Australian Government

ANSTO

Department of Education, Skills and Employment - National Priorities and Industry Linkage Fund

ANSTO submission to the consultation paper

October 2020

About ANSTO

The Australian Nuclear Science and Technology Organisation (ANSTO) is responsible for the operation and management of Australia's landmark nuclear infrastructure and research facilities across its three campuses (Lucas Heights and Camperdown in Sydney, and Clayton in Victoria). These facilities include the Open Pool Australian Light-water (OPAL) Multi-purpose Reactor, the Australian Centre for Neutron Scattering, the Centre for Accelerator Science, the National Deuteration Facility, the National Research Cyclotron, and the Australian Synchrotron.

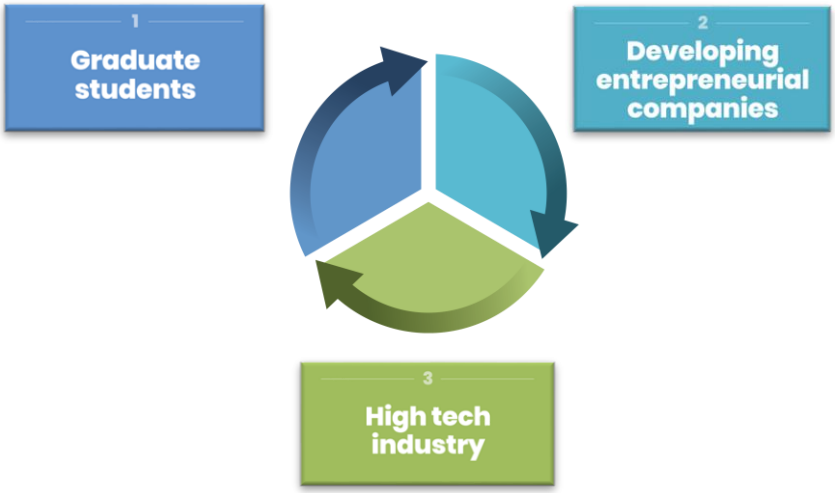
The Organisation is mandated under the *Australian Nuclear Science and Technology Organisation Act 1987* (Cth) to facilitate the use of these facilities for or by the academic, research, and scientific communities, as well as for or by government agencies and commercial clients.

The ANSTO Innovation Precinct

ANSTO is growing an Innovation Precinct at its campus in Southern Sydney to drive Australian innovation through collaboration between science and business.

Situated alongside Australia's centre of nuclear capabilities and expertise, the Precinct co-locates knowledge-intensive businesses; high-tech industry; STEMM graduates from Australian universities; and scientific partners.

The key components of ANSTO's Innovation Precinct are:



Input to the National Priorities and Industry Linkage Fund consultation process

ANSTO's commitment to developing industry-ready graduates through an industry-focused Graduate Institute within the Innovation Precinct makes the organisation well-placed to comment on consultation question 15 – existing practice: "Does your business or university have good examples of work-integrated learning, or partnerships, which can be used as exemplars?"

ANSTO's Graduate Institute

The Graduate Institute is positioned to become a global centre of excellence, developing and nurturing the next generation of Australian nuclear scientists and engineers. It offers a unique value proposition both domestically and internationally by providing some of the brightest emerging minds with a 'development turbo-charge'. Specifically, students and early career researchers have the opportunity to work under the guidance of some of Australia's current leading scientists and researchers, and are given access to ANSTO's world-class research infrastructure and industry partners.

The Graduate Institute connects academic, applied research and industry sectors in a way that will provide real-world and first-hand experiences to students and early career researchers as working scientists. Importantly, there is a strong emphasis placed on industry translation throughout the student engagement.

Members of the Institute are provided with coaching, tools and guidance to develop their entrepreneurial capabilities across a range of areas, including:

- Developing robust business models;
- Optimising supply chain;
- Securing funding and financial management;
- Developing marketing and leadership skills; and
- Protecting intellectual property.

Through the Graduate Institute, members are also directly exposed to industry partners, including those involved with ANSTO's deep technology incubator, nandin.

ANSTO is not a university, and as such cannot confer degrees. For this reason, the Graduate Institute employs a partnership model to ensure principal supervision of students occurs through a registered education provider, with day-to-day supervision provided by ANSTO researchers.

Graduate Institute student profile – Amy Macintosh

Amy is undertaking a combined Masters and PhD in Environmental Toxicology at Macquarie University. As a member of the Graduate Institute and recipient of one of the inaugural Industry Foundation scholarships, she is co-supervised by ANSTO researcher, Dr Tom Cresswell.

Amy's research, which is supported by corporate partner BHP, focuses on understanding the impact of the petroleum industry on Australian marine life. Specifically, when an offshore oil rig closes down, the pipelines can contain naturally occurring radioactive materials which can leach into the ocean. The goal of Amy's research is to develop an ecology and environmental framework for rig closures that better protects the ocean and marine life, which could have implications for offshore rigs around the world.

This will be a first for assessing the vulnerability and toxicity responses of Australian marine fauna to short and long-term exposure from marine pipeline scale waste (containing naturally occurring radioactive materials). By integrating environmental radiation dose modelling and organism-contaminant assays, this research will develop an Australian-specific assessment framework that has the potential to be showcased to other nations with major offshore petroleum sectors.