

19 December 2022

Mary O’Kane  
Chair  
Australian Universities Accord

Dear Ms O’Kane

Thank you for the opportunity for the Australian Nuclear Science and Technology Organisation (ANSTO) to comment on the priority issues within key areas outlined in the Terms of Reference for the Review of Australia’s Higher Education System.

As a publicly funded research agency (PFRA) with a legacy of nearly 70 years in various forms, ANSTO has a long history of engagement with the university sector. The Australian Nuclear Science and Technology Organisation Act 1987, which details the organisation’s roles and responsibilities, includes a directive to make arrangements with universities for the conduct of research or of other activities in matters related to its activities. Accordingly, our comments in this submission are mainly on the priority issues we see at the interface of higher education and PFRAs, such as ANSTO.

The key areas outlined in the Terms of Reference are all important for a healthy higher education ecosystem. However, recent global and national events do point towards some priorities for the higher education sector. These events and priority areas include:

- COVID-19 and its impact on sovereign capability and supply chains – in relation to the higher education sector it quickly became apparent that the reliance of the domestic higher education sector on foreign fee income and foreign students meant that when these sources were diminished the ability of universities to continue research and other collaborative activities with industry and PFRAs was also diminished. These sorts of activity are often translational in nature and potentially of high impact. Providing some form of underwriting or “insurance” for such activities would help to maintain the pipeline for **“Meeting Australia’s knowledge and skills needs, now and in the future”**.
- A growing awareness of the role of nuclear in Australia – Nuclear medicine production, nuclear waste management with the formation of the Australian Radioactive Waste Agency and the use of nuclear propulsion in submarines through the AUKUS agreement all point to the need for a nuclear-literate workforce to support Australia’s needs in coming decades. This may be viewed as a specialised subset of the need for a STEM-literate workforce and is also a driver for prioritising **“Meeting Australia’s knowledge and skills needs, now and in the future”**.
- Environment and climate change – The growing acceptance of the need for action to support net zero targets and the need for greater understanding of climate change drivers in the environment are resulting in greater demand for existing and novel research methods. ANSTO undertakes significant work in this area using nuclear science and technology to

provide key insights into environmental conditions in water and the atmosphere. Collaboration with the higher education sector is an important way that ANSTO helps in “**Delivering new knowledge, innovation and capability**”.

Particular issues in the relevant priority areas include:

- **Meeting Australia’s knowledge and skills needs, now and in the future**

The role of universities in supporting the health of the pipeline should be considered. Outreach and awareness from an early age and support for students in developing career pathways should be considered. In particular transitions from university into the workforce should be supported. This might include greater use of industry PhDs that are affordable for industry partners, work experience whilst studying and guaranteed ongoing work based on results and commitment.

National standards in STEM curriculum and pipeline development could also be considered in order to demonstrate commitment to STEM and provide consistency across the education sector.

The role of the higher education sector in qualifying and continuing to support teachers could also be expanded. Consistent national standards and ongoing development support, for instance to continue connection and relevance between what is taught and industry, might also help reaffirm the importance of STEM careers.

In “meeting Australia’s knowledge and skills needs now and in the future” all programs should have diversity and inclusion built into them. It is not enough to simply deliver a STEM or nuclear literate workforce of the future, that workforce must represent our society and its values. As an essential part of the educational pathway to industry the higher education sector should not only espouse these values and practices, it should be built around them.

- **Delivering new knowledge, innovation and capability**

Nuclear science and technology relies on new knowledge, innovation and capability. For a PFRA such as ANSTO to be effective, strong links to the higher education sector are essential. The benefits are mutual with ANSTO and universities collaborating in new research and the use by universities of ANSTO research infrastructure. ANSTO (and other PFRAs) are also an important source of employment and continuing research for students. These connections support the translation of knowledge into practice. To strengthen this connection more schemes, such as industry PhDs, could be considered.

We look forward to the discussion paper and are happy to be contacted to elaborate on the areas pursued in more detail as the review progresses.

Regards,



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Nuclear Science and Technology