

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

High tech mass spectrometers and overall analytical facilities need to be maintained and renewed on a 10 year basis. There is a growing unbalance between the West coast (highly equipped) and the East coast (where a large majority of the researcher work). Sample preparation facilities (mineral separation, thin sections polishing) are disappearing and are unmanned which is becoming problematic.

Q22.

Food and Beverage

Q23.

Medical Products

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability.

Q24.

Defence

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability.

Q25.

Recycling and Clean Energy

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability. Sample preparation facilities would also be used by researchers in this area

Q26.

Space

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability.

Q27.

Environment and Climate

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability. Sample preparation facilities would also be used by researchers in this area

Q28.

Frontier Technologies and Modern Manufacturing

Note that the high-tech facilities described in the “Resources Technology and Critical Minerals Processing” section are also key infrastructures for the other research themes listed here. To enhance versatility, further (co-)investments in personnel and hardware would be necessary; however, it could be argued that the scientific and technical values would outweigh the additional investments and significantly increase sustainability. Sample preparation facilities would also be used by researchers in this area

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

see comments on “Resources Technology and Critical Minerals Processing” in previous sections

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.

Ion-beam facility on the east coast including a nano-Secondary Ion Mass Spectrometry (only available in WA) and last generation large geometry SIMS. Solid Sample preparation facilities (rock, environmental, material sciences) Laser ablation MC-ICP-MS/MS capacity - while many facilities are equipped with laser ablation systems, they all display similar characteristics (e.g., nanosecond, 193 nm). Although this configuration is the most versatile, it restricts more specialised applications, such as assessing high-purity quartz (solar panel) diamonds and CCD films... Likewise, the community tended to concentrate on a specific type of mass spectrometer from a single manufacturer. We must ensure that a certain level of diversity exists at the national scale to enable a wider range of applications.

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.

AuScope Microscopy Australia

Q39.

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

- ☐ For expertise or advice
- ☐ Access to research resources or products
- ☒ Access to equipment for research
- ☐ Access to equipment for operational reasons
- ☐ Help in translating research
- ☒ 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.