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

Continent-scale atmospheric composition measurements, consisting of but not limited to reactive and non-reactive climate-relevant gases, and aerosols and dust, are needed to inform and test the next generation of climate and environmental models, and to verify and refine policy settings. These measurements are needed to extend the baseline measurements obtained at facilities such as the Cape Grim Baseline Air Pollution Station, and the Marine National Facility RV Investigator, to span the continent and surrounding oceanic environments, including to the coast of Antarctica. The current facilities provide only a relatively small sample in space and time of the physical regions relevant to Australia's national environmental and economic interests. Modest investment over a decade should establish new fixed and mobile atmospheric composition measurements facilities. The new infrastructure would finally provide Australia with a comprehensive and self-contained means of assessing climate changes and influences in the national interest (not currently available at the needed scale), and provide resilience in the face of global political change and upheaval (needed to cope with future changes in the definition of NRI). The datasets produced by the added infrastructure will fit naturally with interdisciplinary environmental and policy research, including emissions verification, understanding the complexities of the natural environment, and development and testing of Earth-system models.

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

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Q33.

Protecting and restoring Australia’s environment

Australia's greenhouse gas emissions are estimated using a relatively small set of observational data at the emission sources. Errors in estimating the emissions can have a profound effect on the cost of meeting emissions targets. Further coordinated national infrastructure is required to measure and assess national greenhouse emissions and their continent-scale environmental effects. Current global political change and upheaval associated with our long-term ally the United States threatens to leave Australia with diminished ability to appropriately assess and model future environmental change. Strengthening of national environmental measurements facilities is needed to provide resilience to the potential future withdrawal of external collaborations and global economic downturn.

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.

New infrastructure is needed to adequately assess continent-scale atmospheric changes relevant to the environment, human health and national interests in water and food security. The priority needed infrastructure includes 1. A long-term fixed site in the western tropical region (e.g. an upgrade to previous facilities used by BoM at Gunn Point, Darwin, or a new site in Western Australia) to monitor pollutants from the northern hemisphere and to assist in verifying Australia's greenhouse emissions; 2. Upgrade of Australia's icebreaker RSV Nuyina to conduct long-term atmospheric measurements over the Southern Ocean, to monitor change relevant to the health of the Southern Ocean relevant to the climate, water and food security of Australia (as outlined in the Australian Antarctic Science Decadal Strategy 2025-2035 https://www.antarctica.gov.au/site/assets/files/70227/australian_antarctic_science_decadal_strategy_2025-2035.pdf). Both of these facilities should be established within 5 years. The scale and type of infrastructure is beyond the scope of an individual research group or institute to fund and maintain, and requires coordination across government, research units and industry to successfully achieve.

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.

This question was not displayed to the respondent.

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

This question was not displayed to the respondent.

Q40.
3.4 If you answered no, please indicate your (one or more) primary reasons:

- [ ] I did not know about it
- [x] Other facilities suit my needs better
- [ ] I would like to, but cannot get access due to geographical location
- [ ] I would like to, but believed that access was only available to academic researchers
- [ ] I am not aware of any capability that meets my needs
- [ ] Other (please specify)

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.