Expanding industry access to research infrastructure

The Exposure Draft finds broad agreement on a greater focus on research translation, including improving industry engagement with existing research infrastructure, and that dedicated initiatives could support this. ATSE agrees that this is an area that could be improved. The conclusion of the Trailblazer Universities Program and the absence of new funding commitments for the Australian Economic Accelerator risk weakening the pathways that connect research infrastructure to industry. There is an opportunity to bridge the gap between research users and Small and Medium Enterprises (SMEs), particularly early-stage companies requiring prototyping facilities.

To strengthen these pathways, the NRI system could benefit from a “conversion layer” that translates research capability into industrial use. That layer would comprise shared test, pilot, demonstration and scale-up facilities (technology infrastructure), the national quality infrastructure, the skilled technician and translation workforce, and access arrangements for industry users. The conversion layer would join physical resources, such as test and pilot facilities, to the organisational, relational and human resources that put them and other research facilities to use. A skilled workforce will be critical to expanding industry access: professionals who are embedded into research infrastructure to bridge the gap between facilities and industry users.

Improving access is particularly important for SMEs, which often lack the capability to navigate Australia's complex research infrastructure landscape. ATSE’s previous submission on the Roadmap recommended a national register of research infrastructure to support SMEs to find relevant facilities and expertise (ATSE 2025a). While the Exposure Draft notes that creating a register of assets is not straightforward, this remains an important initiative to enable industry users to find and access research infrastructure more efficiently, alongside dedicated experts to help potential industry users identify and access facilities.

Part of the reason for low industry uptake is fragmentation, with multiple portfolios responsible for research infrastructure. While NCRIS is administered through the Department of Education, other NRI facilities are supported through a range of portfolios and funding mechanisms, including the Medical Research Future Fund. A ‘single front door’ would help industry users find relevant facilities without navigating a range of government programs and portfolios, leveraging impact from investments already made.

Alongside a nationally coordinated approach, another opportunity is for discipline-based research translation centres. The UK Catapult Network provides a model of how industry pathways can be developed. The Catapult Network brings together nine independent centres across different R&D areas to bridge the gap between research and industry, giving industry users access to shared facilities and expertise. Catapults provide an entry point for businesses seeking to access research capability. Some of this work is already happening in Australia, such as the Made 2 Measure NCRIS cluster that provides coordinated industry access to research infrastructure for advanced fabrication and precision measurement.

Recommendation 2: Develop a nationally coordinated approach to translation research infrastructure, including access pathways for industry users.

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Delivering the workforce strategy

The Exposure Draft identifies the specialised research infrastructure workforce as a cross-cutting enabler essential to a high-performing NRI system. As the Exposure Draft notes, these professionals hold highly specialised skills bespoke to their facilities.

Research infrastructure utilisation depends on the availability of skilled personnel. This has been quantified in the international example of the UK's ISIS neutron and muon source: user days ran at about 120 a year against an optimum of 180, which the operator attributed to insufficient funding for power and technical staff (National Audit Office 2016). Workforce constraints are particularly concerning given the Exposure Draft's observation that collaboration is "generally catalysed by individuals", and that workforce is a barrier to industry engagement. It is critical to secure, sustain and grow the workforce that is the lifeblood of research infrastructure.

The NRI Workforce survey conducted in March 2025 surfaced a range of concerns indicating a workforce in crisis. As ATSE highlighted in its submission to that survey, the lack of long-term planning for facilities also corresponds to a lack of stability for the NRI workforce (ATSE 2025c). When funding is uncertain, specialists may leave before agreements expire, and a dispersed team is not readily reassembled as the required skills are rare. This has previously been faced during the period of NCRIS funding uncertainty in 2015. The 1,700 NCRIS staff at that time had their positions at risk, with facilities warning that many were put on provisional notice of termination and some were leaving their positions (National Research Alliance 2015). Interruptions to research activity elsewhere have demonstrated measurable costs and lasting consequences: a 16-day US federal shutdown in 2013, at the start of the Antarctic summer field season, was followed by an 11 per cent decline in affected researchers' byline-weighted publications (Gulati & Helmers 2026). A Workforce Strategy would also outline a plan for workforce renewal, enabling continuity as professionals with specialist skills retire.

The Exposure Draft identifies a path forward which includes professional development opportunities, improved workforce stability and retention, and expanded international collaboration and mobility. However, the 2021 NRI Roadmap committed to delivering an NRI Workforce Strategy. It is unclear whether this will be delivered as a stand-alone initiative or integrated into the 2026 Roadmap. ATSE recommends that the Workforce Strategy is recommitted to in the 2026 Roadmap, along with an explanation of how this commitment will be achieved, including adequate funding for workforce uplift. The Exposure Draft's inclusion of "multi-year funding for critical roles" as an action towards improved workforce stability and retention is a welcome first step.

ATSE also recommends that the 2026 Roadmap highlights a robust workforce, with structures to support skill development, retention, and the attraction of new professionals, as a defining characteristic of a good NRI system.

Recommendation 3: Deliver the NRI Workforce Strategy committed in the 2021 Roadmap, including multi-year funding for critical roles.

Providing stewardship for the NRI system

The Exposure Draft finds a need for improved governance models for NRI and notes the potential of the new National Resilience and Science Council in supporting coordination and strategic prioritisation. A dedicated oversight body for NRI would be an appropriate solution that would avoid the fragmentation issues highlighted in the Exposure Draft. This would be distinct from the existing NRI Advisory Group which provides advice to the Minister for Education on NCRIS and related matters. Consistent with the Auditor-General's recommendation that NCRIS establish stronger monitoring, evaluation and reporting arrangements against Roadmap priorities, the proposed body could oversee system-level performance monitoring (ANAO 2026).

ATSE's 2025 submission proposed establishing a government agency to coordinate all government research funding, including research infrastructure (ATSE 2025a). ATSE also recommended this to the Strategic Examination of Research and Development (ATSE 2025d). The subsequent Ambitious Australia report proposed a National Innovation Council and argued that research infrastructure requires coordination as part of the research ecosystem (Denholm, Chubb, Wood & Cornick, 2026). Noting that such an overarching body is outside the scope of the Roadmap, a standing, independent NRI body with a whole-of-

system remit would be a suitable solution to provide oversight for all categories of research infrastructure, in alignment with the National Science and Research Priorities. Its functions would include administration of a system-wide evaluation framework with impact measurement, revision of research infrastructure business models, and an independent review every five years. Commonwealth-state/territory coordination, including through a compact covering joint planning, co-investment timelines aligned to budget cycles. Inclusion of state-funded facilities in a national register could also be managed by this independent body. With Australia's association to Horizon Europe, this independent body could also have a role in engaging internationally to facilitate Australians' access to international research infrastructure, and facilitate reciprocal access to Australian infrastructure. This body would also be well-placed to consider lifecycle planning and long-term investment decisions for research infrastructure.

Establishing exit conditions, as well as criteria for establishment of new facilities, would improve the coherence of the NRI system. Sovereign capabilities and alignment to the National Science and Research Priorities may be considerations. Exit conditions should be based on set criteria rather than on a facility's ability to secure successive funding extensions.

This should not be interpreted as a presumption that facilities retain obsolete capabilities. Particularly within NCRIS, capabilities have been retired or reconfigured to keep up with technological developments and end user needs. The capacity of facilities to adapt, and how this fits within the broader national system, would be a further consideration for an independent oversight body.

Exits are difficult to achieve, as international examples show. The US National Science Foundation divested at least twelve major facilities or facility components between 2006 and 2021, one only in part, but its Inspector General found that it had not planned divestment for the older facilities reviewed, and that external influence kept one solar telescope running after its replacement became operational (National Science Foundation Office of Inspector General 2022). A 2025 comparison for the Swedish Research Council found decommissioning very rare in Finland and rare in the Netherlands, where facilities more often develop further or merge, and identified no clear examples in Norway (Vetenskapsrådet 2025).

Recommendation 4: Establish a standing, independent NRI body to support governance and whole-of-lifecycle planning, including a Commonwealth–state/territory NRI compact.

ATSE thanks the Department of Education for the opportunity to respond to the 2026 National Research Infrastructure Roadmap Exposure Draft Consultation. For further information, please contact academypolicyteam@atse.org.au.

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