

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

NA

Q22.

Food and Beverage

NA

**Q23.
Medical Products**

NA

**Q24.
Defence**

NA

**Q25.
Recycling and Clean Energy**

NA

**Q26.
Space**

Na

**Q27.
Environment and Climate**

There is substantially more carbon stored in soils than in plant life and the atmosphere combined. However, the carbon in soils is vulnerable to climate and land use change. Monitoring of fluxes (or transport) of carbon from the land surface allows us to improve earth system models which predict future atmospheric GHG concentrations and how earth processes (like climate, plant growth, etc) change. TERN is currently provided some budget for GHG monitoring, the data from which contribute to GHG modelling from natural and agricultural systems. These typically are micrometeorological stations with atmospheric chemistry sensors, soil sensors, groundwater sensors, etc. This infrastructure coupled with remote sensing using drones and satellite imagery allows us to monitor land surface fluxes. The number of stations and distribution does not currently provide sufficient data across space to provide accurate predictions of GHG fluxes. All plans for national infrastructure in this space warrant gathering experts to collectively identify those ecosystems and agricultural systems that are underrepresented or are predicted to experience substantial change in the future. Additionally, existing stations should be suitably funded to ensure data are collected to a high standard. Sufficient funding should be provided for this purpose via TERN to ensure monitoring is carried out to a high standard. Coordinated monitoring efforts will ensure that accurate modelling of these systems is implemented.

Q28.

Frontier Technologies and Modern Manufacturing

NA

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 is home to a diverse array of ecosystems and agricultural systems. These need to be closely monitored for carbon stocks and greenhouse gas emissions. Optimizing management strategies for these systems using data-driven models will reduce greenhouse gas emissions and in some cases, may increase land surface uptake of greenhouse gases. Infrastructure needed to carry this out: TERN eddy covariance flux towers for land surface greenhouse gas monitoring Airborne greenhouse gas monitoring using novel methods (sensors on planes, drones, satellites) This becomes all more important as foreign governments are actively defunding important infrastructure such as satellites and meteorological stations which are used by agencies in Australia.

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.

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:

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.