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

The use of climate change information to inform risk assessment and adaptation options requires useful information about the variety of climatic hazards that produce most of our risk. Many of these hazards operate at relatively small space and time scales (e.g. short duration extreme rain, hail, wind gusts,...) which require climate models to be run at very high resolution to capture them and their future changes as the global climate changes. Running climate models are the required resolutions in order to do the scientific experiments to improve our understanding of how these hazards are produced, and to provide projections of their likely future changes requires extensive compute and data storage capabilities. The current compute capabilities at NCI, Pawsey and the model infrastructure from ACCESS-NRI provide a starting point for these investigations but the current data storage facilities are entirely inadequate and a major hindrance to progress in this area. In order to advance our knowledge and projections of these climate hazards a significant increase in supercomputing capacity and co-located data storage is required, along with continued development of the software infrastructure to handle these very high resolutions.

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

Q31.

Supporting healthy and thriving communities

Planning adaptation actions to minimise the impact of future climate hazards/disasters is needed to support healthy and thriving communities. To do this we need to know what changes in these climate hazards we can expect and this requires a new generation of high resolution climate projections. These in turn require a new generation of supercomputing capacity along with related data and modelling infrastructure. Investments in NCI, Pawsey and ACCESS-NRI should be priorities.

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Q33.

Protecting and restoring Australia’s environment

Planning adaptation actions to minimise the impact of future climate hazards/disasters is needed to protect Australia's environment. To do this we need to know what changes in these climate hazards we can expect and this requires a new generation of high resolution climate projections. These in turn require a new generation of supercomputing capacity along with related data and modelling infrastructure. Investments in NCI, Pawsey and ACCESS-NRI should be priorities.

Q34.

Building a secure and resilient nation

Planning adaptation actions to minimise the impact of future climate hazards/disasters is needed to build a secure and resilient nation. To do this we need to know what changes in these climate hazards we can expect and this requires a new generation of high resolution climate projections. These in turn require a new generation of supercomputing capacity along with related data and modelling infrastructure. Investments in NCI, Pawsey and ACCESS-NRI should be priorities.

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.

The need is to perform high quality climate change risk assessments and plan adaptation actions before more disasters strike. This requires the creation of high quality, high resolution climate projections that will both help us improve our understanding of these phenomena and their relationships with other aspects of the climate system, and also inform a wide cross-section of Australia's society and environment about their adaptation needs. This requires an order of magnitude increase in the compute and data capacity of our major supercomputing facilities (NCI & Pawsey), as well as the modelling infrastructure to go with it (ACCESS-NRI).

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.

NCI, Pawsey, ACCESS-NRI, TERN

Q39.
3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

- [ ] 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.