Please note: the substantive content of the 2026 NRI Roadmap Survey begins at Question 20 (with prior questions dealing with administrative and other information).

As such all submissions that are published include the responses submitted from Question 20 onwards only.

Q20.

Part 2: Research themes

2.1 NRI comprises the assets, facilities and associated expertise to support leading-edge research and innovation in Australia and is accessible to publicly and privately funded users across Australia and internationally. We are seeking your input on possible directions for future national-level investment - i.e., where the requirements are of such scale and importance that national-level collaboration and coordination are essential.

The 2021 Roadmap used a challenge framework to support NRI planning and investment. With this in mind, consider likely future research trends in the next 5 - 10 years, and with respect to one or more of the 8 challenge areas identified in the 2021 Roadmap as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or not at sufficient scale and
- describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities.

Q21.

Resources Technology and Critical Minerals Processing

Q22.

Food and Beverage

Q23.
Medical Products

Q24.
Defence

Q25.
Recycling and Clean Energy

Q26.
Space

Q27.
Environment and Climate

Q28.
Frontier Technologies and Modern Manufacturing

Q29.

2.2 The 2024 statement of National Science and Research Priorities (NSRPs) includes outcomes linked to each priority to assist in identifying critical research needed in the next 5 to 10 years.
Consider the priority statements and, with respect to one or more of the 5 priority areas as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or
- not at sufficient scale and describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities, and where relevant, refer to the underpinning outcomes and research identified in the NSRPs document.

Q30.

Transitioning to a net zero future

Australia's ability to achieve a net-zero future will require technological advancements, but critically, we require transitional disciplines. Technologies and functions that allow us to progress in a complex ecosystem where true impact requires collaboration between domains. SmartCrete CRC is focused on decarbonisation of concrete, the product of a heavy industry (cement), which is classified as 'hard to abate'. The Decarbonisation Pathways for the Australia Cement and Concrete Sector report released in 2021 by SmartCrete CRC and partners in 2021 notes the importance of supporting technologies such as carbon capture, alternative fuels and the renewable energy transition to support full decarbonisation. https://smartcretecrc.com.au/publications/decarbonisation-pathways-for-the-australian-cement-and-concrete-sector/ SmartCrete's collaborative research efforts since the release of this report have identified that additional market barriers to decarbonisation must be addressed if we are going to achieve the targets outlined in our Nationally Determined Contributions to the Paris Agreement. These market barriers include: - Achieving government policy and procurement harmonisation across the many state and local governments (major market drivers as procurers of concrete). - Addressing complexity in supply chain decision making and risk sharing. - Advancing accelerated performance testing capabilities to assess long-term performance of novel low-carbon concrete mix designs. - Enhancing carbon data measurement and reporting systems to account for full-life emissions and support supply chain decision making. These barriers require advanced data modelling systems, new chemical performance testing capabilities and critically, training and capacity building programs to ensure the technologies and the research outputs generated are widely disseminated and adopted.

Q31.

Supporting healthy and thriving communities

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Q33.

Protecting and restoring Australia's environment

Q34.

Building a secure and resilient nation

Q35.

2.3 The case for a new NRI capability, or enhancements to existing capabilities, typically emerges through advocacy from research communities clustering around rigorously identified needs and goals. Such a concept could respond to a requirement for novel or expanded capacity within a domain, or across domains, and must be such that it could only be made available with national-level investment.
If you have identified such a requirement, briefly describe the need, the proposed infrastructure capability, the medium-term goals, impacted research communities, and the timeframe over which you advocate its establishment. Your response can include links to relevant existing reports.

Transition to net-zero for heavy industry will, to some extent, require carbon capture technology. Globally, carbon capture technology is progressing with advancements in both capture effectiveness and reduction in price. Australia's efforts in this space are somewhat siloed and would benefit from a coordinated national approach. At the commercial scale great progress in carbon capture and utilisation is being achieved by Australian company MCi Carbon, and research efforts are being supported across a range of Australian universities through various decarbonisation initiatives. https://mcicarbon.com/

Q36.

Part 3: Industry perspectives

This section is seeking input specifically from industry-based respondents. Other respondents can skip this section.
Recommendation 6 of the 2021 Roadmap related to improvements in industry engagement with NRI. To complement work on this topic that has occurred since then, we are seeking additional advice on NRI requirements as perceived by current or potential industry-based users.

Q37.

3.1 Have you (or your organisation) interreacted with or used Australia's NRI?

- (●) Yes
- ( ) No

Q38.

3.2 If so, please briefly outline the NRI capabilities you (or your organisation) have interacted with or used. Do not limit your response to NCRIS capabilities.

SmartCrete CRC has been pleased to collaborate with three of the NCRIS facilities to enhance research and development activities for the Australian cement and concrete ecosystem. The Australian Research Data council has supported strategy related to carbon data accounting systems, supply chain decision support systems and other major data management advancements. Microscopy Australia has supported strategy related to characterisation advancements for new low carbon concrete products, helping us to drive an innovation agenda related to new performance testing methodologies to understand concrete performance over time. Australian National Fabrication Facility has directly supported our research program related to advanced sensor technology to improve remote asset condition assessment and management. The NCRIS facilities provide a valuable and necessary coordinated research capability for the Australian innovation ecosystem, which coordinates sometimes disparate programs of research effort and drives greater capacity from cross institution and cross industry-research collaboration.

Q39.

3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

- [x] For expertise or advice
- [x] Access to research resources or products
- [x] Access to equipment for research
- [ ] Access to equipment for operational reasons
- [ ] Help in translating research
- [x] Access to data
- [ ] Support for clinical trials
- [ ] Other (please specify)

Q40.

3.4 If you answered no, please indicate your (one or more) primary reasons:

This question was not displayed to the respondent.

Q41.

Part 4: Other comments

4.1 Please elaborate on any of your above responses or add any other comments relevant to the development of the 2026 Roadmap. Your response can include reference or links to existing reports that you recommend be considered during the 2026 Roadmap development process.

Q49.

4.2 Optional Document Attachment.
Note: Our strong preference is that answers are provided against the relevant questions in the survey. However, this file upload option is available for submissions in file format, where needed. Please ensure the document includes your name or organisation.