Australian Government

ANSTO
Science. Ingenuity. Sustainability.

Annual Report

2021 – 2022

Contents

Section 1:

Introduction

Letter of Transmittal

11 October 2022

The Hon Ed Husic MP
Minister for Industry and Science
Parliament House
CANBERRA ACT 2601

I am pleased to present the Annual Report of the Australian Nuclear Science and Technology Organisation (ANSTO) for the period 1 July 2021 to 30 June 2022.

This report has been prepared in accordance with the requirements of the *Australian Nuclear Science and Technology Organisation Act 1987* (Cth) ('ANSTO Act') and section 46 of the *Public Governance, Performance and Accountability Act 2013* (Cth) ('PGPA Act').

This report has been approved for presentation to you by a resolution of the ANSTO Board of Directors on 23 September 2022.

Yours Sincerely

The Hon Dr Annabelle Bennett AC SC FAA

Chair's opening statement

Australia faced yet another difficult year, with the COVID-19 pandemic causing extended lockdowns and challenging the way we all live and work. Yet, as we shift our focus to Australia's future, nuclear science is at the helm. Through our innovative and exceptional people, ANSTO demonstrates world-class capabilities that continue to deliver positive, lasting outcomes for the benefit of all Australians across a range of activities that affect so many aspects of our lives and address many of the problems that we face.

One such area is that of nuclear medicines. It is no small feat to manage the complex logistics involved in the production and delivery of nuclear medicines. I am extremely proud of ANSTO's people who continued to ensure the supply of life-saving medicines throughout the COVID-19 pandemic.

In 2021, the Australian Government announced a $30 million investment to design a new world-leading nuclear medicine manufacturing facility at ANSTO's Lucas Heights campus to replace an ageing facility, Building 23, where nuclear medicine products are assembled, tested and distributed. ANSTO will continue to work with the government to design the newer, more advanced replacement manufacturing facility, which will secure Australia's sovereign supply capability of nuclear medicines for future generations.

Another area of ANSTO's contribution relates to the new trilateral security partnership between Australia, the United Kingdom and the United States (AUKUS), which is a historically significant development for nuclear science and technology in Australia. As Australia's trusted nuclear advisor, ANSTO will continue to provide its significant nuclear science and technology capabilities to support the objectives of AUKUS, including through our role in planning for the delivery of nuclear-powered submarines.

I would like to thank my fellow Board Directors for their unwavering dedication, commitment, and ongoing contributions to ANSTO's operations and financial sustainability through the COVID-19 pandemic.

I also would like to take the opportunity to thank our people for their adaptability and determination in delivering continued excellence. Their work during times of great adversity continues to deliver great outcomes for Australia.

The Hon Dr
Annabelle Bennett AC SC FAA
Board Chair

Message from the Chief Executive Officer

Over the past year, I have been immensely proud of ANSTO for the support it has provided to industry and government in tackling Australia's health and security challenges. I look forward to ANSTO continuing to deliver beneficial outcomes for Australia.

Signed in 2021, the AUKUS trilateral security partnership is historically significant for Australia and the country's nuclear industry. ANSTO, as the safe and reliable manager of Australia's nuclear facilities, is lending its expertise to assist the Department of Defence in planning for the delivery of nuclear-powered submarines and other technologies. As Australia's nuclear stewards, we will continue to collaborate with government agencies and counterparts in the United States and United Kingdom.

The COVID-19 pandemic has highlighted the challenges Australia faces within the healthcare sector. ANSTO is committed to supplying nuclear medicines to Australia, supporting the timely diagnosis and treatment of a range of diseases. To enable the continued delivery of nuclear medicines, the Australian Government announced $30 million to design a new world-leading nuclear medicine manufacturing facility at ANSTO's Lucas Height's campus to replace an ageing facility.

In addition to our delivery of nuclear medicines, ANSTO has extensive experience in manufacturing and delivering radiopharmaceutical diagnostics, therapies, and medical devices. ANSTO has a long-standing relationship with OncoBeta® GmbH, a commercial-stage medical device company, as the company's manufacturing partner. This partnership will produce an innovative therapy for non-melanoma skin cancers for Australian patients, and will enable us to continue delivering on our core mission of improving the health of Australians and supporting industry.

Through the production of nuclear medicines, ANSTO generates low- and intermediate-level radioactive waste. Our ground-breaking Synroc technology is a cost-effective, low-risk solution for the management of this waste. This year, ANSTO reached the practical completion of its new SyMo (Synroc for Molybdenum) building, which will house the Synroc processing technology that will treat the liquid intermediate-level waste (ILW) stream from ANSTO's molybdenum-99 production. We look forward to implementing this world-first technology to revolutionise the way nuclear waste is processed and disposed.

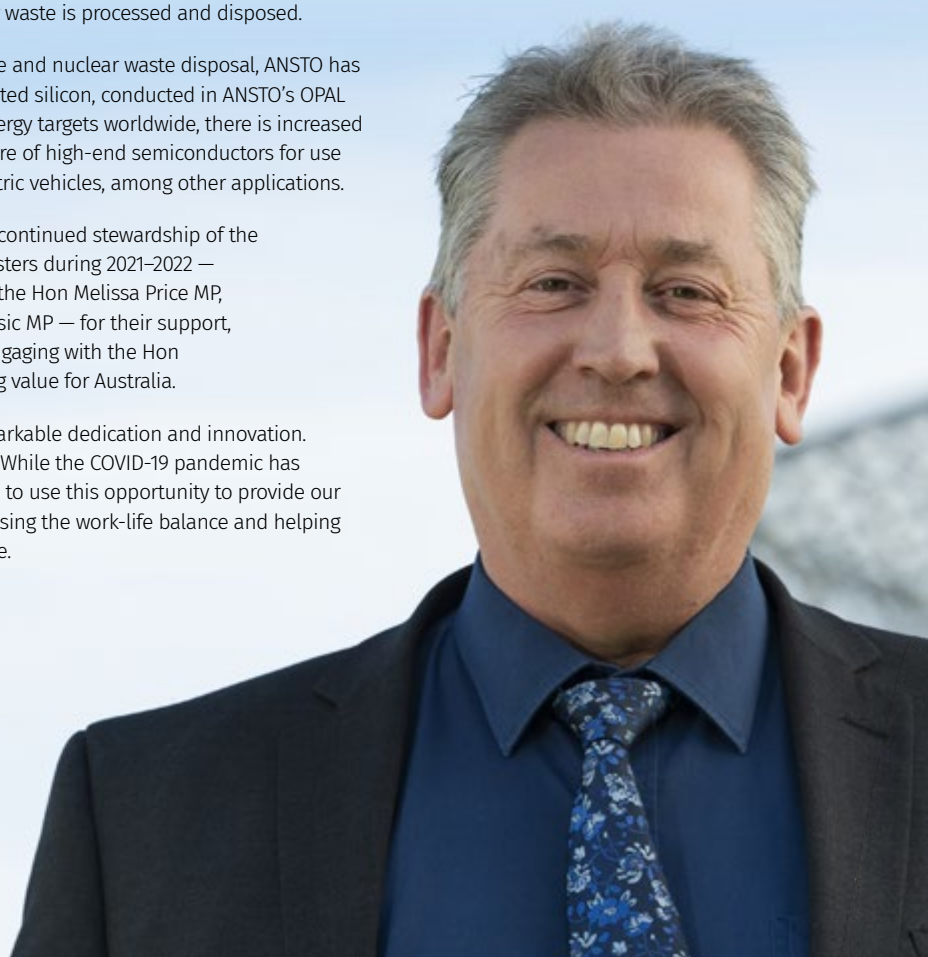
In addition to our work with regard to nuclear medicine and nuclear waste disposal, ANSTO has over 50 per cent of the world's market share for irradiated silicon, conducted in ANSTO's OPAL multi-purpose reactor. With increases in renewable energy targets worldwide, there is increased demand for irradiated silicon to enable the manufacture of high-end semiconductors for use in renewable energy generation technologies and electric vehicles, among other applications.

I would like to sincerely thank the ANSTO Board for its continued stewardship of the organisation. I wish to also thank our responsible Ministers during 2021–2022 — the Hon Christian Porter MP, the Hon Angus Taylor MP, the Hon Melissa Price MP, Senator the Hon Jonathon Duniam and the Hon Ed Husic MP — for their support, advocacy and engagement. I look forward to further engaging with the Hon Ed Husic MP and the Australian Government in creating value for Australia.

I would also like to commend our people on their remarkable dedication and innovation. They are the foundation of ANSTO's accomplishments. While the COVID-19 pandemic has presented numerous challenges, ANSTO has been able to use this opportunity to provide our people with flexible working conditions, thereby increasing the work-life balance and helping to create a dynamic and diverse workforce of the future.

Shaun Jenkinson

Chief Executive Officer



Section 2:

About ANSTO

Our Annual Report

This Annual Report provides a summary of our activities and performance for the financial year ending 30 June 2022 against the performance measures in our 2021-2022 Corporate Plan and Portfolio Budget Statements.

Vision

To be a global nuclear science, research and engineering partner of choice with a reputation for tackling complex problems and delivering outcomes to benefit Australia and support a sustainable world.

What we do

As Australia's sovereign nuclear organisation, ANSTO is actively working to address some of the most challenging issues facing Australia today. ANSTO produces nuclear medicines to improve the health of the Australian community and plays a vital role as an adviser to the Australian Government, industry and education sectors, as well as the broader community on nuclear science and technology.

As the operator of Australia's only nuclear reactor — the OPAL multi-purpose reactor — we address key scientific questions in the nuclear fuel cycle. We are Australia's knowledge centre for current and emerging nuclear technologies. The work of ANSTO directly provides benefits to the country in terms of economic performance, health outcomes, careers in Science, Technology, Engineering and Mathematics (STEM) disciplines, and translational research with real national benefit.

ANSTO activities span manufacturing, research and advisory functions linked to our mandate including:

Nuclear medicine production and human health research:

ANSTO produces 80 per cent of Australia's nuclear medicines used for the diagnosis, staging and treatment of diseases, including cancer. ANSTO also conducts and supports research into human health, including emerging nuclear medicine diagnostic and therapeutic products. ANSTO's production of nuclear medicines provides a platform for secure sovereign control of these critical health products.

Defence and national security:

ANSTO provides advice to government on the application of nuclear technology, including regarding the acquisition of nuclear-powered submarines as part of the AUKUS trilateral security partnership. ANSTO assists the defence and national security industries by providing access to a unique combination of scientific infrastructure and expertise in materials engineering and advanced manufacturing. ANSTO also supports teams working with radiation so they are able to operate safely using advanced imaging solutions through the provision of relevant training programs and nuclear waste consultancy services.

Advanced manufacturing and support for the resources sector:

ANSTO contributes to advanced manufacturing both internationally and within Australia, through ground-breaking materials research for extreme operating conditions in space and the oceans, as well as finding ongoing solutions for energy generation and storage. ANSTO supplies over 50 per cent of the world's requirements of irradiated silicon for use in high-speed trains and in the automobile sector, including electric and hybrid vehicles. In addition, ANSTO plays a key role in support of Australia's critical minerals industry, which is aimed at ensuring greater self-reliance and the diversity of international supply of critical minerals.

Research infrastructure and scientific support capabilities:

ANSTO's research infrastructure comprises a capital investment of more than AU $1 billion, provision of more than 350 researchers and instrument scientists, and an extensive array of facilities that support more than 8,000 users from universities, research institutions, and industry from around Australia and the world. This large portfolio positions ANSTO at the forefront of translational research and innovation for the benefit of public health, industry and the environment.

As an industry partner, some of our business capabilities include: detection and imaging of radiation, minerals and radiation protection consulting, irradiation services, environmental monitoring and training. The ANSTO Innovation Precinct in Southern Sydney is the home of the *nandin* Innovation Centre, where business leaders and entrepreneurs collaborate to bring science, technology and industry together as part of a growing innovation community. *nandin* has over 30 start-ups that are connected to ANSTO's leading research talent, including industry-focused graduates, seeking to develop the next generation of thinking that will support our industries into the future. Many of these start-ups draw on ANSTO's infrastructure and expertise, and are leading innovation in the fields of cybersecurity, artificial intelligence and space.

ANSTO's *nandin* Innovation Centre located at the Lucas Heights campus.

Values

ANSTO's values underpin our vision, purpose and strategic objectives. They are critical to how we carry out our work. They also describe how our people will engage with one another and external stakeholders. Our values extend to the way we partner with education, industry, communities and other stakeholders.

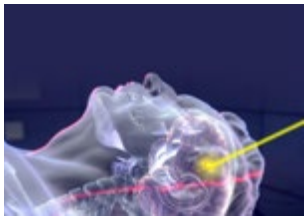
Celebrating our people

BRIGHT First Light

Project BR—GHT involves the construction of eight new beamlines at ANSTO's Australian Synchrotron. This project reached its "First Light" milestone for the new micro-computed tomography (MCT) beamline in late November 2021, when the intensely powerful beam of synchrotron light left the main ring and entered the beamline for the first time. This significant achievement comes as a result of the extraordinary efforts of many ANSTO staff and contractors who worked under multiple COVID-19-related restraints. MCT Lead Scientists **Dr Andrew Stevenson** and Project Manager **Dr Prithi Tissa** have successfully led a large technical team and external beamline advisory panel in supporting this work.

Neutron Capture Enhanced Particle Therapy (NCEPT)

ANSTO's Human Health research team is pioneering the development of a ground-breaking cancer treatment which will save Australian lives and revolutionise patient treatment, called Neutron Capture Enhanced Particle Therapy (NCEPT). NCEPT is a transformative targeted radiotherapy technique for treating cancers of poor prognosis, including brain cancers such as Diffuse Intrinsic Pontine Glioma (DIPG) and pancreatic cancer. NCEPT delivers a double blow to cancer by delivering a targeted extra radiation dose directly to tumour cells. Significantly, NCEPT achieves this while using therapeutic agents already approved for use in humans.



During May 2022, the Multi-National NCEPT Collaboration conducted the first proton NCEPT proof of concept experiments at the IBA Proton therapy facility at the Polish Institute of Nuclear Physics (IFJ-PAN), Krakow. The international team consisted of 15 physicists and engineers from ANSTO (**Associate Professor Mitra Safavi-Naeini, Dr Andrew Chacon, Dr Ryan Middleton, Mr Nicholas Howell, Dr Frederic Sierro and Ms Marissa Kiely**), IFJ-PAN (Poland) and Politecnico di Milano's RADLAB (Italy). For the first time, the team demonstrated the potential for NCEPT to provide an effective dose to tumour tissue with a reduced collateral radiation dose to off-target tissues when compared to current proton therapy protocols. The NCEPT program has now commenced animal trial tests which are expected to be completed by mid-2023, in time for commencement of the first in human clinical trials by early 2024.

INSTYTUT FIZYKI JĄDROWEJ
IM. HENRYKA NIEWODNICZAŃSKIEGO
POLSKIEJ AKADEMII NAUK

Nancy Millis Award

One of ANSTO's most accomplished scientists and internationally recognised energy researchers, **Professor Vanessa Peterson**, was awarded the Nancy Millis Medal for Women in Science by the Australian Academy of Science in March 2022. As the research leader of the Energy Materials project at ANSTO and an Honorary Professorial Fellow of the Institute for Superconducting & Electronic Materials at the University of Wollongong, Professor Peterson is the ninth recipient of this award. She receives this honour for her exceptional leadership in the characterisation of energy materials over more than a decade.

MAGNA for Research

An ANSTO Powerhouse exhibition was recognised with a prestigious Museums and Galleries National Award (MAGNA) for Research at a ceremony in Perth in 2022. The Invisible Revealed exhibition was organised in collaboration with ANSTO and the University of New South Wales. ANSTO's world-class research facilities, featuring neutron instruments at the Australian Centre for Neutron Scattering, synchrotron X-ray beams at the Australian Synchrotron, and ion beam accelerators at the Centre for Accelerator Science (CAS), provided age, material, manufacturing, and cultural insights into selected objects from the Powerhouse collection. Combined with digital visualisation techniques, the exhibition showcased discoveries made in attempting to solve the mysteries of society's material culture, ranging from Samurai swords spanning the period 1346 to 1800 and an Australian Aboriginal knife, to a pocket watch from the 19th century, among other artefacts. **Dr Joseph Bevitt, Dr Anton Maksimento and Dr Daniel Hausermann** coordinated the tomographic imaging on the Dingo instrument at the Australian Centre for Neutron Scattering and the Imaging and Medical beamline at the Australian Synchrotron.

MAGNA
MUSEUMS AND GALLERIES NATIONAL AWARDS

Seafood Industry Award

ANSTO's Seafood Provenance team has received the Research, Development and Extension Award 2022 from the New South Wales seafood industry (hosted by the Sydney Fish Market) for the development of an innovative approach using nuclear techniques to determine the origins of seafood. The award was announced at a ceremony held in May 2022 at an event that the seafood provenance team, led by **Dr Debashish Mazumder** and Environmental research leader **Dr Karina Meredith**, attended. The research team includes doctoral candidate **Karthik Gopi, Patricia Gadd, Dr Jasmin Martino, Dr Jagoda Crawford, Dr Armand Atanacio**, Associate Professor Jesmond Sammut (University of New South Wales), Professor Neil Saintilan (Macquarie University), Erik Poole (Sydney Fish Market), and former Honours student Dita Malo, with contributions from the National Measurement Institute. Samples were provided by the Sydney Fish Market and the NSW Department of Fisheries.

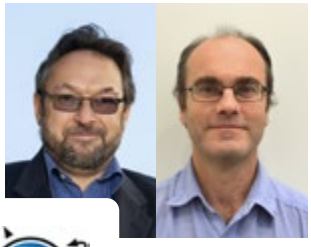
Anna Paradowska

Professor Anna Paradowska, Instrument Scientist for Kowari at ANSTO, was awarded the University of Sydney Faculty of Engineering Dean's award for Mid-Career Researcher Research Leadership, which is accompanied by $10,000 for research funding. The focus of her research activities is on residual-stress analysis using neutron and synchrotron X-ray diffraction, with the goal of improving manufacturing procedures and integrity requirements for various engineering components. Professor Paradowska is also Conjoint Professor in Advanced Structure Materials at the University of Sydney and Industrial Engagement Manager at the Australian Centre for Neutron Scattering (ACNS), where her role is to promote the use of ACNS facilities for applied industrial research and to manage technology transfer.

THE UNIVERSITY OF SYDNEY

ANBUG Awards

Dr Norman Booth and Dr Elliot Gilbert were recipients of Australian Neutron Beam User Group Neutron (ANBUG) Awards. Dr Gilbert is an ACNS Instrument Scientist for Quokka (Small-Angle Neutron Scattering), as well as the lead for Food Materials Science. He received the Neutron Award for developing a new research program, Neutrons & Food, and for significant contributions through his leadership role in designing, constructing and commissioning Quokka & Outreach. Dr Booth, from the Sample Environment team, received the Technical Award for consistently providing advice to peers and managers on the feasibility, safety and compatibility of materials. The appreciation of the user community is evidenced by the significant number of publications crediting or acknowledging Dr Booth.



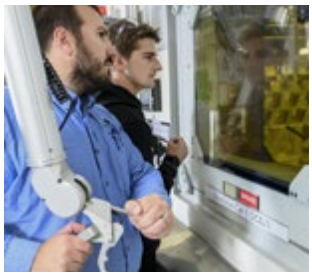
ANBUG
AUSTRALIAN NEUTRON BEAM USERS GROUP

L-R:
Dr Elliot Gilbert and
Dr Norman Booth

Key highlights in 2021–2022

Safeguarding Australia's nuclear medicine supply throughout COVID-19

On average, ANSTO's radioisotopes provide 10,000-12,000 nuclear medicine procedures that benefit Australians each week*. When faced with global supply chain issues due to COVID-19, ANSTO pivoted and collaborated with the local and international partners to mitigate any impact on nuclear medicine access to Australian patients.



To ensure the safe, secure and sustainable supply of nuclear medicine, ANSTO sourced international products when possible, carefully planning around flight reductions and utilised road freight options to deliver products around the country. Additionally, chartered flights were arranged to provide life-saving children's cancer treatments to patients.

ANSTO works closely with the Australian and global nuclear medicine community to maintain the best possible patient access to nuclear medicine in our country. Throughout COVID-19, we partnered with the Australian nuclear medicine community to prioritise deliveries in line with metropolitan and regional requirements. Together we achieved a sustainable nuclear medicine supply through an unprecedented global supply chain disruption.

*based on published Medicare statistics combined with non-MBS data sourced from the nuclear medicine community

http://medicarestatistics.humanservices.gov.au/statistics/mbs_group.jsp

Support for the future of Nuclear Medicine Production

ANSTO welcomes the $116.7 million AUD of additional funding over the forward estimates (next four years) announced in the 2021-22 Budget to support the agency in undertaking capital maintenance and waste management. This is inclusive of a $30 million funding injection to ANSTO for the design of a new nuclear medicine manufacturing facility. The current facility, built in the 1950s, has been modified over the years to enable continuation of supply. Government funding support for ongoing maintenance has ensured its continued operation. The project to design a new facility is being delivered with the objective of ensuring Australians will benefit from innovation in the development of nuclear medicines to support the diagnosis and treatment of diseases for generations to come. Most Australians are estimated to benefit from these medicines at least once in their lifetime.

More information can be found at:

www.ansto.gov.au/news/a-bright-future-for-nuclear-medicine-australia
www.minister.industry.gov.au/ministers/porter/media-releases/budget-boost-manufacturing-secure-australias-recovery

AUKUS

In September 2021, the Australia-United Kingdom-United States (AUKUS) trilateral security partnership was announced. AUKUS aims to reaffirm the commitment of all partnership nations to the goal of a free and open Indo-Pacific region. This partnership will deepen defence cooperation between the three countries, with a focus on joint capability and interoperability. Initial efforts will concentrate on cyber capabilities, artificial intelligence, quantum technologies and additional undersea capabilities.

ANSTO is providing its expertise as the manager of Australia's nuclear facilities to the Nuclear-Powered Submarine Taskforce, established by the Department of Defence. The aim of the Taskforce is to identify the optimal pathway for the delivery of a nuclear-powered submarine capability for Australia and will involve working with the United Kingdom and United States in intensively examining the requirements that underpin nuclear stewardship. A specific focus, utilising ANSTO's expertise, is on safety, knowledge, operation, maintenance, stewardship and environment protection.

More information can be found at:

https://www.ansto.gov.au/news/ansto-looks-forward-to-lending-its-significant-nuclear-science-and-technology-capabilities
https://www.defence.gov.au/about/taskforces/nuclear-powered-submarine-task-force

Section 3:

Our purpose and strategic imperatives

Our purpose

ANSTO's purpose comprises the following core functions, as provided by the *Australian Nuclear Science and Technology Organisation Act 1987* (Cth) (ANSTO Act):

- conduct research and development in relation to nuclear science and technology
- produce and use radioisotopes, isotopic techniques and nuclear radiation for medicine, science, industry, commerce and agriculture
- encourage and facilitate the application and use of the results from research and development
- manage radioactive materials and waste arising from various prescribed activities
- provide goods and services related to core activities
- provide advice to government and liaise with other countries on behalf of Australia in nuclear-related matters
- make available to other persons, whether or not on a commercial basis, the knowledge, expertise, equipment, facilities, resources and property of the organisation, for the purposes of scientific research, innovation and training
- publish scientific and technical reports, periodicals and papers, and provide public information and advice
- facilitate education and training in nuclear science and technology, including through granting scientific research studentships and fellowships, in cooperation with universities, professional bodies and other education and research institutions.

Our strategic imperatives

ANSTO's three strategic imperatives and two enabling objectives as captured in our 2021–2022 Corporate Plan are to:

OUR STRATEGIC IMPERATIVES

These focus our activities, ensuring they are aligned with our purpose, the priorities of Government, and the expectations of our Minister

1. Research and research infrastructure	2. Commercial products and services	3. Expert and trusted advisor
To conduct research and enable external use of our research capability and infrastructure for the national benefit	**To provide nuclear medicines and commercial services for the benefit of Australia and the world**	**To be an expert and trusted advisor to Government, industry, international partners and the Australian public**
Deliver and translate research that has scientific and industry impact, with a focus on health, the environment and the nuclear fuel cycle	*Ensure the reliable and sustainable supply of nuclear medicines, products and services*	*Deliver expert advice to Local, State, and Federal Governments and related stakeholders in support of organisational and national interests*
Form strategic partnerships and collaborations to leverage more effective, research outcomes for Australia and the world	*Develop and produce new radioisotopes through working collaboratively with partners using our nuclear-related expertise*	*Participate in global and regional nuclear discussions to ensure that Australia remains a leader in the applications of nuclear science and technology*
Operate world-class research infrastructure, and leverage capabilities to support translational research that delivers real-life benefits and impact	*Use knowledge incubation, research translation, collaboration and connectivity within the Innovation Precinct to produce real-world benefits*	*Grow a more informed generation of Australians who understand the benefits of nuclear science and technology*

OUR ENABLING OBJECTIVES

These are vital in delivering our Strategic Imperatives

To mobilise and develop the nuclear science and technology workforce of the future	To ensure the ongoing financial and operational sustainability of ANSTO
Train and develop the next generation of specialised nuclear professionals	*Ensure a highly reliable, safe and secure environment*
Provide an inclusive environment that empowers our people and supports a culture of collaboration and engagement	*Ensure ANSTO operates sustainably*

ANSTO's 2021–2022 Corporate Plan is the enabling document for the organisation to achieve its purpose and implement its strategic objectives and vision. The plan, approved by the Board, presents ANSTO's strategy and is a public document available here: www.ansto.gov.au/corporate-plan

Section 4:

Annual Performance Statement

Introductory statement

We, the ANSTO Board, as the accountable authority of ANSTO, present the 2021–2022 Annual Performance Statements of ANSTO, as required under paragraph 39(1)(a) of the *Public Governance, Performance and Accountability Act 2013* (Cth) (PGPA Act). In our opinion, these Annual Performance Statements are based on properly maintained records. They accurately reflect the performance of ANSTO and comply with subsection 39(2) of the PGPA Act.

Summary of performance

Strategic imperative	Performance criterion	Measure and target	Result (2021–2022)	
1. Research and research infrastructure	*Deliver and translate research that has a scientific and industrial impact, with a focus on health, the environment and the nuclear fuel cycle*	**Eight case studies per annum** demonstrating the impact of our research	ACHIEVED	✔
		>600 ANSTO only total publications	ACHIEVED **612**	✔
		$5M external revenue from research and research services	ACHIEVED **$6.904** M	✔
	Form strategic partnerships and collaborations to leverage more effective research outcomes for Australia and the world	**≥95% publications undertaken with national and international collaborators**	ACHIEVED **97**%	✔
	Operate world-class research infrastructure, and leverage capabilities to support translational research that delivers real-life benefits and impact	**290 OPAL days at power**	ACHIEVED **300** days	✔
		95% Utilisation Australian Synchrotron	ACHIEVED **97**%	✔
		85% Utilisation Australian Centre for Neutron Scattering	NOT ACHIEVED **84**%	✖
		65% Utilisation Centre for Accelerator Science	ACHIEVED **78**%	✔
		90% Utilisation National Deuteration Facility	ACHIEVED **100**%	✔
		90% User Satisfaction (NPS)	ACHIEVED **93**%	✔
2. Commercial products and services	*Ensure the reliable and sustainable supply of nuclear medicines, products and services*	**≥95% ANM (Mo-99) DIFOT**	ACHIEVED **95**%	✔
		≥95% ANSTO Nuclear Medicine Production Facility DIFOT	NOT ACHIEVED **94**%	✖
		≥95% NTD Silicon DIFOT	NOT ACHIEVED **85.3**%	✖
	Use knowledge incubation, research translation and collaboration within the Innovation Precinct to produce real-world benefits	**10 new jobs supported each year** within the Innovation Precinct[1]	ACHIEVED **355**	✔

1. Performance criterion has changed, see analysis section on page 31 for further information.

Strategic imperative	Performance criterion	Measure and target	Result (2021–2022)	
3. Expert and trusted advisor	*Deliver expert advice to local, state and federal governments and related stakeholders to support the national interest*	**75% Australian Government stakeholder satisfaction** — federal, state and local government	ACHIEVED **90.5**%	✔
		≥ Four case studies to highlight and assess the impact of our engagement with government-related stakeholders	ACHIEVED	✔
	Participate in global and regional nuclear discussions to ensure that Australia remains a leader in the applications of nuclear science and technology	**RCA —** Participation in **80% of active projects,** Leading **≥1 project**	ACHIEVED **98**% | **3** Projects	✔
		IAEA CRP — Participation in **≥10 projects relevant to nuclear applications**	ACHIEVED **41** Projects	✔
		≥ Two case studies per annum to highlight and assess the impact of our engagement with international stakeholders	ACHIEVED	✔
	Grow a more informed generation of Australians who understand the benefits of nuclear science and technology	**≥ 36 science stories published** on the ANSTO website per annum	ACHIEVED **77**	✔
		Deliver ≥ six national programs per annum	ACHIEVED **9**	✔
		Increase accessibility of STEM teacher training programs	ACHIEVED **713** Teachers nationally	✔
		≥15,000 visitors to ANSTO's campuses per annum	NOT ACHIEVED **5,054**	✖

Enabling objective	Performance criterion	Measure and target	Result (2021–2022)	
1. To mobilise and develop the nuclear science and technology workforce of the future	*Provide an inclusive environment that empowers our people and supports a collaborative culture of collaboration and engagement*	**Leadership team —** Male **40%** | Female **40%** | Discretionary **20%**	NOT ACHIEVED Male **62.5**% Female **37.5**%	✖
		ANSTO-wide — Male **40%** | Female **40%** | Discretionary **20%**	NOT ACHIEVED Male **68.3**% Female **31.7**%	✖
	Train and develop the next generation of specialised nuclear professionals	**120 postgraduates supervised**	ACHIEVED **164**	✔
2. To ensure the ongoing financial and operational sustainability of ANSTO	*Ensure a highly reliable, safe and secure environment*	**Increased opportunities for improvement (OFI) to actual incidents recorded**	ACHIEVED **6:10**	✔
		Year-on-year decrease in Class 1, 2 & 3 incidents	ACHIEVED **4**	✔
	Ensure ANSTO operates sustainably	**95% on-time completion** (OT) of critical site maintenance	ACHIEVED **99**%	✔

STRATEGIC OBJECTIVE 1:

To conduct research and enable external use of our research capability and infrastructure for the national benefit

Deliver and translate research that has a scientific and industrial impact, with a focus on health, the environment and the nuclear fuel cycle

Performance criterion	Measure	Result (2021–2022)
Case studies demonstrating the impact of research	**Eight case studies** per reporting period	**ACHIEVED** **8** case studies ✔
Total publications*	**>600**	**ACHIEVED** **612** ✔
External revenue from research and research services**	**$5M**	**ACHIEVED** **$6.904M** ✔

* ANSTO only, ANSTO with national co-authors, ANSTO with international co-authors, ANSTO with both national and international co-authors
** Excluding National Collaborative Research Infrastructure Strategy (NCRIS) grants

Analysis of performance

Total publications

In 2021–2022, a total of 612 publications were recorded, despite ANSTO staff facing a number of challenges related to the COVID-19 pandemic. This is a similar result to that of the previous financial year, which implies the maintenance of productivity during extended lockdowns in the jurisdictions where ANSTO operates. Digital technologies such as webinars and online conferencing platforms were utilised to facilitate collaboration safely and effectively.

External revenue from research and research services

These outstanding results are attributed to strong stakeholder engagement, which endows ANSTO with the agility to adapt to a dynamic environment and begin ANSTO's return to business as usual. Additionally, more grant revenue was received than was expected, mainly from the National Space Qualification Network, the Department of Agriculture, Fisheries and Forestry (formerly the Department of Agriculture, Water and the Environment), the Supporting Australian Innovation for Asia initiative, Neutron Capture Enhanced Particle Therapy (NCEPT), and Foundation for Australia-Japan Studies (FAJS). Prior to this financial year, this level of grant funding had not been attained.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

Five-year R&D strategy for successful innovation in health

Corporate Plan 2021-2022 planned progress:

Implementation

This strategy focuses on delivering improved health outcomes for all Australians through the effective application of radioisotopes and related technologies, including radiopharmaceuticals. We will continue to use our sovereign capabilities in radioisotope and radiopharmaceutical development for the benefit and growth of nuclear medicine treatment and translational medical research.

During 2021–2022, a detailed strategy was developed, which incorporates key stakeholder and team inputs. This strategy focuses on three key areas:

1. optimising our radioisotope and radiopharmaceutical portfolio through a combination of the development of new products, optimising existing in-sourced products, and providing capabilities to third parties that enable commercialisation of new products
2. maximising ANSTO's portfolio value by:
   (a) managing our ideas and projects across short-, medium- and long-term horizons; and
   (b) balancing in-house product innovation and provision of our capabilities to external parties
3. minimising time-to-value realisation and supporting rapid uptake of products and services through engagement with practitioners from key parts of the value chain.

Implementation success during the year included progress towards:

- the establishment of a radiopharmaceutical facility capable of producing alpha-emitting targeted radiotherapies
- the scale-up manufacturing of an emerging radionuclide, terbium-161, with the intention of producing single patient doses in future for the treatment of prostate cancer
- the development of an advisory group comprised of ANSTO Biosciences, Business Development and Nuclear Medicine staff to inform future directions.

Current Research Information System and Portal (CRISP) project

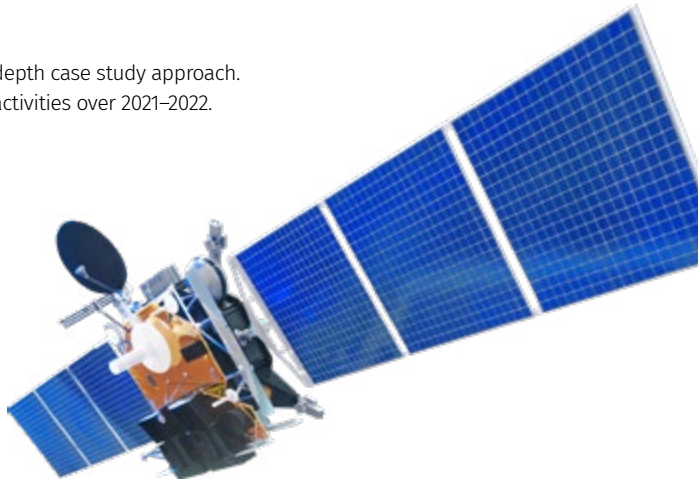
Corporate Plan 2021-2022 planned progress:

Preparation Implementation

The CRISP project will provide our organisation with best practice integrated software tools and analytics to more effectively manage information and data related to all aspects of our research activities. Outcomes from the project will include improved reporting and analytics, and improved support for compliance. The impact of the COVID-19 pandemic on project resourcing and overall resources across ANSTO has led to delays in delivery against overall project milestones. Further scoping is required for the systems to support user programs in 2022–23. Delivery against milestones for the research information management system is on track, with the project approaching the market in 2021–22 as planned.

Case studies

To evaluate the diverse impacts of our research activities, ANSTO utilises an in-depth case study approach. The case studies outlined below capture some of our most impactful research activities over 2021–2022.



CASE STUDY 1

High precision radiation testing for translational research of electronics in space and clinical applications

OUTCOME

ANSTO's Centre for Accelerator Science (CAS) users and collaborators have successfully developed and tested their innovative microelectronic devices. These devices use precision ion beam irradiation to mimic both space weather effects and clinical radiotherapy doses, providing performance assessments and assurance of the technologies.

IMPACT

CAS' long-term radiation testing users from the Centre for Medical Radiation Physics at the University of Wollongong have now patented their novel microdosimeter device for use in quality assurance during cancer radiation treatment. This innovation was recently selected by the European Space Agency and is currently being tested for application in space radiation monitoring and astronaut safety. A user from the University of Melbourne has also demonstrated the efficacy of their advanced electronics design against extreme radiation environments relevant to defence, space and research.

RESEARCH

Ion beam microprobes — precision targeting of the ion irradiation down to 1 micron diameter — are vital for research and development, where precise delivery of a uniform and customised radiation dose in a defined region of interest is required, for example, in testing particular subsystems on an electronic chip. This capability can be used for both testing and characterising semiconductor materials and devices with microscale accuracy, enabling the optimisation of device microstructure design or for performance testing of a prototyped device.

COLLABORATORS

The Centre for Medical Radiation Physics at the University of Wollongong, the University of Melbourne, Swinburne University of Technology, Foundation for Industrial and Technical Research (SINTEF), the Italian National Institute for Nuclear Physics, and the European Organization for Nuclear Research (CERN).

CASE STUDY 2

Decommissioning offshore oil and gas infrastructure

OUTCOME

The outcomes of this research will be used by both national and international regulators to inform the requirements of oil and gas operators during the decommissioning of offshore infrastructure, to ensure the protection of valuable marine habitats. This directly benefits Australian industry by providing a scientific basis for decommissioning planning.

IMPACT

ANSTO has developed a multi-phase approach to assessing pipeline scale (build-up) that assists operators with their plans for decommissioning offshore seabed infrastructure. This approach has the potential to create large cost-savings for both industry and government, while demonstrating environmental protection. Ongoing research in line with this project will improve ANSTO's ability to provide industry and government with advice about offshore decommissioning programs.

RESEARCH

ANSTO is investigating the potential risk of sub-sea pipeline scale contaminants (naturally occurring radioactive materials and mercury) on the marine environment. Using capabilities unique to ANSTO, including OPAL and biosciences for radioisotope development and production, the Australian Synchrotron, *in vitro* autoradiography, radioisotope tracing in marine organisms, and radiological analysis of pipeline scale, ANSTO is generating novel data on the chemical and biological fate of sub-sea pipeline contaminants with regard to Australian marine biota.

COLLABORATORS

Australian oil and gas industry partners, the Australian Institute of Marine Science (AIMS), Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Curtin University, Department of Agriculture, Water and the Environment (DAWE), Department of Industry, Science and Resources (DISR), Macquarie University, Mercury Australia, National Energy Resources Australia (NERA), National Decommissioning Research Initiative (NDRI).

CASE STUDY 3

Translating Synroc technology for the treatment of ANSTO's molybdenum-99 waste

OUTCOME

The commercialisation of Synroc presents opportunities for ANSTO to translate its Synroc technology into a solution for the lifecycle treatment of radioactive waste, as nuclear countries seek to treat their own waste streams. In addition, ANSTO's reputation will be enhanced as an international leader in the safe and sustainable treatment of nuclear waste, while the project provides Australia with capability in next-generation nuclear technology.

IMPACT

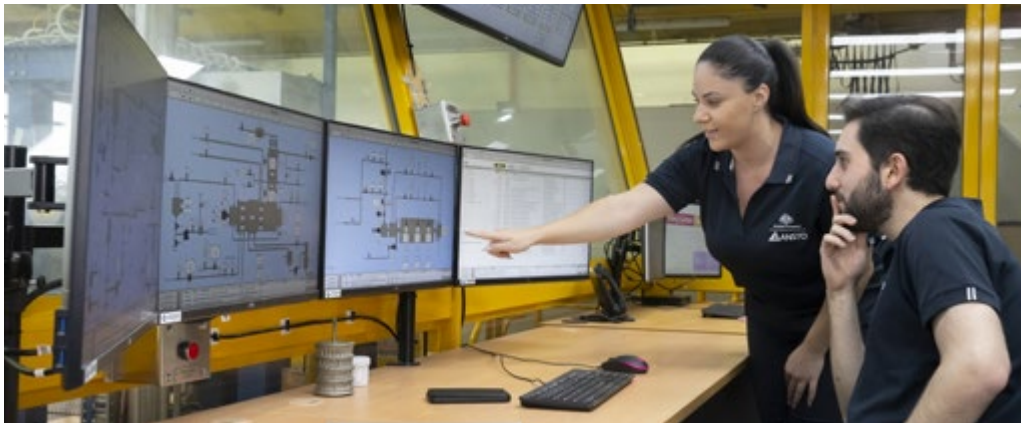
The project establishes Australia as a leader in the treatment of nuclear wastes, such as immobilising actinide radionuclides (including plutonium), radioiodine and molten salts, and provides the Australian Government with sovereign capability. Synroc technology is part of the global "new nuclear build paradigm", including for future (Generation IV) reactor technologies.

RESEARCH

ANSTO Synroc has a dedicated team focused on integrating its demonstrated knowledge in waste form design and performance with nuclear engineering capability, to provide a safe and sustainable waste treatment solution for nuclear wastes. Over the past 30 years, ANSTO's Synroc technology has been demonstrated as the preferred treatment technology for challenging waste streams, such as the disposition of high-level wastes calcines in the United States as well as plutonium stockpiles in both the United States and United Kingdom. ANSTO Synroc is currently engaged in several collaborative waste treatment programs with different international partners.

COLLABORATORS

Pacific Northwest National Laboratory and Washington State University (USA), Sheffield University and NDA (UK), Terrestrial Energy Incorporated (Canada), SCK CEN (Belgium).



CASE STUDY 4

ANSTO Research brings new insights into the complex immune response in the brain

OUTCOME

The measurement of mitochondrial translocator protein (TSPO) expression levels is one of the most useful and highly sensitive markers of stress response within the brain. By measuring a decrease in levels of TSPO in the brain following low dose irradiation (100 milligray or less), a reduction in the activation of the brain's own immune cells (microglia) and "neuroinflammation" can be inferred.

IMPACT

Adaptive responses by the brain's immune cells, such as those induced by low dose radiation, could be applied to reduce neuroinflammation, which has implications for several diseases of the brain, for example, Alzheimer's Disease and Parkinson's Disease.

RESEARCH

ANSTO Human Health researchers used TSPO as a marker to assess radiation effects at low doses; doses where there is no easily identifiable tissue damage. This has led to speculation that the reduction in the brain's pro-inflammatory immune response might be a mechanism that evolved for protection. In disease conditions with a detrimental overactive inflammatory response, low dose radiation may therefore dampen an overactive immune response.

COLLABORATORS

The University of Sydney.

CASE STUDY 5

Understanding corrosion in concrete sewer pipes

OUTCOME

Using neutron imaging techniques at ANSTO, researchers from Macquarie University have gained a better understanding of how corrosion forms and spreads through concrete that is commonly used in sewer pipes.

IMPACT

The study enables the prediction of the service life of concrete sewer infrastructure, leading to potential cost savings and improved environmental impacts through the implementation of appropriate asset management strategies.

RESEARCH

Non-destructive nuclear techniques and computer modelling could be used to detect and locate the extent of corrosion early so as to facilitate timely corrective action. The neutron tomography instrument, Dingo, was used to non-destructively analyse the internal structure of concrete samples. This instrument can be used to create two- and three-dimensional images of a material, revealing structures which generally are not observable by other methods. On the tomographic images, the iron-rich zone is a layer of a distinctive golden brownish colour. In one example, the iron ring appeared to be a uniformly distributed zone within the transition zone between areas showing an advanced level of corrosion and areas showing initial stages of corrosion.

COLLABORATORS

Macquarie University, Sydney Water, Melbourne Water.

CASE STUDY 6

Nuclear technique improves properties of innovative bone implant material

OUTCOME

The Sirius accelerator at ANSTO's Centre for Accelerator Science (CAS) aids collaborators from the University of Sydney in the development of an innovative bone implant that significantly reduces rejection and inflammation rates.

IMPACT

According to the Australian Orthopaedic Association, as reported by the University of Sydney, 1.7 million replacement procedures are carried out in Australia each year. Approximately 20 per cent of these implants will fail at the 10-year mark. This new bone implant material shows the potential to reduce the failure rate to less than one per cent at 10 years.

RESEARCH

A new, safe, organic film/coating for a metal bone implant has been developed, which comprises an antimicrobial biomolecule (defensin) that reduces the implant failure rate to less than one per cent and a biodegradable plastic enriched with gallium, which alters surface properties, increasing stiffness, roughness and transition temperature at the surface. The gallium was added to the coating using low energy ion implantation; the ANSTO capability is provided on the surface engineering beamline of the Sirius accelerator at ANSTO's CAS.

COLLABORATORS

The University of Sydney, Martin Luther University Halle-Wittenberg (Germany), Inha University School of Medicine (Korea) and Chubu University (Japan).

CASE STUDY 7

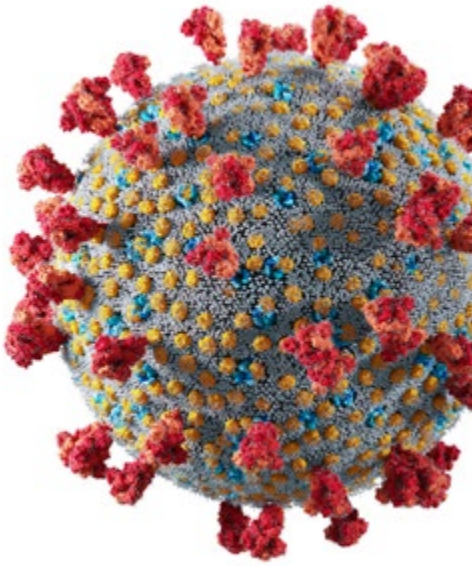
ANSTO supports investigations into COVID-19 research

OUTCOME

ANSTO capabilities are being used by Australian and international researchers to study COVID-19 and discover new treatments.

IMPACT

ANSTO continues to support efforts to develop vaccines and treatments for the COVID-19 virus.



RESEARCH

ANSTO's National Deuteration Facility (NDF) provided high-quality deuterated lipids, used in the construction of cell membrane models, to support European research that improves our understanding of how the virus interacts with elements of the cell membrane. The Microfocus Crystallography beamline (MX2) at ANSTO's Australian Synchrotron has been used clarify the structure of the interaction between a CD8+ T cell, an adaptive immune cell, and the Spike protein of the virus to elucidate the role of specific immunodominant genes in this response. Additionally, the Australian Synchrotron has been used by an international team of researchers to characterise an important protein interaction that contributes to the SARS-CoV-2 virus being able to invade human cells.

COLLABORATORS

Institute Laue-Langevin (France), Paul Scherrer Institute (Switzerland), Institute de Biologie Structurale (France), Monash University, the University of Melbourne, Peter Doherty Institute for Infection and Immunity, QIMR Berghofer Medical Research Institute, Charles Sturt University, Université Paris-Est Créteil (France).

CASE STUDY 8

Developments in cereal agriculture for improved crop yields, nutritional outcomes and global health

OUTCOME

This research builds on existing expertise and recent successes in the application of synchrotron techniques to investigate soil-plant interactions and offers improved agricultural outcomes for Australian farmers through the understanding of plant, soil and fertiliser interactions.

IMPACT

Techniques at the Australian Synchrotron help us to better understand of the role of soil carbon in supporting plant health and growth, improve delivery of important nutrients via soil fertilisers, and develop fertilizer strategies to enhanced levels of micronutrients in grains for improved nutritional and health outcomes.

RESEARCH

A team of researchers from around Australia have been collaborating with ANSTO to undertake cutting-edge studies at the Australian Synchrotron in Melbourne. The Imaging and Medical beamline has been used to study the complex interactions between wheat plant roots, soils and fertilisers. The X-ray Fluorescence Microscopy beamline has been able to map the location and availability of key elements such as phosphorous, zincs and iron in soils at a large scale. In addition, the Infrared Microspectroscopy and Soft X-ray Spectroscopy beamlines have been able to resolve the complex make-up and interactions of different forms of carbon present in soils.

COLLABORATORS

Australian grain growers are engaged with this research program with substantial funding and support from the Grain Research & Development Corporation, with research partners at the University of Queensland, the University of South Australia and Murdoch University.

Form strategic partnerships and collaborations to leverage more effective research outcomes for Australia and the world

Performance criterion	Measure	Result (2021–2022)
Publications undertaken with national and international collaborators	≥95%	**ACHIEVED** **97**% ✔

Analysis of performance

Translational research outcomes are central to our purpose and showcase the value we create for Australia. ANSTO has produced 612 publications with 97 per cent of these published with national and international collaborators from 59 countries. This high level of collaboration highlights ANSTO's exceptional levels of engagement around the world.

Operate world-class research infrastructure, and leverage capabilities to support translational research that delivers real-life benefits and impact

Performance criterion		Measure	Result (2021–2022)
OPAL	*OPAL's capacity to produce commercial quantities of radioisotopes combined with the open pool design, the use of low enriched uranium fuel, and the wide range of applications, places OPAL among the best research reactors in the world.*	**290 days**	**ACHIEVED** **300** days ✔
Australian Synchrotron	*The Australian Synchrotron is one of the leading synchrotron facilities of its kind, maximising utilisation to deliver beneficial research outcomes for Australia. ANSTO measures the Australian Synchrotron's performance by percentage of availability. This is the delivered number of hours available out of the scheduled number of hours available.*	**95% utilisation**	**ACHIEVED** **97**%* ✔
Australian Centre for Neutron Scattering (ACNS)	*ACNS remains a world-leading facility, capitalising on the high availability of the OPAL reactor to support Australian researchers and industries. ANSTO measures the performance within ACNS by percentage utilisation. This is the number of actual operating days out of the number of scheduled operating days.*	**85% utilisation**	**NOT ACHIEVED** **84**%* ✖
Centre for Accelerator Science (CAS)	*CAS maximises utilisation of the available capacity of Australia's accelerator technologies and expertise. ANSTO measures the performance within CAS by percentage of utilisation. This is the number of actual operating days out of the scheduled operating time.*	**65% utilisation**	**ACHIEVED** **78**%* ✔
National Deuteration Facility (NDF)	*The NDF is the only facility of its type in the Southern Hemisphere. Deuteration enables investigation of the relationship between molecular structure and the function of molecules of both biological and synthetic origin. ANSTO measures the performance within the NDF by percentage of utilisation. This is the number of operating days out of the number of scheduled operating days.*	**90% utilisation**	**ACHIEVED** **100**%* ✔
User Satisfaction (NPS)		**90% NPS**	**ACHIEVED** **93**% ✔

* Utilisation results were corrected to account for extended lockdowns due to the COVID-19 pandemic.

Analysis of performance

The 2021 COVID-19 outbreak and associated lockdowns from July 2021 to January 2022 presented ongoing challenges to the operation and utilisation of ANSTO's landmark infrastructure. In consideration of the extended lockdowns, targets were corrected to exclude operations that were not feasible under the restrictions in place at the time. Utilisation results therefore were calculated as a percentage of utilisation divided by the allowed time to operate given restrictions.

Planned OPAL shutdowns through the year continued to ensure the reactor's safe and reliable operations, delivering neutrons for ANSTO science and commercial activities. At ACNS, there were ANSTO COVID-19 research infrastructure shutdowns and restrictions on travel, which was further complicated by unplanned equipment outages. We will continue to identify areas for improvement, such as equipment upgrades, so as to decrease any further unplanned outages.

ANSTO's Centre for Accelerator Science (CAS) prioritised the use of accelerators for user projects that were deemed critical and essential. All other projects that were approved for the user program, but were not deemed critical and essential, were put on hold. From November 2021 onwards, staff were permitted to return to work within CAS to restart an unrestricted user operations schedule.

The National Deuteration Facility (NDF) was also affected by the COVID-19-related extended lockdowns from June to October 2021 and operated at a higher capacity after the lockdown.

OPAL and the Australian Synchrotron both achieved targets that allowed the continued delivery of nuclear medicines for Australia and assistance with almost 200 COVID-19-related experiments. Effective use of ANSTO's landmark infrastructure, is measured through our user satisfaction with which its 93 per cent score is reflective of ANSTO's efficiency of booking systems, availability of infrastructure, usefulness of this infrastructure on research and the expertise of ANSTO scientists.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

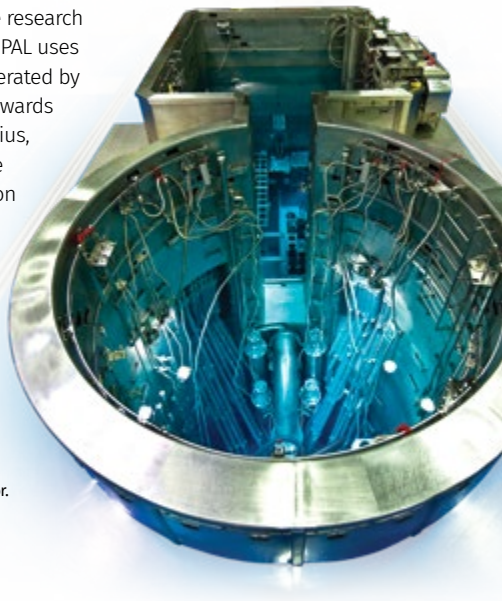
OPAL multi-purpose reactor upgrades

Corporate Plan 2021-2022 planned progress:

Replacement of cold neutron source	Preparation
Replacement and expansion of neutron beams	Implementation

The OPAL multi-purpose reactor has been operating since 2007. OPAL is a 20-Megawatt multi-purpose research reactor used for radioisotope production, irradiation services and scientific neutron beam research. OPAL uses low-enriched uranium fuel in a compact core, cooled by light (normal demineralised) water and moderated by heavy water, which works to maintain the nuclear reaction in the core by "reflecting" neutrons back towards the core. It is equipped with a special Cold Neutron Source (CNS) operating at minus 250 degrees Celsius, which provides further research capabilities. The CNS has a limited operating life; its planned upgrade will preserve and enhance our ability to continue to provide effective scientific infrastructure utilisation for science, research and industry partners. Preparations continue for the replacement of the CNS, which is planned for 2024. The CNS itself has safely arrived onsite and is currently in storage awaiting installation.

This year, we successfully replaced the thermal neutron beam shutter in OPAL, which will complement our plans to build a second neutron guide hall and maintain neutron transmission efficiency for experiments undertaken at the ACNS. This project was safely delivered to plan and within the requirements of the original scope.



ANSTO's OPAL multi-purpose reactor.

Project BR—GHT

Corporate Plan 2021-2022 planned progress:

MCT, MEX1&2, BioSAXS	Preparation	Implementation
ADS 1&2, MX3	Preparation	Implementation
Nanoprobe	Preparation	Implementation
9th Beamline feasibility	Preparation	

Funding secured from more than 20 universities, research institutes, and government agencies in Australia and New Zealand has enabled beamline expansion at the Australian Synchrotron. This level of support highlights the importance of the facility to the Australian and New Zealand innovation and science ecosystem. Progress continues towards the delivery of the BRIGHT beamlines, despite local and international impacts of COVID-19 as well as geopolitical issues on the vendor supply chain and site access. The following progress was made during the year:

- Microcomputed Tomography beamline (MCT) — in September 2021, MCT achieved first light, a major project milestone, allowing the beamline to move from cold to hot commissioning activities.
- Two Medium Energy X-ray Absorption Spectroscopy beamlines (MEX1&2) and the Small Angle X-ray Scattering beamline (BioSAXS) — MEX1&2 and the BioSAXS beamline teams have completed the installation of their Photon Delivery Systems, as well as installation of their radiation shielding hutches and user cabins.
- Advanced Diffraction and Scattering beamlines (ADS 1&2) — The external satellite building that will house ADS is well underway and major procurement packages are complete and are now in the design and manufacture stages.
- High Performance Macromolecular Crystallography beamline (MX3) — MX3 team has completed the Final Design Review of its Photon Delivery System and radiation shielding hutches and will move into manufacture over the coming years.
- Nanoprobe beamline (Nanoprobe) — the Nanoprobe team has completed the conceptual design and tender process for its Photon Delivery System. The final design for the Nanoprobe satellite building is complete and proceeding to tender.
- The 9th Beamline is no longer feasible under the current program of works.

ANSTO's Australian Synchrotron in Clayton, Victoria.

ACNS upgrades

Corporate Plan 2021-2022 planned progress:

Research Infrastructure Investment Plan	Implementation	
Additive manufacturing capability for in-situ neutron scattering measurements	Implementation	Completion
ARC LIEF capabilities with universities	Implementation	Completion
ACNS expansion scoping studies	Preparation	

Investment to upgrade critical instrument systems and expand equipment at the ACNS will ensure ANSTO's state-of-the-art neutron scattering research infrastructure remains world-class and can operate reliably for decades to come.

Of the 19 sub-projects identified, 15 were delivered during this financial year. The other four projects will be implemented in FY23 due to COVID-19, which impacted procurements and delayed subsequent installation.

These investments have made progress as below:

- **Kowari –**
  an additive manufacturing capability was developed for in-situ measurements. Due to COVID-19 delays and restricted access to the site, capability is to be commissioned in FY23.
- **Australian Rheo-Scattering Facilities Linkage Infrastructure, Equipment and Facilities (LIEF) –**
  the replacement rheometer has been delivered and will be available for users in FY23.
- **A four-dimensional X-Ray Microscopy Laboratory LIEF –**
  protype high pressure cells were developed and utilised in neutron scattering experiments in the second half of FY22; final cells will be manufactured in first half of FY23. There were delays as a result of COVID-19 impacting development by university partners and access to the site to test prototype cells (originally planned for first half of FY22).

The user community was engaged through user surveys organised by the Australian Neutron Beam Users Group and in consultation with ANSTO Research Infrastructure Decadal Plan. Through this engagement, Australian users' requirements contributed to the development of the 2021 National Research Infrastructure Roadmap.

The neutron guide hall at ANSTO's Australian Centre for Neutron Scattering.

CAS upgrades

Corporate Plan 2021-2022 planned progress:

Low energy beamline	Preparation	Implementation
Automation of radiocarbon sample processing	Preparation	Implementation
Commissioning external beamline for radiobiology	Preparation	Implementation
Space electronic testing	Preparation	

In FY22, ANSTO delivered space radiation testing on advanced electronics and solar cells for new users from the University of Melbourne and the University of Sydney. Led by ANU InSpace, ANSTO is a partner in a successful bid for Australian Space Agency Space Infrastructure funding to support the establishment of the National Space Qualification Network. This network is developing ANSTO facilities for space radiation testing using ion beams, x-rays and gamma rays, to deliver total ionising dose testing and single event testing. This external funding is enabling the development and demonstration of ANSTO's space radiation testing capabilities for electronics and devices, including upgrades to the ANTARES microprobe beamline, acquisition of a chip decapper, and recruitment and training of staff. The first ion beam irradiations on electronic chips have been successfully delivered, with project work continuing into FY23 when the first commercial access users are expected.

Progress occurred during FY22 on the below accelerators:

- **Sirius accelerator –**
  a new sample stage was designed and manufactured in-house for the combined low-energy ion implanter and surface engineering end-station to include a heating element for heating of a sample up to 700 degrees Celsius, while being thermally insulated from the existing high-precision sample stage micromanipulator. The new capability enables material modification and doping by ion implantation at elevated temperatures for studies of material dynamics and optimisation of material structure and properties. The first user experiments using this capability were successfully completed. Electronics equipment for a deceleration stage were procured for achieving ultra-low ion energies suitable for modification of ultra-thin and 2D materials, which will be implemented in FY23.

- **VEGA accelerator –**
  a new, in-house designed, automated sample preparation system for extracting dissolved inorganic carbon from groundwater samples ahead of radiocarbon dating measurement was constructed, tested and commissioned. Significant delays were experienced due to the extensive work-from-home orders and long lead times on electronics parts. The first operation for the user program is expected early in FY23.

- **Australian National Tandem Research Accelerator (ANTARES) –**
  the ex-vacuo irradiation chamber has been commissioned, with first ion beam radiobiology user experiments delivered successfully on human fibreblast cells cultured by ANSTO's Human Health team for investigating space radiation effects on astronauts.

The ANTARES accelerator at ANSTO's Centre for Accelerator Science.

NDF capability expansion

Corporate Plan 2021-2022 planned progress:

Provide stable isotopes internal standards	Preparation, Implementation
Provide solutions to industry	Preparation
Build Australia's human capital	Monitoring

The team commenced the expansion of existing capabilities to transition the NDF from being the sole, primary support of characterisation techniques to enabling research utilising deuterated molecules as functional materials in industry and biotechnology programs. This work has been critical in providing sovereign onshore support to drug discovery programs in Australia, reducing the inherent risks of dependency on outsourcing to overseas countries.

Projects under this expansion activity are underway to:

- **Provide stable isotope internal standards for drug discovery and analysis programs in Australia**

  In preparation for the National Research Infrastructure Roadmap, the NDF made a submission to the Idea Jam activity, entitled "Bespoke stable isotopes in clinical pharmacology and drug discovery", describing the need to consider funding for a national capability to support the provision of custom-made stable isotope-labelled internal standards for validation and bioanalysis of drugs.

- **Provide solutions to industry**

  The NDF and Psylo, a Sydney-based preclinical biotech start-up drug development company focused on next generation psychedelics, have signed a collaboration agreement to work together on studying the effect of the isotope deuterium in enhancing the metabolic profile of new psychedelics. Improving drugs via deuteration is a core competency for ANSTO and this collaboration will accelerate Psylo's development into drugs for psychedelic-assisted therapy.

- **Build Australia's human capital in deuteration**

  The NDF recruited a Mass Spectrometry specialist, funded by the Research Investment Implementation Plan (RIIP-2018), to support the NDF capability expansion in terms of the provision of stable isotope internal standards for drug discovery and analysis programs in Australia. The specialist will develop capability in evaluating the effect of deuteration on improving performance of material properties using Mass Spectrometry techniques.

  Through the Australian Institute of Nuclear Science and Engineering (AINSE), six doctoral and Honours students were supervised. One graduate from ANSTO's graduate program was also supervised and a specialist role in Mass Spectrometry was recruited.

Development of a decadal plan for research infrastructure

Corporate Plan 2021-2022 planned progress:

Implementation | Completion

The Research Infrastructure Decadal Plan was in finalised in FY22. Much of ANSTO's multi-disciplinary research infrastructure has evolved over many decades, in line with changing research drivers and needs both inside and outside of ANSTO. Growing, developing and improving research infrastructure happens deliberately.

The Decadal Plan:

- identifies priority areas and sets objectives for the next decade
- outlines key initiatives to achieve these objectives and priorities
- includes a framework for its implementation and review to ensure it remains a contemporary strategic planning resource over the next 10 years.

The Research Infrastructure Decadal Plan identified six priority areas:

1. **World-class infrastructure delivering excellent outcomes:**
   maintain, expand and improve current capabilities to ensure ANSTO continues to provide technical and scientific outcomes with high impact.
2. **Operational effectiveness:**
   improve and optimise the way ANSTO operates and manages its research infrastructure.
3. **Next-generation research infrastructure:**
   plan for critical research infrastructure and emerging technology areas at the national scale to deliver sovereign capability and support ANSTO's core mission into the future.
4. **Skilled, productive and engaged people:**
   support and enable a highly skilled workforce, working together as one community towards common objectives.
5. **ANSTO User Experience:**
   deliver improvements to the ANSTO User Experience and ensure excellent outcomes with high impact and of national value.
6. **Partnerships that leverage ANSTO's expertise and infrastructure:**
   identify, select and foster research infrastructure partnerships that deliver on ANSTO's vision.

STRATEGIC OBJECTIVE 2:

To provide nuclear medicines and commercial services for the benefit of Australia and the world

Ensure the reliable and sustainable supply of nuclear medicines, products and services

Performance criterion	Measure	Result (2021–2022)	
ANM (Mo-99) DIFOT*	**95%**	**ACHIEVED** **95%**	✔
ANSTO Nuclear Medicine Production Facility DIFOT	**95%**	**NOT ACHIEVED** **94%**	✖
NTD Silicon DIFOT	**95%**	**NOT ACHIEVED** **85.3%**	✖

* Delivery in full and on time

Analysis of performance

DIFOT measures our ability to deliver our products in full and on time to our customers. Given the adverse impacts of the COVID-19 pandemic, ongoing challenges were presented that affected the delivery of our products. Supply performance impacts were observed where global supply chains reduced the reliability of inbound and outbound material flow. ANSTO implemented a range of initiatives to combat these challenges, which included improvement programs resulting in higher yields and more predictable outputs of molybdenum-99 for domestic and international customers. Additionally, operation at a reduced capacity was implemented through a period to increase overall supply chain security for nuclear medicines. ANSTO continued to produce quality nuclear medicines safely and reliable through FY22, enabled by the six-week-long maintenance shutdown that allowed the implementation of critical safety and reliability improvement works.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

Ongoing maintenance of our Nuclear Medicine Production Facility

Corporate Plan 2021-2022 planned progress:

Implementation

ANSTO is responsible for the manufacture, production and distribution of radiopharmaceuticals, radiochemicals, cold kits, and accessories for use in healthcare and research globally. The COVID-19 pandemic provided continuing challenges for our activities. ANSTO worked closely with our partners and freight and logistics companies, as well as international manufacturers, to ensure the continuity of supply of nuclear medicines to Australian patients.

The preventative maintenance shutdown of ANSTO's ageing Nuclear Medicine Manufacturing and Distribution Facility (Building 23) progressed to plan. This was the largest maintenance shutdown of Building 23 in recent history, with significant equipment risks mitigated. It concluded on 22 October 2021, included work across most of the facility and interfaced with every product line. The maintenance included rectification and replacement of high-risk assets as well as regulatory and safety improvements. Future maintenance planning and additional works identified requiring resolution in the long-term will be addressed as part of future planned maintenance shutdowns.

Use knowledge incubation, research translation and collaboration within the Innovation Precinct to produce real-world benefits

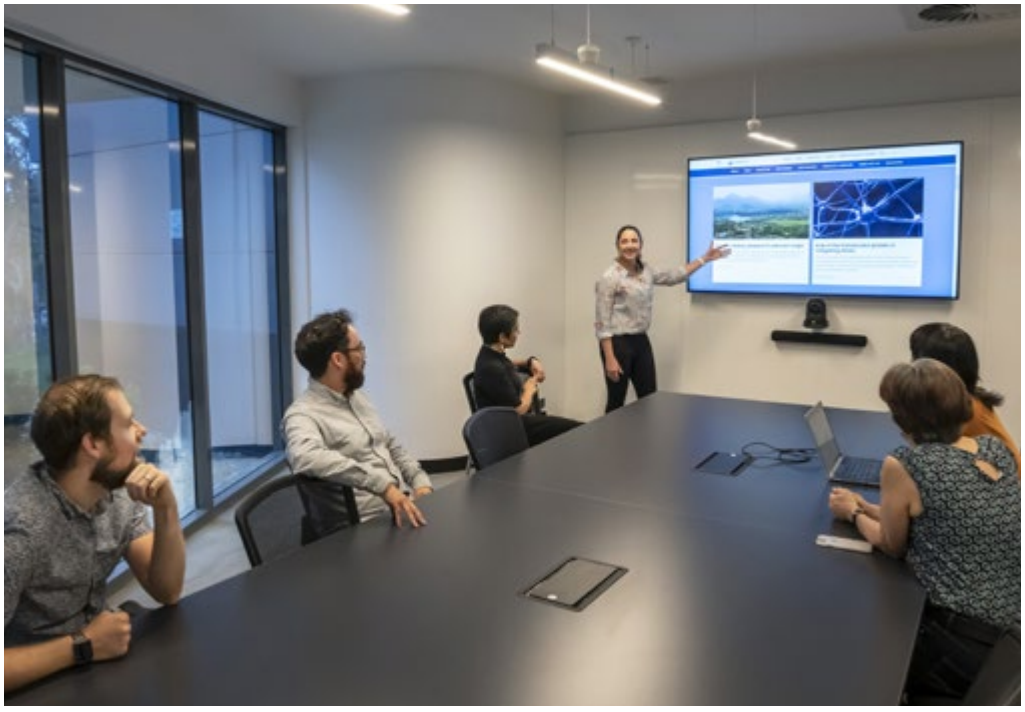
Performance criterion	Measure	Result (2021–2022)
New jobs supported each year within the Innovation Precinct	**10***	**ACHIEVED** ✔ **355** jobs

* Performance measure was based on the former performance criterion of "jobs supported"

Analysis of performance

nandin is ANSTO's Innovation Centre where science and technology entrepreneurs, start-ups and graduates come together to challenge, design, innovate and commercialise, creating new jobs in the high-growth industries of tomorrow. During FY22, a new Commercial Products and Services Executive was appointed.

This performance criterion has recently been reassessed and changed from "jobs created" to "jobs supported", which is a more valid and reliable measure to assess the impact of the Innovation Precinct on industry. Jobs supported, as opposed to jobs created, is measured by how many employees member businesses hire. In FY22, *nandin* supported 355 jobs within the Innovation Precinct, achieved through tailored support for *nandin* members, including mentoring and entrepreneurial support programs, which develop critical skills that are needed to grow and scale member businesses. Member satisfaction is attributed to the membership growth through word-of-mouth promotion and advocacy of *nandin*.



STRATEGIC OBJECTIVE 3:

To be an expert and trusted advisor to government, industry, international partners and the Australian public

Deliver expert advice to local, state and federal governments and related stakeholders to support the national interest

Performance criterion	Measure	Result (2021–2022)
Australian Government stakeholder satisfaction — federal, state and local government	**75%**	**ACHIEVED** **90.5%** ✔
Case studies to highlight and assess the impact of our engagement with government-related stakeholders	**≥ Four case studies per annum**	**ACHIEVED** Refer to case studies listed below ✔

Analysis of performance

ANSTO plays a vital role in providing expert advice to the Australian Government on all nuclear science and technology related matters. As a Corporate Commonwealth entity, we have direct accountabilities and responsibilities to the Australian Government, particularly to the Minister for Industry and Science, and the Australian Parliament, which are mandated in legislation.

We invited all our government stakeholders to participate in a "Provision of Advice to Government" survey, of which we had 22 representatives from the federal government respond. Over 90.5 per cent of participants stated that they were satisfied and very satisfied with the advice provided to them. Most participants described ANSTO's advice as useful, reliable, of high quality and prompt. ANSTO will continue to provide extensive technical expertise and advice to government to ensure Australia remains at the cutting edge of nuclear science capabilities.

Case studies

CASE STUDY 1

VIP visits

During 2021–22, ANSTO maintained ongoing engagement activities across all levels of government, Australian agencies, industry and international stakeholders, to build awareness of, and support for, ANSTO activities.

Government visits consisted of former Prime Minister Scott Morrison, ANSTO's former responsible Minister, the Hon Melissa Price MP, the Governor-General of Australia, representatives from the Department of Industry, Science and Resources (DISR), state government ministers and the Sutherland Shire Council. Additionally, we welcomed visits from various agencies, including the Australian Radioactive Waste Agency (ARWA), the Australian Safeguards and Non-Proliferation Office (ASNO), CSIRO and the Department of Defence. Our close ties with government help us to deliver our mandate to be Australia's trusted advisor for nuclear science and technology.

On the international side, the International Atomic Energy Agency's (IAEA) Director of Technical Cooperation for Asia and the Pacific Division, Dr Jane Gerardo-Abaya, visited ANSTO. We also welcomed guests from embassies including France, Argentina, United Arab Emirates and Israel. International collaboration allows Australia to remain up-to-date, reinforces our *de-facto* position on the IAEA's Board of Governors and strengthens Australia's position as the nuclear steward for the Indo-Pacific region.

These visits educate our stakeholders about the benefits our science delivers and provide collaboration opportunities to build ANSTO's knowledge base and secure capabilities for Australia.

CASE STUDY 2

AUKUS

As the nation's centre-of-excellence on nuclear science and technology and under its advice to government role, ANSTO supports the Department of Defence Nuclear-Powered Submarine Task Force (NPSTF) in its work to identify the optimal pathway for Australia to acquire a conventionally armed, nuclear-powered submarine capability, as announced under the trilateral AUKUS agreement in September 2021.

ANSTO has unique experience in nuclear stewardship which is of use to the NPSTF. ANSTO has almost 70 years of experience in the safe, secure and sustainable operation of nuclear reactors and associated facilities, including the class-leading OPAL multi-purpose reactor. ANSTO has over 1,300 staff, including experts in nuclear engineering and reactor operation, safety and radiation protection, waste management, nuclear security and safeguards, materials scientists, and education and communications. This experience in nuclear stewardship is what the NPSTF draws upon.

ANSTO has embedded a full-time officer in the NPSTF to provide real-time technical advice and coordinate requests for information. To support the NPSTF in its work, ANSTO has also established a small Working Group of experts to provide a range of services and advice. The members of the Working Group are based at ANSTO's Lucas Heights campus and provide advice within their specific areas of expertise. ANSTO has undertaken over 60 packages of work for the NPSTF, including provision of technical advice, conducting detailed technical workshops for NPSTF members, and engaging with US and UK partners to help baseline Australia's existing nuclear capabilities.

CASE STUDY 3

Advice to government

During 2021–2022, ANSTO maintained ongoing engagement with its former Minister for Industry, Science and Technology. ANSTO also worked closely with DISR to deliver legislative requirements under the *Australian Nuclear Science and Technology Act 1987*.

ANSTO provided over 19 briefs on operations and activities to its responsible Minister and advised on key organisational milestones and challenges. ANSTO made 11 submissions to both state and parliamentary inquiries on topics including: the Australian manufacturing industry, Australia's sovereign naval shipbuilding, opportunities for advancing Australia's strategic interests through existing regional architecture, and prerequisites for nuclear energy in Australia. ANSTO staff also provided expert evidence at a number of parliamentary inquiry hearings.

ANSTO continued to act as the secretariat for both the Nuclear Agencies Consultative Committee (NACC) and the Research Agencies Meeting (RAM). In addition to these forums, ANSTO responds to numerous requests from other departments and science agencies for expert advice regarding nuclear science and technology, and provides input into questions on notice, coordination requests and business cases.

CASE STUDY 4

Science Meets Parliament

Science Meets Parliament is Australia's unrivalled and most effective program of bespoke training for deep engagement between the STEM sector, parliamentarians and journalists. It plays a crucial role in building relationships to bring STEM expertise even more deeply into the service of the nation, by giving experts in science, technology and engineering a deeper understanding on how to engage effectively with policymakers. Additionally, it assists policymakers to connect with these key experts.

In 2022, the event included expert-led professional development, a welcome reception, parliamentary forum, a televised National Press Club address, and the opportunity for delegates to meet privately in small groups with parliamentarians. Also included at the end of the program was a national gala dinner, which ANSTO has sponsored for several years. Due to the COVID-19 pandemic, the 2022 event saw over 700 people gather across eight Australian cities with the evening livestreamed across all venues.

Science Meets Parliament, and in particular, the national gala dinner, provides ANSTO delegates with important opportunities to facilitate:

- connections with key political and industry leaders
- building ANSTO's reputation, communication of key priorities and showcasing ANSTO's nuclear capabilities
- showcasing specific areas of participant's work
- knowledge sharing within the science and technology space.

Given the timeliness of this event in connection with the 2022 Federal Election, it was a critical forum for ANSTO to engage with members of Australia's incoming government and key industry leaders.

Participate in global and regional nuclear discussions to ensure that Australia remains a leader in the applications of nuclear science and technology

Performance criterion Facilitation of Australian participation and leadership in IAEA and RCA programs	Measure	Result (2021–2022)
Regional Cooperative Agreement (RCA)	**Participation in 80% of active projects** **Leading ≥1 project**	**ACHIEVED** **98**% **3** Australian-led projects ✔
IAEA Coordinated Research Project (CRP)	**Participation in ≥10 projects relevant to nuclear applications**	**ACHIEVED** **43** projects ✔
Case studies to highlight and assess the impact of our engagement with international stakeholders	**≥ Two case studies per annum**	**ACHIEVED** Refer to case studies on following pages ✔

Analysis of performance

Due to extended lockdowns and travel restrictions as a result of the COVID-19 pandemic, many IAEA and RCA programs adapted to a virtual format which allowed an increase in Australian participation. For projects that required practical participation, extensions were granted into FY23 and there was some degree of downscaling to accommodate. During FY22, 350 staff participated in IAEA virtual meetings. In contrast, in 2019, approximately 220 ANSTO staff physically travelled for participation in IAEA meetings. This shift to a virtual format has therefore facilitated the increased participation of ANSTO staff and Australia as a whole. With three Australian-led RCA projects and eight Australian-led CRP projects, it is clear that ANSTO plays a key role in Australia's leadership within the region.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

Chairing the Regional Cooperative Agreement (RCA)

Australia, through ANSTO, will serve as Chair of the treaty-level Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific (RCA) in 2023. The Chair position rotates through each of the 22 RCA Governing Parties (Member States), with each National Representative holding the position for a year. Being Chair of the RCA provides Australia with a rare opportunity to provide strategic direction to the forum.

A strong RCA is vital to Australia, as it is the principal means by which Australia demonstrates its obligations under international law to cooperate on the peaceful uses of nuclear science and technology, and supports Australia's claims to its *de facto* permanent seat on the IAEA Board of Governors. As Chair of the RCA, Australia will be responsible for managing programmatic and strategic aspects of the Agreement. Australia also will host the prime annual policy-making meeting, the National Representatives Meeting, in May 2023 in Sydney.

The year in which Australia assumes the Chair's position is particularly important, as the next RCA Medium Term Strategy will be approved, setting the RCA's strategic direction for the following six years. In addition to being Chair in 2023, Australia will be part of the RCA's high level Standing Advisory Committee from 2022 to 2024 as incoming, serving and outgoing Chair, respectively. The importance and infrequence of this role provides Australia with considerable opportunity to promote ANSTO's work in transferring and exchanging knowledge about the peaceful uses of nuclear science and technology across the region. It also contributes to the realisation of Australia's national interests with partners across the Australian Government.

An ANSTO Senior Officer serves as Australia's National Representative to the RCA, also serving as a focal point for all Australians engaging in RCA activities.

Case studies

CASE STUDY 1

Vienna Counsellor

As a member of the IAEA, ANSTO participates in and provides leadership of a range of committees and working groups on all aspects of the peaceful use of nuclear technologies.

ANSTO maintains a Counsellor in Vienna in support of the Australian Permanent Mission to the IAEA, to represent the nation's interest and to reinforce our leadership position in the nuclear industry. The incoming Counsellor is Marina Francis, previously of ANSTO's Government and International Affairs (GIA) team. The position consists of a three-year term and was previously held by Jarrod Powell.

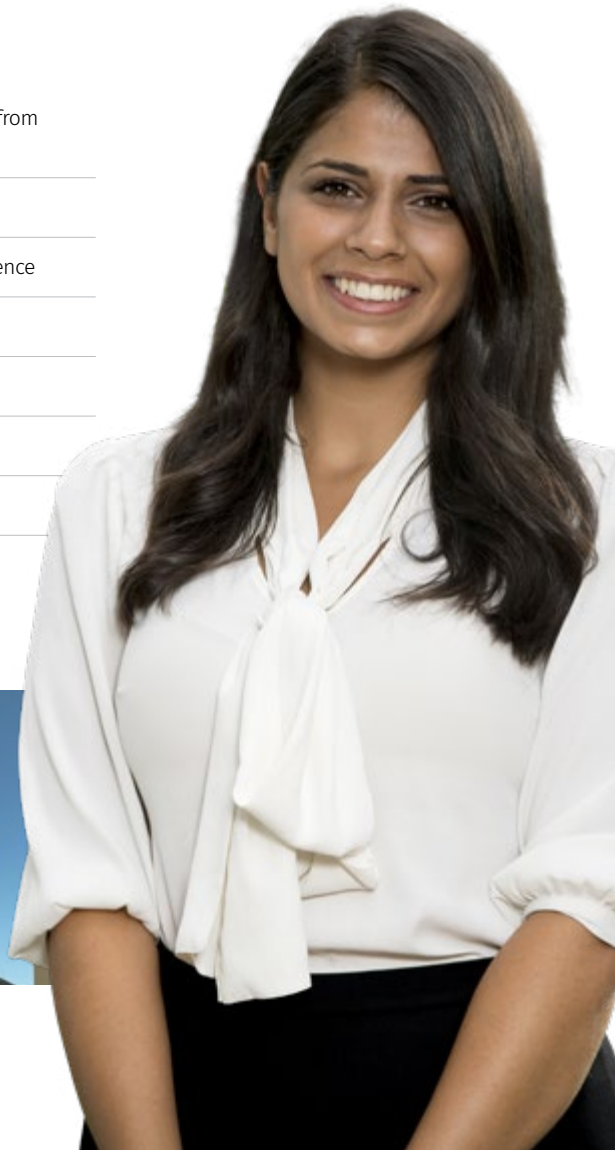
As a graduate of Chemical Engineering from the University of New South Wales, Ms Francis began her ANSTO career as a Process Engineer in Minerals. To better utilise her technical knowledge and interest in international relations, she moved on to Legal and Commercial, assisting the international team by drafting Memorandums of Understanding. She continued to work within the GIA team assisting in numerous submissions and inquiries, including leading the development of organisation level strategic documents and coordination requests from across ANSTO. Ms Francis also possesses a Juris Doctor from the University of New South Wales.

While developing her technical skills as an engineer, Ms Francis maintained her passion for international affairs and pursued opportunities that provided exposure to strategy and the ability to make a high-level, nationwide impact. Her work in Sri Lanka with the Department of Foreign Affairs and Trade (DFAT) and ANSTO in investigating chronic kidney disease of unknown cause (CKDU) made a lasting impression, allowing her to combine elements of international diplomacy with her engineering skills.

As the Vienna Counsellor, her responsibilities include, but are not limited to:

- meeting with the secretariat of the IAEA and other officials to understand their needs from Australia in relation to their international priorities
- consultation (with ANSTO, ARPANSA, ASNO, DFAT, DISER and others)
- liaising with other Member States and securing mutual interests at the general conference
- upholding Australia's position as a nuclear leader in Asia–Pacific region
- engaging in bilateral discussions to identify mutual interests and prosecute them
- negotiating and peer reviewing with other Member States
- drafting resolutions.

Ms Francis notes that multilateralism will be a central challenge — identifying mutual priorities between Australia and other Member States as well as mutual regional priorities is key to overcoming this, but will also require significant engagement, consultation and coordination.



CASE STUDY 2

Technical Cooperation (TC) key projects of the RCA and FNCA

A key component of the IAEA's work is the provision of technical assistance to developing countries, through its Technical Cooperation (TC) Department. Eight Regional Cooperative Agreement (RCA) projects submitted for the TC 2022–2023 cycle have been approved. These projects focus on radiotherapy (three), industry (two) and environment (three).

The environment projects include:

RAS5091 —
Assessing and Mitigating Agro-Contaminants to Improve Water Quality and Soil Productivity in Catchments Using Integrated Isotopic Approaches

Dr Tim Ralph, Senior Lecturer in Environmental Sciences at Macquarie University, is the Lead Country Coordinator (LCC). This project will enhance the capacity of countries in the Asia–Pacific region by developing technical capabilities to identify, measure and trace agro-contaminants using an isotopic toolkit. Socioeconomic benefits from the project may include improved soil and water quality as well as enhanced agricultural resilience against land and water degradation.

RAS7040 —
Enhancing the Regional Collaboration in Water and Environmental Isotope Analysis for Improvement of Water Management Practices, an Effort to Alleviate Climate Change Impacts in the APR

Climate change is a general problem in the Asia–Pacific region which is increasingly experiencing extreme events such as tropical storms, floods, droughts and sea level rise. This project aims to organise regional training in water and environmental isotope analysis, data treatment and modelling for young researchers, standardise monitoring protocols and analytical programmes adapted to regional conditions, and help Member States (governmental agencies and stakeholders) set up national monitoring networks and calibrate water resource models. ANSTO's Dr Catherine Hughes is the National Contact Point (NCP)

RAS5092 —
Increase Crop Productivity under Drought Conditions by Using Isotope Techniques to Optimize Water Usage

ANSTO's Dr Karina Meredith is the NCP. Improper water management, indiscriminate water use and climate change are the major factors reducing global freshwater resources. Irrigation and agricultural purposes make up around 70 per cent of all freshwater use, although water use efficiency (WUE) remains below 50 per cent. This project aims to contribute to improving crop water productivity (CWP) under water-limiting conditions using nuclear, isotopic and related techniques, including mapping water productivity (WP) using remote sensing satellite imagery to optimise WUE of selected crops. The project also aims to enhance regional human capacity to support devising irrigation and related management techniques.

Completed study —
Research on Climate Change using Nuclear and Isotopic Techniques

A Forum for Nuclear Cooperation in Asia (FNCA) project conducted between 2017–2021, was closed out, with Henk Heijnis of ANSTO's Environment team as Project Leader (now retired). The overall aim of the project was to better understand the mechanisms and processes of past climate variability through undertaking nuclear and isotopic-based experiments and analyses that support research into past climate change and share the expertise to interpret the new knowledge. The project resulted in numerous publications by Australia, China, the Philippines and Japan as well as soil sampling guidelines which were published late in 2020. These achievements have led to the building of sovereign capabilities by the participating countries, with assistance by others.

Grow a more informed generation of Australians who understand the benefits of nuclear science and technology

Performance criterion	Measure	Result (2021–2022)	
Share with the general public research outcomes enabled by ANSTO	**≥36 science stories published** on the ANSTO website per annum	**ACHIEVED** **77** science stories	✔
Offer a range of resources for teachers and students to support the national science curriculum outcomes for years 3 to 12	**Deliver ≥six national programs** per annum	**ACHIEVED** **9** programs	✔
Increase accessibility of STEM teacher training programs	**Delivery teacher professional development days** in all states and territories	**ACHIEVED** **723** teachers nationally	✔
Conduct educational tours and science experiences at ANSTO's Sydney and Melbourne campuses	**≥15,000 visitors to ANSTO's campuses** per annum	**NOT ACHIEVED** **5,054** visitors	✖

Analysis of performance

ANSTO aims to inform and engage Australians about the benefits of nuclear science and technology. We also seek to support national science education objectives and inspire young Australians to take up STEM careers so as to ensure Australia's pipeline of STEM talent is maintained.

Despite the COVID-19 pandemic leading to ongoing necessary adjustments across all communications and engagement programs, we experienced strong audience reach and engagement.

ANSTO's website saw an increase of five per cent in terms of visits in the reporting period and the general public engaged with our social media channels — Facebook, Twitter and LinkedIn — 25 per cent more than in the previous year. Overall total activity on social media improved by 33 per cent from the previous year.

Mainstream news reporting of the safe repatriation of intermediate-level waste (ILW) from the United Kingdom to ANSTO in March resulted in significant nationwide media coverage, with over 440 news items reaching almost 6.5 million people. This was well managed and almost all news reports were balanced and accurate.

COVID-19 has enabled ANSTO to broaden its education and outreach activities online, allowing us to reach a much broader geographical spread of students. In recent months, we have seen a return to the demand for in-person school tours and experiences. However, we have not experienced a decline in terms of our online audiences.

Our engagement with science teachers via online professional development programs is strong and growing, and there is broad and increasing interest in nuclear education following the AUKUS agreement. ANSTO's well established school-based nuclear education programs are well placed to support other departments and the development of Australia's nuclear workforce for the future.

ENABLING OBJECTIVE:

To mobilise and develop the nuclear science and technology workforce of the future

Provide an inclusive environment that empowers our people and supports a culture of collaboration of engagement

Performance criterion	Measure	Result (2021–2022)	
Leadership teams — representation	Male **40%** | Female **40%** | Discretionary **20%**	**NOT ACHIEVED** Male **62.5**% Female **37.5**%	✖
ANSTO-wide — representation	Male **40%** | Female **40%** | Discretionary **20%**	**NOT ACHIEVED** Male **68.3**% Female **31.7**%	✖

Analysis of performance

The male 40% | female 40% performance measure was established in 2018, and targeted initiatives have resulted in an increase in female intake but remains short of achieving our target. Since 2018, we have increased our overall female representation by three per cent. ANSTO's complete diversity data can be found in *Appendices and Index — Reporting under the Equal Employment Opportunity Act 1987*.

The establishment of policies and guidelines has ensured gender-balanced recruitment panels and a strong focus on diversity across the organisation. Our diversity and inclusion data shows that our managers understand the merit that diversity can bring to the organisation. We have introduced initiatives to promote women in STEM through primary, secondary and tertiary education institutions. Initiatives such as school tours, workshops, online learning, teacher professional development, online resources, and extracurricular activities such as National Science Week Hackathon and STEAM Club for Girls, promote the involvement of females within STEM.

The Women in Leadership League (WILL) was launched on 14 June 2022. This is a staff network open to all women and non-binary people at ANSTO as a dedicated space for connection, learning and sharing. The WILL network is operating in partnership with the WALT Institute, who specialise in supporting people in STEM to develop and step into their own authentic leadership style. Personal and professional skills development sessions through the Institute focus on building understanding of leadership, resilience and confidence.

ANSTO strives to improve gender diversity and we are looking at ways to attract and retain female employees. Data from exit surveys will assist in developing retention strategies with a strong focus on career development opportunities, secondments and refreshed investment in female mentoring to develop, promote and retain women in our workforce. ANSTO also has work experience programs for females with a biannual intake.

Train and develop the next generation of specialised nuclear professionals

Performance criterion	Measure	Result (2021–2022)
Postgraduates supervised	**120**	**ACHIEVED** ✔ **161**

Analysis of performance

ANSTO is also committed to developing the next generation of nuclear professionals. We collaborate with AINSE to provide pathways and networks within nuclear science, engineering and related research fields. AINSE is the key link between Australasian universities and ANSTO's state-of-the-art facilities by facilitating and supporting high-quality research, education and training in nuclear science and engineering. AINSE offers two types of scholarships for postgraduates — a postgraduate research award (PGRA) and a residential student scholarship (RSS). ANSTO currently hosts 122 PGRA and 20 RSS postgraduates.

The ANSTO Graduate Institute, as part of the ANSTO Innovation Precinct, is responsible for developing and nurturing the next generation of Australian nuclear scientists and engineers. With the support of the NSW Government, ANSTO offers FutureNow scholarships to graduates or early career researchers working on industry-focused research projects that support developments in health, defence, aerospace engineering and nuclear technologies. There are 19 scholars in the current cohort.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

People Hub platform

Corporate Plan 2021-2022 planned progress:

Preparation Implementation

ANSTO has implemented an all-inclusive cloud-based human resources (HR) online platform — the People Hub platform. The implementation of three modules (employee experience management, core HR and payroll, and talent management) is complete and we are utilising these synergies within the system to deliver an engaged and high performing workforce. Implementing the HR analytics component is now underway to provide objectivity in analysing the needs of our workforce.

Engineering capability development

Corporate Plan 2021-2022 planned progress:

Implementation

ANSTO has completed the development of the Engineering Capability Framework. We are now analysing strategic ways to utilise this framework to identify gaps in capabilities which complement our strategic workforce planning procedures. The success of this project will provide further insights into the expansion of a capability framework across the organisation.

ENABLING OBJECTIVE:

To ensure the ongoing financial and operational sustainability of ANSTO

Ensure a highly reliable, safe and secure environment

Performance criterion	Measure	Result (2021–2022)	
Improvement in safety culture	**Increased opportunities for improvement** (OFI) to actual incidents recorded*	**ACHIEVED** **6:10**	✔
Improvement in site-wide safety	**Year-on-year decrease in Class 1, 2 & 3 incidents****	**ACHIEVED** **4**	✔

* **OFI —** An event did not result in any adverse effects to personnel or the environment and is not considered to have had the potential to cause a lost time injury, medical treatment injury or exposure of personnel, or harm to the environment, but could have resulted in a minor occurrence or damage to plant and equipment.

** **Class 1 —** Damage that permanently alters a person's life;
Class 2 — Damage that temporarily alters a person's life;
Class 3 — Inconveniences in a person's life or 1–5 days/shifts off work.

Analysis of performance

ANSTO undertakes a wide range of activities that benefit Australia through the careful application of nuclear-based science. Through the development of and commitment to a robust safety management system, ANSTO strives to ensure that potential hazards and risks are as low as reasonably achievable and in line with the expectations of our regulators. Safety is at the heart of ANSTO's culture.

ANSTO continues to promote the reporting of all environmental, health and safety-related incidents including:

- near misses, general hazards and observations (otherwise known as leading incidents)
- injuries and personal radiation contamination incidents (otherwise known as lagging incidents).

These incidents are tracked and trended to support evidence-based decision-making and initiatives.

ANSTO continues to measure opportunities for improvement (OFI) as a leading safety measure, with a target of 70 per cent. OFIs are events that do not result in any adverse effects to people or the environment but could have resulted in minor damage to plant and equipment.

The FY22 safety incident ratio remains consistent with FY21 at 6:10. During this reporting period, operations at all ANSTO campuses were affected by COVID-19 due lockdown restrictions which resulted in remote working arrangements. From July 2021 to February 2022, an average of 500 staff were working on campus daily, the lowest number of staff on campus being 228. With fewer staff working on campus, there was a reduction in the overall number of safety incidents reported impacting OFI-type incidents. When comparing the reporting period and the previous year, there was a 44 per cent reduction of staff working on campus, however, there was only a 17 per cent reduction of safety incidents and 12 per cent reduction in OFI-type incidents.

Improvement in site-wide safety can be observed through a reduction in the number of Class 3 injuries, with four reported in FY22 in comparison to six as reported in FY21. Additionally, no Class 1 or 2 injuries were reported for FY22.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

Health monitoring program

Corporate Plan 2021-2022 planned progress:

Preparation

The newly formed Human Health Monitoring Group brings together occupational hygiene and personal radiation dosimetry services. In FY22, the Human Health Monitoring Electronic Health Records system went live. This system supports ANSTO's occupational health and occupational hygiene data management requirements. This quality data collection and management system will be streamlined, based on international best practice and consistent with regulatory requirements, to ensure we continue to identify occupational exposures with the potential to cause health impacts, assess the risk and ensure implementation of exposure controls which target critical risk activities. Further benefits of this system include data security and enhanced trending and reporting. Our data driven processes will allow for early intervention and we will leverage occupational health software systems to enhance the analysis of occupational exposure. This analysis will improve organisational visibility of health and medical monitoring results, which will provide crucial information to develop future data-driven safety strategies.

Psychological safety culture program

Corporate Plan 2021-2022 planned progress:

Preparation Implementation

This year, ANSTO has established a cross-functional early intervention psychosocial working group. This group collates organisational data including diversity and inclusion data, employee satisfaction surveys, safety empowerment, reporting measures and employee engagement. This data is then reviewed for early markers of psychosocial stress, which will form the basis for development of intervention programs across ANSTO. Based on the risks and evidence developed by the working group, ANSTO is strengthening its approach to psychological safety across the board, looking to integrate approaches to managing risk and early identification/intervention on matters of psychological safety across a breadth or organisational systems and processes.

Cybersecurity uplift program

Corporate Plan 2021-2022 planned progress:

Preparation Implementation Completion

ANSTO has implemented contemporary cybersecurity technologies with a focus on operationalising and improving our current systems. ANSTO has leveraged these capabilities to identify, analyse and prioritise the remediation of higher risk vulnerabilities. As planned, remediation activities have progressed to a stage where risk identification and mitigation work is now part of operational activities for 2022–23.

Safety

ANSTO recognises the importance of preventing workplace injury, illness and disease. An initiative to implement an Occupational Health and Occupational Hygiene software suite was prioritised in FY22. The software suite went live this year and importation of legacy data is currently in progress. This health software solution provides the tools to enable ANSTO to better recognise patterns of illness and injury, promote data integrity, ensure regulatory compliance with relevant exposure standards, and streamline exposure reporting and analysis.

Factors such as COVID-19 and natural disasters including bushfires and flooding, had the potential to exacerbate mental health issues for our staff. ANSTO implemented a range of initiatives to keep our staff healthy and build resilience, including mental health and wellbeing webinars, mental health first aid training programs and online workshops.

To protect ANSTO staff from COVID-19 transmission, ANSTO put in place occupational health procedures in accordance with local, state and Commonwealth directives. ANSTO also introduced rapid antigen tests (RATs) to help protect our people.

Injuries during 2021–2022

YTD there have been 42 injuries (12 per cent of safety incidents) reported, compared to 62 (14 per cent of safety incidents) reported during the same time last year.

Workers' compensation

The ANSTO premium continues to be dependent on the aggregate premium pool (the total premium to be charged across all Commonwealth agencies) and ANSTO's claim performance. ANSTO's FY22 Workers' Compensation Premium was $701,360, which was higher than the Indicative Premium for FY22 which was $646,056. This increase was due to the higher average costs of claims.

Regulatory engagement — Comcare

The main safety regulator that ANSTO engages with for non-radiation safety-related work, health, and safety (WHS) oversight is Comcare. During 2021–2022, Comcare was notified of the following ANSTO incidents:

WORK AREA

Building 23 - Junior Caves, Room 26

Description	ANSTO action
Dangerous incident: A production operator was manually closing the outer roller door of Room 26, using the roller door chain. During the action of closing the roller door, the production operator felt "dust or grit" land on them. They stopped and stepped back to inspect at which point a piece of render (fist-sized) fell and landed where they had been standing.	*A Safety Alert was issued on the day of the incident to all occupants of the building as well as other key stakeholders.* *An assessment of the area was conducted to assess any ongoing risks; the area was deemed safe, but some precautionary steps were taken.* *The ANSTO investigation identified 11 actions to mitigate the risk of the incident reoccurring. This included remediation work that eliminated the risk.*

WORK AREA

Building 82 - Wombat Instrument Enclosure

Description	ANSTO action
Dangerous incident: During the set-up of equipment on a neutron beam instrument, a worker received an electric shock when they made contact with part of the equipment.	*The equipment was removed from service until it could be tested. Tests were performed on the equipment and the instrument distribution board. The equipment was found to be electrically safe and did not pose a risk for earth leakage. The distribution board failed 2/18 tests with two tests bearing inconclusive results. General power outlets points and the residual current breaker were removed and replaced.*

WORK AREA

Building 3 - Laboratory

Description	ANSTO action
Dangerous incident: A University of New South Wales student was conducting a laboratory experiment. During the experiment an over pressurisation of the contents of a vessel resulted in the lid of the vessel opening, leading to an uncontrolled release of a chemical. The student reported exposure to their forearm and inhalation of a minor amount, and exhibited minor symptoms. The ANSTO Occupational Health Centre followed up with the student who was cleared by their doctor. An ANSTO investigation is currently being completed.	*Under investigation*

Radiation safety

Everyone in the world is exposed to ionising radiation from natural sources. In addition, people may also be exposed to radiation from non-natural sources, including nuclear medicine procedures for the diagnosis and treatment of certain illnesses. Personal radiation exposure ('dose') is measured in sieverts (Sv). However, typical annual exposures are so small that they are usually expressed in units of one-thousandth of a sievert, known as a millisievert (mSv). Equivalent dose and effective dose are specific units used for radiological protection purposes.

ANSTO has a demonstrated capacity to safely manage its diverse nuclear and radioactive activities. During routine operations, ANSTO workers and members of the public attending ANSTO's campuses are exposed to miniscule levels of radiation. This low level of exposure is achieved through good management practices, which also allows for the delivery of the significant societal benefit associated with ANSTO's nuclear activities.

Occupational exposures

Some of the potential occupational health risks at our workplaces include exposure to chemicals, noise, biological and radiological hazards. In 2022, ANSTO was able to reinstate most of the routine occupational hygiene and personal dosimetry services to continue to gather data on our people's exposure to noise, chemicals, ionising radiation and other health hazards. This enables us to evaluate the risk to people and to determine control effectiveness and compliance.

The *Work Health and Safety Regulations 2011* are applicable in relation to the evaluation of workplace exposures for noise and managing risks from airborne contaminants and is monitored by Occupational Hygiene Services. In 2021, the vast majority of worker exposures were below chemical Workplace Exposure Standards (94 per cent). No workgroups were exposed in excess of the Workplace Exposure Standards when taking into account protection factors afforded by PPE.

Workers who use respiratory protective devices are provided with respirator fit testing to ensure they can achieve an adequate seal. Without an adequate seal on tight fitting respirators the wearer is still exposed to the environment around them, which in some circumstances can lead to adverse health effects. Respirator fit testing is provided by accredited and competent RESP-fit trainers in High Reliability. We are also moving forward with hearing protection fit testing and training for workers who use hearing protection devices.

In evaluating occupational exposures to ionising radiation, ANSTO uses both legal limits prescribed in the ARPANS Regulation 2018 and effective local dose constraints (or dose review levels). The radiation exposure of ANSTO's workers who are routinely engaged in working with ionising radiation is monitored by personal dosimetry services, with records of exposures maintained. Overall, personal dosimetry data for effective dose, shallow equivalent dose (skin dose) and extremity equivalent dose demonstrates compliance with radiological exposure limits. Approximately 95 per cent of ANSTO total effective dose results for 2021 showed no to low amounts (<1mSv) of radiation detected. Since the legal limit is averaged over five years, the monitoring results for the last five calendar years show that radiation doses received by ANSTO's occupationally-exposed workers remain significantly below regulatory limits (refer to Table 1). The maximum extremity equivalent dose to ANSTO's occupationally exposed workers in 2021 was 25.6 mSv, which equates to approximately five per cent of the legal limit. All other workers' extremity exposures were below 30 mSv. Similarly, the maximum shallow (skin) equivalent dose received in 2021 was 11.8 mSv which is approximately two per cent of the legal limit.

ANSTO is progressing with a project to upgrade and implement a new Electronic Personal Dosimetry System and associated software. Data from the software system is available in real time and downloaded to a database at the end of the shift enabling prompt action to be taken by the worker and work area if the potential exposure approaches pre-set decision-making criteria.

Table 1: Annual effective dose received by ANSTO workers over five consecutive years

All Staff	Calendar Year				
	2017	2018	2019	2020	2021
Maximum individual dose (mSv)	5.2	5.8	5.3	3.3	4.3
Average dose — all ANSTO workers (mSv)	0.5	0.4	0.4	0.4	0.3
Collective effective dose (person-mSv)	546	369	351	368	279
Dose limit (mSv)	20				

ARPANSA engagement

The main regulator with which ANSTO engages for radiation and nuclear safety is ARPANSA. During 2021–2022, there were no accidents reported to ARPANSA. However, ANSTO was found to be in breach of, and in non-compliance with, its licence conditions on two occasions, as follows:

Table 2: ARPANSA licence breaches in 2021-2022

Facility	Breach	Action taken
ANSTO Waste Management Services	Breach of licence condition-subsection 30(2) of the Act – Failure to comply with operational limits and conditions. ANSTO notified ARPANSA on 19 March 2022 that Waste Management Services did not comply with Operational Limits and Conditions relating to 3-yearly calibration requirements for level detectors.	*ANSTO has rectified the overdue calibration and has identified short and long-term strategies for improvements associated with the calibrations.*
Australian Synchrotron	Breach of licence condition-subsection 30(2) of the Act – Failure to undertake a self-assessment against applicable codes and standards. ANSTO had not undertaken a self-assessment, at least once every 3 years, against each applicable code and standard to comply with licence condition 2 of Facility Licence F0243.	*ANSTO has taken steps to ensure self-assessments against all relevant codes and standards are reviewed within the three-year period.*

ANSTO's progress in responding to the ARPANSA Safety Review (2018)

In June 2018, a review was conducted by a globally-recognised panel of experts, following a directive issued to ANSTO by the regulator, ARPANSA. The final report by the independent expert review team contains 85 recommendations in respect to ANSTO, ARPANSA, and the Australian Government. ARPANSA approved ANSTO's Response to the Independent Review of the ANSTO Health Approach to Occupational Radiation Safety and Operational Procedures (Implementation Plan) in December 2019. The ARPANSA Facility Licence for ANSTO Health was amended to require ANSTO to report to ARPANSA on the process of the Implementation Plan, starting with a report for the last quarter of 2019 and then at six monthly intervals until all actions are completed to the satisfaction of the ARPANSA CEO. (Ref — ANSTO Annual Report 2019–2020)

All associated documentation and evidence were submitted to ARPANSA via reports provided in the approved six-monthly cycle of reporting. As at 28 January 2022, a total of 85 recommendations (including 166 actions) were completed and verified by ANSTO as having been addressed.

Ensure ANSTO operates sustainably

Performance criterion	Measure	Result (2021–2022)
On-time completion (OT) of critical site compliance maintenance	**OT 95%**	**ACHIEVED** **99%** ✔

Analysis of performance

We are ensuring the sustainability of our operations by:

- committing to the achievement of a balanced budget
- safely and responsibly managing our radioactive waste
- reducing our environmental footprint
- maintaining and upgrading our infrastructure and sites to secure the continuity of activities.

ANSTO has met its on-time completion (OT) of critical site compliance maintenance for this year, with a result of 99 per cent. It is a continuing challenge to ensure sufficient resources are available to deliver our objectives. To address these challenges, we have placed an increased focus on strategies, plans, scheduling and detailed oriented meetings to ensure that we deliver critical site compliance maintenance at all times. This performance measure translates into our operational key performance indicators to accurately diagnose challenges, rectify issues and utilise our data to make significant integrity improvements. ANSTO utilises every opportunity to deliver projects whilst operating at business as usual; following an extensive tune review, an allocation of additional funding has provided ANSTO with the ability to make significant improvements around our sites.

Key activities for 2021–2022

How we deliver on our strategy and purpose.

Develop and implement world-leading, innovation radioactive waste treatment and management technologies

Corporate Plan 2021-2022 planned progress:

Preparation | Implementation

The Synroc® waste treatment technology is an exciting Australian innovation, integrating the design of both waste form and process technology. This immobilises radioactive waste, minimises volume, and provides an extremely durable and safe solution for final disposal. The new plant will treat liquid waste by-products from the manufacture of Mo-99. During the 2021–2022 financial year, construction of the facility reached practical completion and ANSTO has now commenced the fit-out process which will lead to the cold commissioning phase.

Implement intermediate-level waste (ILW) storage solutions — a new building and new tank farm

Corporate Plan 2021-2022 planned progress:

Construction of a new storage facility	Preparation
Construction of a new tank farm	Preparation

In the course of producing radiopharmaceuticals for both Australian and international communities, ANSTO generates different kinds of radioactive waste, which is safely managed onsite. Currently, ANSTO holds over 1,200 cubic metres of intermediate-level solid waste from legacy activities and generates an additional 20 cubic metres each year. This amount will increase with the commencement of operations of SyMo. A new interim storage facility will ensure that ANSTO can continue to manage these wastes safely and responsibly, which in turn supports the continued production of radiopharmaceuticals.

During 2021–22, preparations for the new ILW storage building continued with approval from ARPANSA for a siting licence in March and award of the tender for the design and construction of the facility. Over the next financial year, ANSTO aims to complete and submit to ARPANSA the application for a construction licence for the new storage facility, ensuring the project remains on track for completion in FY26.The new tank farm design is progressing and current tank farm remediations of the valve system have been completed. ANSTO aims to complete the design works for the replacement tank farm over the next year as planned, which will allow manufacture and installation processes to advance.

Waste return from the United Kingdom

Corporate Plan 2021-2022 planned progress:

Implementation

Australia's High Flux Nuclear Reactor (HIFAR) was operated by ANSTO for nearly 50 years, during which time it supported the supply of nuclear medicines. When the reactor ceased operation in 2007, "spent fuel" as a by-product of uranium fuel, as required under Australian Government policy, was reprocessed in the United Kingdom for its safe, long-term management in a TN-81 cannister containing vitrified spent fuel residues. This was successfully repatriated to Australia on 13 March 2022. On 14 March 2022, the cannister was placed in its storage configuration at ANSTO and successfully commissioned. ANSTO was congratulated by the then Minister for Science and Technology, the Hon Melissa Price MP, on a well-planned and orchestrated activity.

Campus Renewal Plan 2035

Corporate Plan 2021-2022 planned progress:

Preparation

The 2035 Campus Renewal Plan focuses on the review, development and consolidation of ANSTO's existing asset base and business functions. Four key enabling projects have commenced, allowing for the removal of aging infrastructure, reduction in our footprint and replacement of existing structures with sustainable buildings and facilities.

The enabling projects include:

- **Campus Utilities Building —**
  providing a centralised location for site essential services and enabling the removal of ageing legacy infrastructure
- **Calibration Centre —**
  providing modernised capabilities for the ongoing calibration of critical safety equipment for both ANSTO and external clients
- **Site Development Accommodation hub —**
  accommodating the project delivery teams required to deliver both current and future capital projects
- **Multi-purpose facility —**
  providing a centralised location for essential equipment storage and fleet management.

A 3D visualisation of a proposed new building at ANSTO's Lucas Heights campus.

Developing an Environmental Strategy

Corporate Plan 2021-2022 planned progress:

Preparation | Implementation | Completion

The ANSTO Environmental Sustainability Strategy has been developed, and as of December 2021, was presented to the ANSTO WHSE Executive Committee for endorsement, questioning and assumption testing. Now endorsed by the WHSE Committee, the Strategy will allow ANSTO to:

- start works such as updating internal processes and procedures
- start development works such as engaging industry partners and consultants
- develop management plans
- conduct in-depth cost analysis
- engage in other set up works to start the implementation of the goals
- determine how the goals can be delivered in the most beneficial manner for ANSTO.

This will include financial, social, reputational, environmental, risk-reduction and regulatory compliance.

Automation projects

Corporate Plan 2021-2022 planned progress:

Preparation

A series of automation projects across ANSTO will focus on continuous improvements with regard to OPAL, ANSTO Nuclear Medicine, our nuclear medicine manufacturing facility, radioactive waste management facilities, and the minerals operational area. These projects include automating nuclear medicine production processes, installing a radioactive contamination robot with inspection capabilities, and using automation to improve overall process efficiencies. During FY22, an automated robot was tested in a trial phase. This robot is designed to autonomously scan floor areas for radiological contamination, which offers many possible benefits, including minimisation of human involvement in radiological monitoring activities. ANSTO has established a team to focus on automation/process improvement of production processes, with the aim of implementing change for the replacement nuclear medicine facility.

Section 5:

Our organisation and people

Our people

Our people are our greatest asset. They are committed to creating a more sustainable world through science and technology, and they deliver all of ANSTO's beneficial outputs.

Our scientists, engineers and researchers are world-leaders in their field. They are trusted advisors in academia, industry and government. ANSTO's staff work across the entire spectrum of science and technology, including in research translation and commercialisation. Our support services staff, in various roles, are critical in enabling our organisation to continue to conduct our important science, engineering and technology-focused activities.

Staff numbers

As at 30 June 2022, we employed the equivalent of 1,306.18 full-time staff across New South Wales, Victoria and overseas, where full-time equivalent figures refer to our salaried staff (permanent and term contract).

Division	FTE (as at 30 June 2022)
ANSTO Maintenance and Engineering	**179.12**
Chief Operating Officer Group	**126.35**
Commercial Products and Services	**89.11**
Information Technology	**61.00**
Nuclear Operations and Nuclear Medicine	**329.00**
Nuclear Science and Technology	**445.75**
Office of the CEO	**75.85**
Total	**1306.18**

For more information on our staff numbers, refer to Appendices and Index — PGPA Rule section 17BE(ka) — Management of Human Resources.

Our campuses

ANSTO Australian Synchrotron | Clayton VIC

ANSTO Sydney Campus | Lucas Heights NSW

Our organisational structure

as at 30 June 2022

ANSTO Board of Directors

The Hon Dr Annabelle Bennett AC SC FAA

Board Chair

APPOINTED
21 March 2019

TERM CONCLUDES
20 March 2024

Penelope Dobson

Deputy Chair

APPOINTED
24 April 2014

APPOINTED DEPUTY CHAIR
14 March 2018

APPOINTED ACTING CHAIR
1 September 2018 – 20 March 2019

REAPPOINTED
24 April 2019

TERM CONCLUDES
23 April 2024

Shaun Jenkinson

Chief Executive Officer

APPOINTED (ACTING)
10 August 2020

APPOINTED
31 March 2021

TERM CONCLUDES
30 March 2024

Emeritus Professor Stephen Buckman AM

APPOINTED
23 July 2015

REAPPOINTED
23 July 2020

TERM CONCLUDES
22 July 2023

Professor Brigid Heywood

APPOINTED
28 June 2016

REAPPOINTED (ACTING)
28 June 2021

REAPPOINTED
28 September 2021

TERM CONCLUDED
27 September 2025

Greg Storr

APPOINTED
16 September 2021

TERM CONCLUDES
15 September 2024

Andrea Sutton

APPOINTED
30 April 2020

TERM CONCLUDES
29 April 2025

Gordon de Brouwer PSM

APPOINTED
4 April 2019

TERM CONCLUDED
30 June 2022

Professor Andrew Scott AM

APPOINTED
26 September 2007

REAPPOINTED
29 Semptember 2011

REAPPOINTED
26 September 2016

TERM CONCLUDED
28 September 2021

ANSTO Executives

John Edge
Chief Operating Officer

Con Lyras
Chief Engineer

Marianne Morton
Chief Information and Digital Officer

Pamela Naidoo-Ameglio
Group Executive Nuclear Precinct

Oleh Nakone
Group Executive Business Excellence

Andrew Peele
Group Executive Nuclear Science and Technology

ANSTO Subsidiaries

ANSTO's subsidiaries and companies operate in the context of the Corporate Plan to enhance our capabilities, deliver our purpose, and implement our strategy, as well as to provide transitional arrangements as we reorganise our activities.

ANSTO subsidiaries	Jurisdiction of operation	Achieving our purpose
PETTECH Solutions Pty Ltd	New South Wales	PETTECH Solutions Pty Ltd (PETTECH) is a wholly-owned ANSTO subsidiary that owns a cyclotron facility. On 2 January 2019, the business of this company was sold to Cyclotek NSW Pty Ltd. PETTECH Solutions Pty Ltd remains the owner of the major facility assets (building, cyclotrons and hot cells) and is entitled to a share of profits from the Cyclotek NSW business in connection with this arrangement.
		To conduct research and enable external use of our research capability and infrastructure for the national benefit **(Strategic objective 1)**
		To provide nuclear medicines and commercial services for the benefit of Australia and the world **(Strategic objective 2)**
ANSTO Nuclear Medicine Pty Ltd	New South Wales	ANSTO Nuclear Medicine Pty Ltd (ANM) is a Public Non-Financial Corporation of which ANSTO and the Minister for Industry, Science and Technology (on behalf of the Commonwealth) are shareholders. ANSTO is the operator of the ANM Molybdenum-99 (Mo-99) Production Facility, which produces of one of the world's most important nuclear medicines. Through ANM, ANSTO is able to supply Mo-99 to the Australian and global markets.
		To provide nuclear medicines and commercial services for the benefit of Australia and the world **(Strategic objective 2)**
ANSTO Inc.	Delaware, USA	Inactive. ANSTO Inc. was dissolved on 3 May 2022. Prior to its dissolution, ANSTO Inc. was inactive from 1 July 2021 to 2 May 2022.

Other companies*	Jurisdiction of operation	Achieving our purpose
Applied Molecular Therapies Pty Ltd	Victoria	Contract development and manufacture of radiopharmaceutical products.
		To provide nuclear medicines and commercial services for the benefit of Australia and the world **(Strategic objective 2)**

* Where ANSTO possesses a material interest

Management and accountability

During the 2021–2022 financial year, the Board worked closely with management on continuing to improve ANSTO's corporate governance, accountability and risk management practices. This is to ensure that ANSTO is able to deliver essential research, nuclear medicines, other products and services, as well as expert advice, safely and sustainably for the benefit of all Australians.

Minister and governing legislation

ANSTO is a corporate Commonwealth entity within the Industry, Science and Resources portfolio. From 1 June 2022 and as at 30 June 2022, the Minister with responsibility for ANSTO was the Hon Ed Husic MP, Minister for Industry and Science.

Previous Ministers responsible for ANSTO were the Hon Christian Porter MP, Minister for Industry, Science and Technology, from 1 July 2021 to 19 September 2021, the Hon Angus Taylor, Acting Minister for Industry, Science and Technology from 19 September 2021 to 8 October 2021, the Hon Melissa Price MP, Minister for Science and Technology from 8 October 2021 until 23 May 2022 and Senator the Hon Jonathon Duniam, Assistant Minister for Industry Development from 1 July 2021 to 23 May 2022. From 23 May 2022 to 1 June 22 the members of the interim Ministry, which included the Hon Anthony Albanese MP, the Hon Richard Marles, Senator the Hon Penny Wong, the Hon Jim Chalmers MP and Senator the Hon Katy Gallagher, were appointed to administer all Departments of State until the full Ministry was sworn in on 1 June 2022.

Statement of Expectations

In February 2020, the Hon Karen Andrews MP, then Minister for Industry, Science and Technology, provided the ANSTO Board with a Statement of Expectations in which she requested ANSTO's support in resolving national challenges and advancing the Government's policy priorities around nuclear medicines, collaboration with Australian industry, management of research infrastructure, the digital economy and promoting STEM equity.

In addition, Minister Andrews set clear expectations for ANSTO to continue to enhance organisational performance, including around sustainable operations and governance, and workplace health and safety. In August 2020, the ANSTO Board responded to the Statement of Expectations with a Statement of Intent, which sets out how the ANSTO Board seeks to meet the Minister's expectations. These statements can be found here: www.ansto.gov.au/about/how-we-work/governance.

Ministerial directions and notifications

Under the ANSTO Act and the PGPA Act, ANSTO's responsible Minister and the Finance Minister, may provide the ANSTO Board with Directions with respect to the performance of the functions or the exercise of the powers of the Board or the organisation. No such Ministerial Directions were received in 2021–2022.

ANSTO Board

The ANSTO Board is comprised of up to eight part-time, non-executive members drawn from the broader community and ANSTO's full-time CEO. Detailed information about the ANSTO Board, including appointment and cessation dates, is contained in the Appendices and Index — PGPA Rule section 17BE(j), (i)–(v) — Accountable Authority.

As at 30 June 2022, there were seven part-time non-executive members in addition to the CEO. All non-executive members are appointed by the Governor-General. Under the ANSTO Act, the CEO is appointed by the ANSTO Board. As a significant appointment, Cabinet endorsement is also required for the CEO position.

Board members have a broad range of skills, knowledge and experience that seek to cover ANSTO's diverse range of responsibilities. This is necessary in order for the Board to provide the guidance and stewardship needed to ensure ANSTO's sustainability and to determine and monitor the achievement of its strategic direction. The Board's Remuneration and Nomination Committee reviews the Board skills matrix at least annually; the skills matrix is used as the basis for making recommendations to Government concerning the appointment/reappointment of Board members. The remuneration and allowances payable to members of the Board, including the CEO, are determined by the Australian Government Remuneration Tribunal.

Board access to information

Board members have access to all information required to fulfil their role. Although information is primarily provided through Board papers and presentations at Board meetings, the Board is also provided with opportunities to gather information through other means. Board members have direct access to the CEO, other members of the Executive and, as required or requested, other managers and subject matter experts. They also receive regular CEO updates and regular media reports along with all Ministerial briefings and submissions.

Site tours are arranged, when practicable, to coincide with Board meetings to offer further opportunities for information gathering and to support engagement between the Board and the wider ANSTO staff. Board members also participate in individual site visits and meet both formally and informally with different divisions and groups of staff. COVID-19 restrictions led to the temporary suspension of site tours and visits from July 2021 until March 2022. Site tours during the reporting period included the Australian Synchrotron and SyMo, ANSTO's world-first Synroc Waste Treatment Facility, which is under construction. During the year, there was also an open session for staff at the Lucas Heights Campus to meet with the Board. There were also opportunities for staff engagement at the Clayton Campus including an all staff morning tea with the Board Chair.

Newly appointed Board members are inducted into the organisation's operations and activities, as well as their duties and responsibilities as a member of the Board of a corporate Commonwealth entity. During the reporting period, the induction program for the newly appointed Board member was modified due to COVID-19 restrictions with information being provided both online and in person.

To improve oversight and to increase the flow of information from ANSTO Nuclear Medicine Pty Ltd (ANM) to ANSTO, the ANSTO Board Chair and the ANSTO Risk and Audit Committee Chair, along with the CEO, Chief Operating Officer and Chief Financial Officer, meet with the ANM Chair and the ANM Risk and Audit Committee Chair to discuss opportunities, risks, finances and other material matters. During 2021–2022, two ANSTO and ANM Chair meetings were held.

Board members are able to seek independent professional advice in accordance with their duties, responsibilities and obligations as members of the Board.

Board meetings

The Board holds six formally scheduled meetings and a strategy session each year, with additional meetings held as required. Of the formally scheduled meetings, four are usually held at the Lucas Heights Campus, one is held at the Clayton Campus and one is held in Canberra. However, due to the COVID-19 pandemic and various travel restrictions, the format of meetings was adapted to the restrictions in place at the time. During the year, a combination of meeting formats was used including remote, hybrid and in person. In person meetings were held at both Lucas Heights and Clayton during the year. Despite these restrictions, the Board ensured its meetings continued to be effective and interactive through the use of video technology.

At the invitation of the Chair, members of the Executive and subject matter experts attend Board meetings as required to report on matters relevant to their individual areas of responsibility and expertise. The Secretary of the Department of Industry, Science and Resources, or a delegate, also attends regularly scheduled Board meetings at the invitation of the Chair, as an observer.

ANSTO has a Company Secretary who assists with the running of the Board and advises on governance matters. The Company Secretary attends all Board meetings, except those meetings or parts of meetings where that attendance is precluded by the ANSTO Act, and is accountable directly to the Board, through the Chair, on all matters to do with the proper functioning of the Board.

Nine Board meetings were held during the 2021–2022 financial year. The details of the number of Board meetings attended by each member during the 2021–2022 financial year are outlined in the Appendices and Index — PGPA Rule section 17BE(j), (i)– (v) — Accountable Authority.

Board committees

The Board is assisted by two standing committees which meet regularly:

Risk and Audit Committee —
provides independent oversight, advice and assurance to the Board on the appropriateness of ANSTO's systems of risk oversight and management, financial reporting processes, performance reporting arrangements, systems of internal control, and systems to ensure compliance with relevant laws and policies; and

Remuneration and Nomination Committee —
assists the Board in fulfilling its responsibilities with regard to overall remuneration policy and strategy; performance and remuneration of the CEO; the approach to performance and remuneration of the Executive Team; the context and composition of the Board and Committees; and succession planning and nominations for the CEO.

The role, purpose and responsibilities of each of the committees are set out in the relevant committee Charter. All Charters are reviewed annually. A review of the Charters, as part of the Board Charter review, was conducted during the 2021–2022 financial year. The Board approved the amended Charters at its meeting in December 2021. Amendments were made to the various Board and committee charters to simplify the language used, better reflect the operation of the committees and to provide greater clarity on the responsibilities of the committees.

All committee Charters are available here:
www.ansto.gov.au/about/how-we-work/governance

During the year, the Board also considered the continuing utility of the Commercial Committee. The Commercial Committee had originally been established to provide independent oversight, review and evaluation of particular commercial activities and had met on an ad hoc basis as required by the Board. As all material commercial matters are now being considered by the full Board, the Board determined that the Commercial Committee was no longer required and resolved to disband the Committee.

Other committees and working groups are established on an ad hoc basis as required by the Board. For example, during the year, a working group provided assistance to the Board in reviewing the terms of reference for an independent strategic research review.

Risk and Audit Committee

All committee members, including the Risk and Audit Committee Chair, are appointed by the Board. During the 2021–2022 financial year, the Risk and Audit Committee consisted of at least three non-executive Board members and two external representatives who had the required qualifications, knowledge, skills or experience to assist the Risk and Audit Committee in performing its functions, including an understanding of systems of risk oversight and management, finance and internal control. In accordance with the Risk and Audit Committee Charter, during the 2021–2022 financial year, there were:

- two committee members with accounting or related financial management experience and/or qualifications, commensurate with the scope of ANSTO activities, and one of those members had a comprehensive understanding of accounting and auditing standards; and
- one member with an understanding and experience of nuclear and radiation contexts and the associated risks and controls.

The Chair of the Board, the CEO, and the Chief Financial Officer cannot be members of the Risk and Audit Committee and attend meetings of that Committee ex officio.

Membership of the Risk and Audit Committee is reviewed periodically against a skills matrix to ensure that there is a suitable mix of qualifications, knowledge, skills and experience on the committee. There were no changes to the composition of the Risk and Audit Committee during 2021-2022.

There is an induction program for new Risk and Audit Committee members which includes site visits to both Lucas Heights and Clayton and meeting with different Executives, members of Management and subject matter experts.

Engagement activities for committee members are arranged, when practicable, to coincide with committee meetings to offer further opportunities for information gathering. COVID-19 restrictions led to the temporary suspension of site tours and visits from July 2021 until March 2022. During the reporting period, the Risk and Audit Committee toured the interim waste store and held discussions around risk with the project teams responsible for the Waste Return project and the Nuclear Medicine Production Facility Replacement project.

The Chair of the Board and other Board members may attend Risk and Audit Committee meetings as observers. Members of the ANSTO management team (including the Chief Operating Officer, Chief Financial Officer, Head of Internal Audit and the General Counsel) attend meetings of the Risk and Audit Committee as advisors and observers, by invitation of the Risk and Audit Committee Chair. The Company Secretary is the secretary to the Risk and Audit Committee and attends all Risk and Audit Committee meetings.

Representatives from the Australian National Audit Office (ANAO) and their contracted service provider (currently Ernst & Young) also attend Risk and Audit Committee meetings, by invitation of the Risk and Audit Committee Chair.

The Risk and Audit Committee met on eight occasions during the 2021–2022 financial year. Details of the number of RAC meetings attended by each member during the year are provided at Appendices and Index — PGPA Rule section 17BE(taa) — Audit Committee.

Remuneration and Nominations Committee

The Remuneration and Nominations Committee consists of the Board Chair, the CEO and one or more non-executive Board members appointed by the Board. The Board Chair is the Chair of the Committee. The Chief Operating Officer, who has responsibility for people-related matters, attends committee meetings by invitation, as do other relevant persons by invitation of the Chair. The Company Secretary is the secretary to the committee and attends all meetings, except those meetings or parts of meetings where that attendance is precluded by the ANSTO Act. The Remuneration and Nomination Committee met on three occasions during the 2021–2022 financial year.

Member	Eligible to attend	Attended
The Hon Dr Annabelle Bennett, AC SC (Chair)	3	3
Mr Shaun Jenkinson	3	3
Emeritus Professor Stephen Buckman, AM	3	3
Ms Penelope J Dobson	3	3

Board performance

In order to ensure its ongoing effectiveness and performance, the Board, along with its committees and its individual members, are evaluated regularly. As an external review was completed in the previous financial year, during 2021–2022, the Board decided to conduct an internal review of the Board and its Committees which involved the use of questionnaires. The questionnaires were completed by all Board and Committee members following the end of the financial year. There is time set aside at each Board and Risk and Audit Committee meeting for reflections on the meeting and both the Board and its Committees frequently discuss their operation, including the structuring of agendas and development of Board and Committee papers, and performance during meetings.

Disclosure of interests and related entity transactions

Board members declare material interests in accordance with the ANSTO and PGPA Acts as appropriate.

ANSTO follows the Commonwealth Procurement Rules and has a system of delegated powers and authorisations for all procurement transactions so as to ensure that transactions are appropriately considered. The ANSTO Board, as its accountable authority, approves the operational and capital budgets of ANSTO under a policy of the Board. Where there are operating expenses of $5 million or more, these transactions are approved by the Board.

The Board also approves expenditure on capital projects of $5 million or more. For transactions under $5 million, the CEO will approve transactions or delegations that are made to management although the CEO has the discretion to bring any of those matters to the Board for consideration. During the reporting period, ANSTO and its subsidiaries undertook 170 transactions with government entities or companies for goods and services above $10,000, which came to a total combined value of $43.0 million.

ANSTO executive management

The CEO is accountable for managing the affairs of the organisation in accordance with the strategy, plans and policies approved by the Board, as well as any Board Directions. The CEO is supported by an Executive team. As a team and through their individual roles, the Executive leads, directs, coordinates and controls ANSTO's operations and performance. The high-level structural changes that occurred across ANSTO during the reporting period include:

- the appointment of a new Group Executive for Nuclear Science and Technology, bringing together what was previously our Nuclear Science and Technology and Landmark Infrastructure cluster with our Research Translation and Synchrotron cluster;
- the appointment of a new Group Executive for Commercial Products and Services, which replaced the former Group Executive, Transformation and Engagement, and brings all of our commercial activities together; and
- the appointment of a new Group Executive for Nuclear Safety, Security and Stewardship, who started on 1 July 2022. This new Group incorporated High Reliability (Safety), Nuclear Security and Nuclear Safeguards, Nuclear Stewardship and the Nuclear Powered Submarines Working Group.

The Executive is supported by some key input committees and expert forums, including the Capital Committee, which makes decisions regarding the prioritisation and allocation of capital funding to projects to ensure their efficient delivery, and the Work, Health, Safety and Environment Committee, which is responsible for providing oversight and direction of ANSTO's safety and environment strategies, initiatives, incident management processes, targets and reporting.

The Executive further receives support in the areas of people matters, risk oversight, and security and safeguards oversight.

ANSTO recognises the important role of managers in the sharing of information. ANSTO's Managers' Forums are designed to ensure that managers who drive strategy, as well as planning and leading teams, are equipped with the right information at the right time so they are in a position to take responsibility for core strategic and operational projects. The Forums provide managers with information on ANSTO's strategy and an opportunity to ask questions of the CEO and other Executives, as well as the opportunity to converse with peers on troubleshooting and problem solving. There were four Managers' Forums held during 2021–2022.

Integrated Business Planning Framework

ANSTO's Integrated Business Planning (IBP) process ensures ANSTO delivers on its purpose and strategy. It is a formal data-driven process led by senior management, which, on a monthly basis, evaluates and aggregates bottom-up data, time-phased projections for new products, services and capabilities, demand, supply, strategic projects and the resulting financial plans. It is a decision-making process that realigns the tactical plans for all organisational functions in support of ANSTO's goals and targets. A primary objective of IBP is to monitor performance against the organisational strategy and the plans that underpin the strategy. The process ensures integration of activities and prioritisation of resources against an approved operating plan, to which Executives and Managers hold themselves accountable.

Internal control

The ANSTO Board oversees ANSTO's system of internal control. This system has been designed to provide 'reasonable assurance' that ANSTO's objectives will be achieved, and encompasses the control environment, risk assessment, control activities, information and communication, and monitoring activities.

Risk management framework

Management is accountable to the ANSTO Board for designing, implementing and continuously improving the ANSTO Enterprise Risk Management (ERM) framework. The ERM framework is aligned with best practice and has been designed to support the achievement of business goals and objectives, support decision making, and standardise risk management processes. ANSTO recognises that risk management is essential to preserve and create value. There is a need to engage with risk or exploit opportunity while also managing uncertainty on an ongoing basis. The ANSTO Board has set clear expectations for the management of risk at ANSTO.

The ANSTO Board determines the nature and extent of the risk it is willing to accept in achieving the organisation's strategic objectives, consistent with ANSTO's risk appetite as well as the effective, efficient, ethical and economical use and management of public resources. The ANSTO Board takes a particular interest in those risks that may affect the safety of ANSTO staff and its operations and/or negatively affect the sustainability and reputation of the organisation.

The Risk and Audit Committee receives regular reports and briefings on ANSTO's top risks and significant risks associated with operations and major capital programs.

Fraud control

ANSTO has specific obligations under section 10 of the PGPA Rule to take all reasonable measures to prevent, detect and deal with fraud.

The ANSTO Fraud Control Plan reflects the 'better practice' principles and practices articulated within the Commonwealth Fraud Control Framework.

In addition, ANSTO operates a public interest disclosure scheme in accordance with the *Public Interest Disclosure Act 2013* (Cth). Complementary to this scheme, ANSTO has a confidential, independent and externally-hosted reporting service (FairCall), which provides another avenue for staff and contractors to report any concerns about unacceptable, unethical or illegal activities in the workplace.

Ethics

Business ethics play a key role in the proper governance of an organisation. The Code of Conduct is aligned to ANSTO's values and provides ANSTO employees with a framework for ethical decision making. It articulates the standards of behaviour, values and actions expected of all individuals who work for ANSTO. ANSTO's values and ethical standards are reinforced through various means, including training and awareness, staff engagement surveys and the ANSTO Enterprise Agreement.

Business resilience

Operational continuity is a focus area of the Board, the CEO and Executives. ANSTO's leadership is keenly aware that a range of ANSTO's products and services, notably radiopharmaceuticals, are important to the economic and social wellbeing and health of the Australian community.

ANSTO's Business Resilience Framework is implemented through a Business Continuity Management System. Business areas periodically review their disruption risks, business impact assessments and continuity plans. While most response and recovery actions are handled as routine management, the Business Resilience Framework has provision for activating an Incident Management Team and the Executive Crisis Management Team, if required. ANSTO has adopted the Australian Inter-Service Incident Management System for internal control and for coordination with external agencies. The Emergency Operations function is responsible for the coordination, preparation and resourcing of, as well as operational response to, incidents and emergencies.

Through the COVID-19 pandemic ANSTO maintained operations while taking a flexible approach to working. In order to meet regulatory, work, health and safety, and security requirements, as well as to support construction and maintenance work onsite, and to ensure the ongoing production of nuclear medicine, there is a requirement for certain critical roles to be onsite, specifically in nuclear security, reactor operations and the production of nuclear medicine. Many other functions within the organisation were able to continue through remote working arrangements for an extended period of time, with limited impact.

In 2021, an external audit of the 2017-18 Business Resilience Framework review was conducted. In response, the Chief Operating Officer commenced a multi-year project to deliver further Framework improvements.

Operational governance — compliance and regulatory affairs

ANSTO operates within a highly regulated environment. In recognition of this environment, ANSTO has established policies procedures and systems to comply with relevant laws and regulations. The continuing development and improvement of ANSTO's compliance framework remains a key focus. Pursuant to section 19(1)(e) of the PGPA Act, ANSTO had no instances of significant non-compliance with finance law in 2021–2022.

Internal Audit

The ANSTO Internal Audit function provides the ANSTO Board and CEO with independent and objective assurance and advisory services. The scope of Internal Audit's activities encompasses all financial and non-financial functions, systems, programs, projects, activities and processes across ANSTO and its subsidiaries.

The Head of Internal Audit prepares risk-based strategic and annual work plans in consultation with the Risk and Audit Committee, Executive management and the ANAO. The annual Internal Audit Plan is reviewed by the Risk and Audit Committee and approved by the ANSTO Board.

The outcomes of internal audit reviews are presented to the Risk and Audit Committee. Follow-up reviews are conducted to ensure that internal audit recommendations are properly implemented.

In order to ensure the independence of the Internal Audit function, the Head of Internal Audit reports directly to the Risk and Audit Committee and has unrestricted access to the Risk and Audit Committee Chair and members, as well as to the Chair of the Board.

For administrative purposes, the Head of Internal Audit reports to the Chief Operating Officer.

The role, purpose, scope and authority of the Internal Audit function is set out in the Internal Audit Charter. This Charter is reviewed by the Risk and Audit Committee and approved by the ANSTO Board.

External Audit

The Commonwealth Auditor-General, through the ANAO, is the external auditor for ANSTO and its Australian-based subsidiaries. ANSTO's United States-based subsidiary, ANSTO Inc., was dissolved during the period and its final audit was performed by Wipfli LLP.

For the 2021–2022 financial year, the ANAO contracted Ernst & Young to assist with the external audits of ANSTO and its Australian-based subsidiaries. Ernst & Young did not provide any non-audit services to ANSTO during the period 1 July 2021 to 30 June 2022.

Reports issued by the Commonwealth Auditor-General

Other than reports issued in relation to the audit of the financial statements of ANSTO and its Australian based subsidiaries, there was one report about ANSTO made by the Auditor-General during the financial year.

A performance audit on the Management Nuclear Medicine Assets (Auditor-General Report No. 26 of 2021–22) was tabled in parliament on 10 May 2022. This was an independent performance audit to assess the effectiveness of ANSTO's management of assets involved in the manufacture, production and distribution of nuclear medicines. The audit found that:

- ANSTO's management of nuclear medicine assets is partly effective;
- ANSTO's asset management framework is largely fit for purpose;
- Planning and implementation of asset acquisition and disposal is partly effective;
- Maintenance practices for the nuclear medicine assets are developing; and
- ANSTO's measurement and monitoring of asset performance is partly effective.

The Auditor-General made six recommendations to ANSTO, aimed at improving ANSTO's asset management framework, asset disposal planning and practices, maintenance planning, and asset performance framework and measures. ANSTO agreed to all six recommendations.

Judicial and Administrative Tribunal decisions

There were no judicial decisions or decisions of administrative tribunals that had a significant impact on the operations of ANSTO during the financial year.

Office of the Australian Information Commissioner decisions

There were no decisions made or issued by the Australian Information Commissioner in the last financial year.

Parliamentary committees

A Public Works Committee report was released in October 2021 to inquire into, and report on, the Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW.

Reports by the Commonwealth Ombudsman

There were no reports on the operations of ANSTO by the Commonwealth Ombudsman during the financial year.

Indemnities

ANSTO's insurance coverage with Comcover includes professional indemnity as well as directors' and officers' liability. Certain sections of the PGPA Act contain prohibitions against ANSTO giving indemnities and paying insurance premiums relating to liabilities arising from conduct involving a lack of good faith by officers, amongst other conduct.

There have been no exceptions to these provisions and no claims were made against ANSTO in respect of such directors' and officers' or professional liability that required a claim on ANSTO's insurer, Comcover. It should be noted that ANSTO subsidiaries are fully covered under ANSTO's overarching Comcover policies. Workers compensation coverage is dependent on whether employees of a subsidiary are Commonwealth Government employees or employed under state labour legislation.

Nuclear liability

ANSTO is provided with insurance coverage for ionising radiation liability from Comcover for up to $50 million. The Comcover policy includes liability arising out of ANSTO's responsibility for:

- managing, storing and conditioning ionising radiation emitting material and waste;
- transporting nuclear waste and materials for disposal both within Australia and overseas; and
- transporting radioactive materials including radioisotopes.

For any liability that is not covered by Comcover, ANSTO has been provided with a Deed of Indemnity by the Commonwealth that commits the Commonwealth to providing an indemnity to cover any loss or liability incurred by ANSTO and ANSTO Nuclear Medicine Pty Ltd, their respective employees and contractors, which arise from a claim for injury to a person or damage to property caused by ionising radiation. The current Deed expires in April 2026.

Privacy

ANSTO is committed to protecting personal information in accordance with the *Privacy Act 1988* (Cth) and the Australian Privacy Principles. The privacy function sits within the Chief Operating Officer Group and a Privacy Champion has been appointed as required by the Privacy (Australian Government Agencies — Governance) Australian Privacy Principle Code 2017.

The aim of this function is to enhance existing privacy capabilities within ANSTO, build greater transparency in information handling practices, ensure legislative compliance, and foster a culture of respect for privacy and the value of personal information. To achieve this aim, ANSTO has a documented Privacy Management Plan that identifies specific, measurable privacy goals and targets and sets out how ANSTO will meet its compliance obligations under the Australian Privacy Principles.

ANSTO also conducts privacy impact assessments for all IT systems and projects that involve significant personal information transfer or collection, undertakes regular reviews, and updates its privacy practices, procedures and systems to ensure their currency and adequacy for the purposes of compliance with the Australian Privacy Principles. ANSTO is actively enhancing internal privacy capabilities by providing appropriate privacy education and training to all staff who have access to personal information.

Freedom of Information

The *Freedom of Information Act 1982* (FOI Act) provides the public with a general right of access to documents held by Australian Government agencies, by requiring agencies, such as ANSTO, to publish the information and provide a right of access to the documents. This general right is limited by exceptions to protect essential public interests, including the privacy of individuals and the business affairs of those who give information to the agency. In the reporting year to 30 June 2022, ANSTO received four (4) requests for information under section 15 of the FOI Act. ANSTO is required to publish information to the public as part of the Information Publication Scheme (IPS). The IPS is designed to promote open and transparent communication of government information. Set out below is the information required to be published by ANSTO under Part II of the FOI Act.

1. **ANSTO's Agency Plan**

   ANSTO's Information Publication Scheme plan is currently available on the ANSTO website at:

   www.ansto.gov.au/access-to-information

2. **Details of the structure of the Agency's organisation**

   An organisational chart detailing the structure of ANSTO can be found in Section 5: Our organisation and people — Our organisational structure.

3. **Details of ANSTO's functions, including its decision-making powers and other powers affecting members of the public**

   Information in relation to ANSTO's powers and functions can be found in Appendices and Index — Functions and powers of the organisation under the ANSTO Act. Information about ANSTO's purpose and values, Board composition, Corporate Plan and Service Charters can be found on ANSTO's website at:

   www.ansto.gov.au/governance

4. **Details of officer appointments at ANSTO**

   Details of officer appointments can be found in Appendices and Index — Details of Accountable Authority during the reporting period (2021–2022) and a link to this information can also be found on ANSTO's website at:

   www.ansto.gov.au/governance

5. **ANSTO's Annual Report**

   A link to this annual report and annual reports from previous years can be found on ANSTO's website at:

   www.ansto.gov.au/corporate-publications

6. **Details of arrangements for members of the public to comment on specific policy proposals for which ANSTO is responsible**

   ANSTO regularly communicates with its stakeholders, which include the local community and councils, relevant federal Ministers, and other Government-related personnel at both state and federal levels to ensure that they are kept up to date about what is happening at ANSTO. The community is kept informed of ANSTO's operations via the website, which publishes news updates and media releases. A link to this information can be found on ANSTO's website at:

   www.ansto.gov.au/news

7. **Information that ANSTO routinely gives access to in response to requests for access under the FOI Act (excluding documents exempt from production under the FOI Act)**

   During 2021–2022 there was no requested documentation falling within this category.

8. **ANSTO's FOI disclosure log**

   The FOI disclosure log lists information which has been released in response to a FOI access request. The disclosure log requirement does not apply to:

   - personal information about any person if publication of that information would be 'unreasonable';
   - information about the business, commercial, financial or professional affairs of any person if publication of that information would be 'unreasonable';
   - other information covered by a determination made by the Australian Information Commissioner if publication of that information would be 'unreasonable'; and
   - any information if it is not reasonably practicable to publish the information because of the extent of modification that would need to be made to delete the information listed in the above dot points. A link to ANSTO's disclosure log can be found on ANSTO's website at:

     www.ansto.gov.au/access-to-information

9. Information held by ANSTO that is provided to Parliament

A link to the information that ANSTO provides to parliament can be found on ANSTO's website at:

www.ansto.gov.au/access-to-information

10. Contact details of ANSTO officers who can be contacted about access to information or documents under the FOI Act

Direct enquiries in relation to FOI process to the (request to be directed to the FOI Coordinator):

Mail:
FOI Coordinator, ANSTO, Locked Bag 2001,
Kirrawee DC NSW 2232

Email: foi@ansto.gov.au

Telephone: +61 2 9717 3111

These contact details can be found on ANSTO's website.

11. Operational information required under section 8 of the FOI Act, that is, information held by ANSTO to assist in the performance or exercise of ANSTO's functions or powers in making decisions or recommendations affecting members of the public

ANSTO has a range of publications, reports and information available for the public, including our Annual Reports, Corporate Plan, information on safety, research reports, educational books and leaflets, and DVDs. ANSTO also provides access to a searchable database of all of ANSTO's science publications, as well as an online archive for older publications. View the database at:

www.ansto.gov.au/research/publication

Section 6:

Financial statements

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Industry and Science

Opinion

In my opinion, the financial statements of the Australian Nuclear Science and Technology Organisation and its subsidiaries (together the Consolidated Entity) for the year ended 30 June 2022:

(a) comply with Australian Accounting Standards – Simplified Disclosures and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and

(b) present fairly the financial position of the Consolidated Entity as at 30 June 2022 and its financial performance and cash flows for the year then ended.

The financial statements of the Consolidated Entity, which I have audited, comprise the following as at 30 June 2022 and for the year then ended:

- Statement by the Accountable Authority, Chief Executive Officer and Chief Financial Officer;
- Consolidated Statement of Comprehensive Income;
- Consolidated Statement of Financial Position;
- Consolidated Statement of Changes in Equity;
- Consolidated Cash Flow Statement; and
- Notes to the financial statements comprising a summary of significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Consolidated Entity in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's responsibility for the financial statements

As the Accountable Authority of the Consolidated Entity, the directors are responsible under the *Public Governance, Performance and Accountability Act 2013* (the Act) for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Simplified Disclosures and the rules made under the Act. The directors are also responsible for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the ability of the Consolidated Entity to continue as a going concern, taking into account whether the Consolidated Entity's operations will cease as a result of an administrative restructure or for any other reason. The directors are also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting, unless the assessment indicates that it is not appropriate.

GPO Box 707, Canberra ACT 2601
38 Sydney Avenue, Forrest ACT 2603
Phone (02) 6203 7300

Auditor's responsibilities for the audit of the financial statements

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Consolidated Entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Consolidated Entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Consolidated Entity to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation; and
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Consolidated Entity to express an opinion on the financial report. I am responsible for the direction, supervision and performance of the Consolidated Entity audit. I remain solely responsible for my audit opinion.

I communicate with the Accountable Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office

Bradley Medina
Executive Director
Delegate of the Auditor-General

Canberra
16 September 2022

Statement by Accountable Authority, Chief Executive and Chief Financial Officer

In our opinion, the attached financial statements for the year ended 30 June 2022 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Australian Nuclear Science and Technology Organisation will be able to pay its debts as and when they fall due.

Signed in accordance with a resolution of the Board of Directors.

Annabelle Bennett
Accountable Authority - Chair

16 September 2022

Shaun Jenkinson
Chief Executive Officer

16 September 2022

Emily Hodgson
Chief Financial Officer

16 September 2022

New Illawarra Road, Lucas Heights (Locked Bag 2001, Kirrawee DC 2232) **ABN** 47 956 969 590 **T** +61 2 9717 3111
www.ansto.gov.au

Consolidated Statement of Comprehensive Income

For the year ended 30 June 2022

	Note	Budget 2022 $'000	Actual 2022 $'000	Actual 2021 $'000
Continuing operations				
Net cost of services				
Expenses				
Employee benefits	1.1A	164,210	158,183	157,905
Supplier	1.1B	136,051	133,406	118,346
Depreciation and amortisation	2.2A	86,472	94,292	83,717
Impairment losses	2.2A	-	5,765	54,528
Write-down of inventory and fixed assets	1.1C	-	487	244
Decommissioning provision losses	2.3C	-	-	109,764
Nuclear waste management provision losses	2.3C	-	-	7,930
Nuclear waste management expenses	2.3C	-	29,456	4,966
Grant		3,158	2,143	1,693
Finance costs	1.1D	8,525	15,713	10,872
Foreign currency exchange losses		-	490	1,369
Total expenses		**398,416**	**439,935**	**551,334**
Own-source revenue				
Revenue from contracts with customers	1.2A	87,346	97,581	80,266
Interest	5.2	1,819	721	993
Rental income		7,195	-	-
Royalties		3,847	-	-
Grant income		51,096	39,255	30,149
Total own-source revenue		**151,303**	**137,557**	**111,408**
Other income				
Decommissioning provision gains	2.3C	-	195,121	-
Nuclear waste management provision gains	2.3C	-	17,190	-
Foreign currency exchange gains		-	7,648	273
Gains from asset sales		-	130	126
Gains arising from lease modification		-	98	-
Total other income		**-**	**220,187**	**399**
Total own-source income		**151,303**	**357,744**	**111,807**
Net cost of services		**(247,113)**	**(82,191)**	**(439,527)**
Revenue from Government	3.1	277,453	279,506	278,819
Surplus/(deficit) before income tax		**30,340**	**197,315**	**(160,708)**
Income tax benefit	1.1E	-	341	10
Surplus/(deficit) after income tax		**30,340**	**197,656**	**(160,698)**
Other comprehensive income				
Items that will not be subsequently reclassified to net cost of services				
Changes in asset revaluation reserve	2.4A	-	(22,487)	116,872
Total comprehensive surplus/(deficit)		**30,340**	**175,169**	**(43,826)**

The above statement should be read in conjunction with the accompanying notes.
The budget variance commentary is contained in the Other Information section (Note 6.4).

Consolidated Statement of Financial Position

As at 30 June 2022

	Note	Budget 2022 $'000	Actual 2022 $'000	Actual 2021 $'000
Assets				
Financial assets				
Cash and cash equivalents	2.1A	4,527	41,624	34,288
Trade and other receivables	2.1B	64,736	24,738	17,789
Investments	2.1C	195,860	185,703	192,063
Total financial assets		**265,123**	**252,065**	**244,140**
Non-financial assets				
Property, plant and equipment	2.2A	1,206,612	1,204,904	1,208,839
Intangible assets	2.2A/B	50,232	76,546	67,169
Inventories	2.2C	40,760	43,424	50,230
Deferred tax asset	1.1E	792	424	293
Prepayments		3,129	21,377	9,078
Total non-financial assets		**1,301,525**	**1,346,675**	**1,335,609**
Total assets		**1,566,648**	**1,598,740**	**1,579,749**
Liabilities				
Payables				
Suppliers		7,952	13,055	18,859
Employees	4.1	-	4,604	4,882
Other payables	2.3A	-	11,660	6,379
Total payables		**7,952**	**29,319**	**30,120**
Interest bearing liabilities				
Lease liabilities	2.3D	543	385	3,646
Total interest bearing liabilities		**543**	**385**	**3,646**
Revenue in advance	2.3B	**13,100**	**20,227**	**32,236**
Provisions				
Employees	4.2	50,293	58,533	54,337
Decommissioning	2.3C	727,556	547,735	731,817
Nuclear waste management	2.3C	-	139,730	140,157
Intellectual property payment	2.3C	-	27,383	37,105
Other provisions	2.3C	-	-	259
Total provisions		**777,849**	**773,381**	**963,675**
Total liabilities		**799,444**	**823,312**	**1,029,677**
Net assets		**767,204**	**775,428**	**550,072**
Equity				
Contributed equity		959,164	971,521	921,334
Reserves	2.4A	396,479	490,238	513,341
Accumulated deficit		(588,439)	(686,331)	(884,603)
Total equity		**767,204**	**775,428**	**550,072**

The above statement should be read in conjunction with the accompanying notes.
The budget variance commentary is contained in the Other Information section (Note 6.4).

Consolidated Statement of Changes in Equity

For the year ended 30 June 2022

	Accumulated deficit		Asset revaluation reserve		Other reserves		Contributed equity		Total	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Balance at 30 June 2020	**(723,905)**		**386,469**		**10,000**		**900,869**		**573,433**	
Deficit for the year	(160,698)		-		-		-		(160,698)	
Other comprehensive income										
Revaluation increment	-		116,872		-		-		116,872	
Total comprehensive surplus/(deficit) for the year	**(160,698)**		**116,872**		**-**		**-**		**(43,826)**	
Transactions with owners										
Government equity injection	-		-		-		20,465		20,465	
Balance at 30 June 2021	**(884,603)**	**(618,779)**	**503,341**	**386,468**	**10,000**	**10,011**	**921,334**	**921,334**	**550,072**	**699,034**
Surplus for the year	197,656	30,340	-	-	-	-	-	-	197,656	30,340
Other comprehensive income										
Revaluation decrement	-	-	(22,487)	-	-	-	-	-	(22,487)	-
Total comprehensive surplus/(deficit) for the year	**197,656**	**30,340**	**(22,487)**	**-**	**-**	**-**	**-**	**-**	**175,169**	**30,340**
Transactions with owners										
Transfers	616	-	-	-	(616)	-	-	-	-	-
Government equity injection	-	-	-	-	-	-	50,187	37,830	50,187	37,830
Balance at 30 June 2022	**(686,331)**	**(588,439)**	**480,854**	**386,468**	**9,384**	**10,011**	**971,521**	**959,164**	**775,428**	**767,204**

The above statement should be read in conjunction with the accompanying notes.

Consolidated Statement of Cash Flows

For the year ended 30 June 2022

	Note	Budget 2022 $'000	Actual 2022 $'000	Actual 2021 $'000
Cash flows from operating activities				
Contracts with customers		94,541	103,985	84,292
Grants received		27,912	28,099	24,433
Interest received		1,819	478	1,427
Receipts from Government		277,453	279,506	278,819
Payments to employees		(164,210)	(154,395)	(155,428)
Payments to suppliers		(136,064)	(158,259)	(126,845)
Payments for decommissioning	2.3C	(7,006)	(3,477)	(4,182)
Payments for nuclear waste management	2.3C	-	(13,812)	(2,608)
Net cash from operating activities		**94,445**	**82,125**	**99,908**
Cash flows from investing activities				
Proceeds from sale of property, plant, equipment and intangibles		-	173	184
Proceeds from maturing financial instruments		136,343	296,360	480,575
Purchase of financial instruments		(113,045)	(290,000)	(457,720)
Other		(14,414)	-	-
Purchase of property, plant, equipment and intangibles	2.2A	(141,034)	(131,362)	(121,551)
Net cash used in investing activities		**(132,150)**	**(124,829)**	**(98,512)**
Cash flows from financing activities				
Government equity injection		37,830	50,187	20,465
Principal and interest payments on lease liabilities	2.3D	(124)	(147)	(141)
Net cash from financing activities		**37,706**	**50,040**	**20,324**
Net (decrease)/increase in cash and cash equivalents		**1**	**7,336**	**21,720**
Cash and cash equivalents at the beginning of the reporting year		4,526	34,288	12,568
Cash and cash equivalents at the end of the reporting year	2.1A	**4,527**	**41,624**	**34,288**

The above statement should be read in conjunction with the accompanying notes.

Overview

Objectives of Australian Nuclear Science and Technology Organisation

Australian Nuclear Science and Technology Organisation (ANSTO) is a not-for-profit Australian Government Corporate Commonwealth entity incorporated and domiciled in Australia.

Registered office
New Illawarra Road
Lucas Heights
NSW 2234
Australia

ANSTO's strategic objectives, as set out in its current Corporate Plan, are:

- Putting our people first: Provide a safe, sustainable and inclusive environment that empowers our people and supports a culture of collaboration and engagement;
- World leading research and technology outcomes: Undertake research with strategic partners that is translational and serves users;
- Strategic management of landmark and national infrastructure: Provide platforms and development pathways to enable world-class research that creates economic impact and benefits;
- Nuclear and related expertise and advice: Provide expert advice, education and services to support Australian policy and strengthen Australia's nuclear science knowledge base;
- Nuclear medicines for Australia and the world: Support better healthcare for all Australian and international customers with nuclear medicine products; and
- Places and spaces for business and partnerships: Innovation Precinct, partnerships and services, delivering impactful and sustainable outcomes.

In the 2021-22 Portfolio Budget Statements ANSTO has only one outcome as reflected below:

Outcome 1: Improved knowledge, innovative capacity and healthcare through nuclear-based facilities, research, training, products, services and advice to Government, industry, the education sector and the Australian population.

ANSTO's activities contributing towards the outcome are classified as departmental. Departmental activities involve the use of assets, liabilities, income and expenses controlled or incurred by ANSTO in its own right. The continued existence of ANSTO in its present form and with its present programs is dependent on Government policy and on continuing funding by Parliament for the entity's administration and programs.

Reference to ANSTO means ANSTO and its controlled entities except in Notes 1.1E and 6.2.

Basis of preparation of the financial statements

The financial statements required by section 42 of the *Public Governance, Performance and Accountability Act 2013*.

The financial statements have been prepared:

a) having regard to the provisions of the *Australian Nuclear Science and Technology Organisation (ANSTO) Act 1987* (as amended); and
b) in accordance with:
   i. *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015* (FRR); and
   ii. Australian Accounting Standards and Interpretations – including simplified disclosures for Tier 2 Entities under AASB 1060 issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

Overview (continued)

Basis of preparation of the financial statements

The financial statements have been prepared on an accrual basis and in accordance with the historical cost convention, except for certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position. Where necessary the comparative information for the preceding financial year has been reclassified to achieve consistency in disclosure with current financial year amounts.

The financial statements are presented in Australian dollars and values are rounded to the nearest thousand dollars unless otherwise specified.

The financial statements were authorised for issue by the Board of Directors on 16 September 2022.

Foreign currency

Transactions denominated in a foreign currency are converted to Australian currency at the rate of exchange prevailing at the date of the transaction. At reporting date, amounts receivable and payable in foreign currency are translated to Australian currency at the exchange rate prevailing at that date and any exchange differences are brought to account in the Statement of Comprehensive Income. ANSTO does not enter into speculative forward exchange contracts.

Principles of consolidation

The consolidated financial statements incorporate the financial statements of ANSTO and the entities it controls. Control is achieved when ANSTO has all of the following:

- power over the investee;
- is exposed, or has rights, to variable returns from its involvement with the investee; and
- the ability to use its power to affect its returns.

Consolidation of a subsidiary begins when ANSTO obtains control over the subsidiary and ceases when they lose control of the subsidiary. All intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation. Profit or loss and each component of other comprehensive income are attributed to the owners of the entity and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the entity and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance. Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognised directly in equity and attributed to ANSTO.

Overview (continued)

Significant accounting judgements and estimates

In the process of applying the accounting policies listed in this note, management has made a number of judgements and applied estimates and assumptions to future events. Information regarding judgements and estimates which are material to the financial statements are found in the following notes:

- Notes 2.2A and 5.3: Property, plant and equipment fair value measurement and useful lives;
- Note 2.3C: Decommissioning and waste provisions phasing of work and discounted cash flow assumptions; and
- Note 2.2B: Recoverable amount of the intangible asset relating to intellectual property and fair value of the associated liability.

Apart from these assumptions and estimates no other accounting assumptions or estimates have been identified that have a significant risk of causing a material adjustment to carrying amounts of assets and liabilities within the next accounting period.

Impact of COVID-19
The COVID-19 pandemic continued to develop in FY22. Measures taken by various governments to contain the virus have affected economic activity, particularly through social distancing and the closing of borders. ANSTO has taken a number of measures to monitor and mitigate the effect of COVID-19, such as safety and health measures for our people (including social distancing and working from home) and securing the supply of materials that are essential to our production process. ANSTO's capital program has also been impacted by COVID through supply chain disruptions both in Australia and internationally.

The impact on ANSTO and its FY22 results has not been significant and based on experience this is expected to remain the case. ANSTO's cash increased by approximately $4 million in FY22 (decreased in FY21: $11.7 million) as a result of lower revenue being offset by lower than planned capital expenditure. The cash impacts are primarily driven from the loss of revenue due to both closure of borders and changes in shift patterns to protect staff and secure production which in FY22 have been offset by delays in capital expenditure.

ANSTO will continue to follow the various government policies and advice and, in parallel, ANSTO will do its utmost to continue operations in the best and safest possible way without jeopardising the health of our people and safeguarding the supply of nuclear medicine into the Australian market.

Adoption of new Australian Accounting Standard requirements

ANSTO adopted the following new and revised Australian Accounting Standards issued by the Australian Accounting Standards Board that are mandatorily effective for accounting periods that ended on 30 June 2022. The respective accounting standards have had no material effect on ANSTO's financial statements.

ANSTO has initially applied AASB 1060 *General Purpose Financial Statements – Simplified Disclosures for For-Profit and Not-for-Profit Tier 2 Entities*, AASB 2021-1 *Amendments to Australian Accounting Standards – Transition to Tier 2: Simplified Disclosures for Not-for-Profit Entities* and AASB 2021-2 *Amendments to Australian Accounting Standards – Disclosure of Accounting Policies and Definition of Accounting Estimates.*

No accounting standard has been adopted earlier than the application date as stated in the standard.

1. Financial Performance

This section details the financial performance of ANSTO.

1.1 Expenses

1.1A Employee benefits

	2022	2021
	$'000	$'000
Wages and salaries	115,142	114,873
Superannuation	24,783	24,690
Leave and other entitlements	17,370	17,075
Separation and redundancies	888	1,267
Total employee benefits	**158,183**	**157,905**

Accounting policy

Liabilities for 'short-term employee benefits' (as defined in AASB 119 *Employee Benefits*) and termination benefits expected within twelve months of the end of reporting period are measured at their nominal amounts.

Other long-term employee benefits are measured as the total net present value of the defined benefit obligation at the end of the reporting period.

Leave

Annual and long service leave, including applicable on-costs that are not expected to be wholly settled before 12 months after the end of the reporting period when the employees render the related service, are measured at the present value of estimated future payments to be made in respect of services provided by employees up to the reporting date. The provision for employee entitlements encompasses annual leave and long service leave that ANSTO has a present obligation to pay resulting from employee services provided up to reporting date. The provision for annual leave and long service leave includes estimated on-costs. As these on-costs only become payable if the employee takes annual and long service leave while in-service, the probability that employees will take annual and long service leave while in-service has been taken into account in estimating the liability for on-costs.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied when leave is taken, including employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The Enterprise Agreement provides under the heading General Leave for an employee entitlement which combines sick leave, carer's leave and leave for 'other' prescribed purposes. No provision has been made for general leave as all such leave is 'non-vesting'.

The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Separation and redundancy

Provision is made for separation and redundancy benefit payments. ANSTO recognises a provision for termination when it has developed a detailed formal plan for the termination and has informed those employees affected that it will carry out the termination.

Superannuation

ANSTO's staff are members of the Commonwealth Superannuation Scheme (CSS) and the Public Sector Superannuation Scheme (PSS) or the PSS accumulation plan (PSSap), or other superannuation funds held outside of the Australian Government that provide retirement, death and disability benefits to employees. The CSS and PSS are defined benefit schemes for the Australian Government. The PSSap is a defined contribution scheme.

1. Financial Performance (continued)

1.1A Employee (continued)

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance's administered schedules and notes.

ANSTO makes employer contributions to the employees' superannuation scheme at rates determined by an actuary to be sufficient to meet the current cost to the Government. ANSTO accounts for contributions as if they are contributions to defined contribution scheme.

The staff of the subsidiaries are members of various defined contribution schemes and receive the Superannuation Contribution Charge.

The liability for superannuation recognised as at 30 June represents outstanding contributions for the final week of the year.

1.1B Supplier

	2022	2021
	$'000	$'000
Goods supplied from external entities	61,209	50,646
Services rendered from related entities	17,230	9,575
Services rendered from external entities	54,152	57,361
Workers compensation premiums - related entities	815	764
Total supplier expenses	**133,406**	**118,346**

1.1C Write-down of assets

	Note	2022	2021
		$'000	$'000
Non-financial assets:			
Property, plant and equipment write-down	2.2A	487	244
Total write-down of assets expenses		**487**	**244**

1.1D Finance costs

	Note	2022	2021
		$'000	$'000
Bank charges		16	17
Other interest		20	-
Interest expense on lease liabilities	2.3D	34	37
Unwinding of discount on provisions	2.3C	15,643	10,818
Total finance costs		**15,713**	**10,872**

1. Financial Performance (continued)

1.1E Income tax expense

	2022	2021
	$'000	$'000
Prima facie income tax (expense)/benefit on results of taxable subsidiaries	(10,595)	28,011
Adjustment of deferred tax for prior years	547	13
Deferred tax expense/(benefit) not recognised	10,389	(27,944)
Effect of non-deductible items	-	(70)
Total income tax benefit	**341**	**10**

Taxation
ANSTO is exempt from income tax. Unrecognised deferred tax assets in relation to un-recouped tax losses, including timing differences, in ANSTO Inc., is $nil (2021: $680,101) and ANM is $87,393,584 (2021: $83,043,246). The total deferred tax assets recognised as at 30 June 2022 in relation to controlled entities are: $640,865 (2021: $292,981), from PETTECH Solutions Pty Ltd at $640,865 (2021: $292,981), ANM at $nil (2021: $nil) and ANSTO Inc. at $nil (2021: $nil).

Subsidiaries
ANSTO's subsidiaries are subject to normal taxation.

ANSTO Inc. is a USA company and is subject to US tax laws. The entity was dissolved in May 2022.

No deferred tax asset has been recognised at 30 June 2022 (2021: $nil) in relation to ANM as the ANM directors do not believe it is probable that sufficient profits will be generated to utilise the tax losses in a reasonable time frame.

The PETTECH Solutions Pty Ltd director believes it is probable that sufficient profits will be generated to utilise the tax losses available.

Accounting policy
In respect of the subsidiaries, current tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities based on the current period's taxable income. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by reporting date.

Deferred income tax is provided on all temporary differences at reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

ANSTO is exempt from all forms of Australian taxation except fringe benefits tax (FBT) and the goods and services tax (GST). ANSTO is not exempt from any foreign taxation laws relative to its overseas operations.

Revenues, expenses, assets and liabilities are recognised net of GST except:
- where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- for receivables and payables.

1. Financial Performance (continued)

1.1E Income tax benefit (continued)

Deferred income tax liabilities are recognised for all taxable temporary differences except:

- when the deferred income tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and that, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or

- when the taxable temporary difference is associated with investments in subsidiaries, associates or interests in joint ventures, and the timing of the reversal of the temporary difference can be controlled and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax assets are recognised for all deductible temporary differences, carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available in the foreseeable future against which the deductible temporary differences and the carry forward of unused tax credits and unused tax losses can be utilised, except:

- when the deferred income tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or

- when the deductible temporary difference is associated with investments in subsidiaries, associates or interests in joint ventures, in which case a deferred tax asset is only recognised to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilised.

Unrecognised deferred income tax assets are reassessed at each reporting date and are recognised to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred income tax assets and liabilities are measured at the tax rates that are expected to apply to the year when the asset is realised or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at reporting date. Deferred tax assets and deferred tax liabilities are offset only if a legally enforceable right exists to set off current tax assets against current tax liabilities and the deferred tax assets and liabilities relate to the same taxable entity and the same taxation authority.

1.1F Auditor’s remuneration

During the period the following fees were paid or payable for services provided by the auditor of ANSTO and its subsidiaries, the Australian National Audit Office:

	2022	2021
	$’000	$’000
Audit of the financial statements	280	287
Total auditor's remuneration	**280**	**287**

No other services were provided by the Australian National Audit Office during the reporting period.

1. Financial Performance (continued)

1.2 Revenue

1.2A Revenue from contracts with customers

	2022	2021
	$'000	$'000
Sales of goods		
Radioisotope sales	56,839	51,819
Total sales of goods	**56,839**	**51,819**
Rendering of services		
Service & contract research	18,564	11,073
Silicon irradiation	11,887	9,820
CSIRO site support	1,265	1,004
Training courses	468	317
Land management	8,558	6,233
Total rendering of services	**40,742**	**28,447**
Total revenue from contracts with customers	**97,581**	**80,266**

Accounting policy
Revenue from contracts with customers
ANSTO recognises revenue for the transfer of promised goods and services to customers in an amount that reflects the consideration expected for the exchange of those goods and services.

The following is a description of the principal activities, and their respective revenue recognition treatment, from which ANSTO generates its revenue:

- Revenue from radioisotope sales is recognised at a point in time once control of the products is transferred to the customer. This generally occurs when products are dispatched for domestic customers and from when the products have departed from Australian soil for international customers;
- Revenue for service & contract research is recognised upon completion of the service milestone as per the contract or when the research has been provided if there are no specific milestones other than delivery on the agreed scope;
- Silicon irradiation revenue is recognised once the customer's product has undergone the irradiation process and control of the ingot returns to the customer;
- Revenue from land management includes operating lease revenue recognised on a straight- line basis or another systematic basis; and
- Revenue from training courses is recognised in the period the training course held when the performance obligations have been satisfied.

Receivables for goods and services are recognised at the contractual amounts due less any impairment allowance. Collectability of debts is assessed at invoicing. At this time an assessment is made of the expected credit loss based on life-time expected credit losses. Lifetime expected credit losses represent the expected credit losses that are expected to result from default events over the expected life of the financial asset. This takes into account historical experience, the credit risk for each customer as well as other indicators.

1. Financial Performance (continued)

1.2A Contracts with customers (continued)

Accounting policy (continued)

Grant revenue
Operating grants
Assets arising from operating grants that do not satisfy the criteria to be accounted for under AASB 15 *Revenue from Contracts with Customers* are recognised at fair value when ANSTO obtains control of the asset. Income is recognised at this amount less any related amounts required to be recognised in accordance with applicable Australian Accounting Standards.

Capital grants
A transfer of a financial asset, including cash, to enable ANSTO to acquire or construct a recognisable non-financial asset to identified specifications to be controlled by the organisation is referred to as a capital grant. These grants are initially recognised as a liability and subsequently recognised as income as, or when, the company satisfies its obligation to acquire or construct the specified asset to which the capital grant relates. For the acquisition of specified assets, income is recognised when the asset is acquired and controlled by ANSTO. For the construction of specified assets, income is recognised as the construction progresses on the basis of costs incurred relative to expected costs.

Resources received free of charge
Resources received free of charge are recognised as revenue when and only when a fair value can be reliably determined and the services would have been purchased if they had not been donated. Use of those resources is recognised as an expense.

Resources received free of charge are recorded as either revenue or gains depending on their nature i.e. whether they have been generated in the course of the ordinary activities of ANSTO. Contributions of assets at no cost or for nominal consideration are recognised as gains at their fair value when the asset qualifies for recognition.

2. Financial Position

This section details the financial position of ANSTO.

2.1 Financial assets

2.1A Cash and cash equivalents

Accounting policy
Cash is recognised at its nominal amount. Cash and cash equivalents include:

- Cash on hand; and
- Demand deposits in bank accounts with an original maturity of 3 months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

2.1B Trade and other receivables

	2022	2021
	$'000	$'000
Goods and services		
Related entities	1,411	1,344
External entities	17,720	12,222
Trade receivables	**19,131**	**13,566**
Less impairment loss allowance	-	-
Net receivables for goods and services	**19,131**	**13,566**
Other receivables		
Accrued interest	366	124
GST receivable from the Australian Tax Office	1,945	1,670
Accrued revenue	2,604	1,835
Other	692	594
Total other receivables	**5,607**	**4,223**
Total net trade and other receivables	**24,738**	**17,789**

Trade and other receivables are expected to be received within 12 months.

Net receivables are aged as follows:

	2022	2021
	$'000	$'000
Overdue but not impaired:		
Less than 31 days	19,598	15,453
31 to 60 days	464	552
61 to 90 days	1,140	562
More than 90 days	3,536	1,222
Total net trade and other receivables	**24,738**	**17,789**

Accounting policy
Receivables for goods and services are recognised at the nominal amounts due less any impairment loss allowance. Contractual payment terms are 30 days from billing. Collectability of debts is reviewed at reporting date. Allowance is made when collectability of the debt is no longer probable.

2. Financial Position (continued)

2.1C Investments

	2022	2021
	$'000	$'000
Term deposits	185,000	191,360
Other	703	703
Total investments	**185,703**	**192,063**

2. Financial Position (continued)

2.2 Non-financial assets

2.2A Property, plant and equipment and intangible assets

	Land	Buildings	Plant and Equipment	Intellectual property	Software	Other intangibles	Buildings Right of Use	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Gross value as at 30 June 2021	**201,500**	**223,494**	**981,634**	**58,426**	**88,964**	**8,348**	**3,853**	**1,566,219**
Additions	-	17,778	96,893	-	16,272	419	-	**131,362**
Lease modification	-	-	-	-	-	-	(3,055)	**(3,055)**
Transfers and reclassifications	-	(6,830)	7,128	(7,216)	(2,633)	9,551	-	**-**
Assets written-off	-	-	(730)	-	-	-	-	**(730)**
Disposals	-	-	(54)	-	-	-	-	**(54)**
Gross value as at 30 June 2022	**201,500**	**234,442**	**1,084,871**	**51,210**	**102,603**	**18,318**	**798**	**1,693,742**
Accumulated depreciation,amortisation and impairment losses 1 July 2021	**-**	**89,290**	**112,050**	**26,579**	**58,161**	**3,829**	**302**	**290,211**
Depreciation and amortisation	-	12,499	74,643	-	6,035	965	150	**94,292**
Transfers and reclassifications	-	-	-	(152)	152	-	-	**-**
Impairment loss	-	-	5,765	-	-	-	-	**5,765**
Assets written-off	-	-	(243)	-	-	-	-	**(243)**
Released on disposal	-	-	(11)	-	-	-	-	**(11)**
Revaluations and impairments recognised in other comprehensive income	-	1,296	20,966	-	13	3	-	**22,278**
Accumulated depreciation,amortisation and impairment losses 30 June 2022	**-**	**103,085**	**213,170**	**26,427**	**64,361**	**4,797**	**452**	**412,292**
Net book value as at 30 June 2022	**201,500**	**131,357**	**871,701**	**24,783**	**38,242**	**13,521**	**346**	**1,281,450**
Property, plant and equipment	**201,500**	**131,357**	**871,701**	**-**	**-**	**-**	**346**	**1,204,904**
Intangibles	**-**	**-**	**-**	**24,783**	**38,242**	**13,521**	**-**	**76,546**

No property, plant and equipment and intangible assets are expected to be disposed of within the next 12 months.

2. Financial Position (continued)

2.2A Property, plant and equipment and intangible assets (continued)

Accounting policy
Asset recognition threshold
Items of buildings, infrastructure, plant and equipment and major facilities are recorded at cost of acquisition and depreciated as outlined below. Items of plant and equipment with a cost of less than $5,000 (2021: $5,000) are expensed in the year of acquisition (other than where they form part a group of similar items which are significant in total).

The initial cost of an asset includes an estimate of the cost of dismantling and removing the item and restoring the site on which it is located at the end of its useful life. This is particularly relevant to 'make good' or decommissioning provisions on buildings, infrastructure, plant and equipment and major facilities, taken up by ANSTO where there exists an obligation to restore the property to its original condition. These costs are included in the value of the asset it relates to with a corresponding provision for the 'make good' or decommissioning taken up.

The cost of assets constructed by the entity includes the cost of materials, direct labour and an appropriate proportion of fixed and variable overheads.

Lease right-of-use (ROU) assets
Leased ROU assets are capitalised at the commencement date of the lease and comprise of the initial lease liability amount, initial direct costs incurred when entering into the lease less any lease incentives received. These assets are accounted for by Commonwealth lessees as separate asset classes to corresponding assets owned outright.

Following initial application, an impairment review is undertaken for any right of use lease asset that shows indicators of impairment and an impairment loss is recognised against any right of use lease asset that is impaired.

Revaluations of non-financial assets
Following initial recognition at cost, buildings, infrastructure, plant and equipment and major facilities (excluding right-of-use (ROU) assets) are carried at fair value less accumulated depreciation and accumulated impairment losses. Valuations are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at reporting date. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets. Independent valuers are generally used to conduct these scheduled revaluations. Revaluation increases or decreases arise from differences between an asset's carrying value and fair value.

Qualified parties, independent of ANSTO, carried out the 30 April 2021 valuations. The independent valuations undertaken effective 30 April 2021 were performed by PP&E Valuations Pty Ltd in relation to the assets at ANSTO's Victorian campus and Public Private Property Pty Ltd for the assets at ANSTO's NSW campus. Refer to Note 5.3 for the fair value assessment.

Revaluation adjustments are made on a class basis. Any revaluation increment is credited to equity under the heading of asset revaluation reserve except to the extent that it reverses a previous revaluation decrement of the same asset class that was previously recognised through profit and loss. Revaluation decrements for a class of assets are recognised directly through profit and loss except to the extent that they reverse a previous revaluation increment for that asset class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset and the asset restated to the revalued amount except for assets relating to decommissioning that are not subjected to revaluation.

2. Financial Position (continued)

2.2A Property, plant and equipment and intangible assets (continued)

Any revaluation increase to the decommissioning cost included in the initial cost of the asset will be reflected as an increase to the provision for decommissioning and a decrease to the asset revaluation reserve to the extent that there is a sufficient balance in the asset revaluation reserve for this asset class, any residual decrease will be recognised in profit or loss. Any revaluation decrease will be reflected as a decrease to the provision for decommissioning and an increase to the asset revaluation reserve and, to the extent of the decrease reversing a previous revaluation decrease of the related asset class that was previously recognised in profit and loss, the decrease is credited to profit and loss as a reversal. If the decrease in the provision exceeds the Depreciated Replacement Cost of the asset, the excess is taken to profit and loss.

Depreciation
Items of buildings, infrastructure, plant and equipment and major facilities, but excluding freehold land and ROU assets, are depreciated over their estimated useful lives to ANSTO using the straight-line method. The depreciation rates for ROU assets are based on the commencement date to the earlier of the end of the useful life of the ROU asset or the end of the lease term.

The depreciation rates (useful lives), residual values and methods are reviewed during each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate. ROU assets are amortised based on the life of the lease.

Depreciation and amortisation rates applying to each class of depreciable asset (excluding ROU assets) are based on the following useful lives:

	2022	2021
Buildings on freehold land	**5 to 45 years**	5 to 45 years
Plant and equipment	**2 to 45 years**	2 to 45 years
Infrastructure	**20 years**	20 years
Landmark, national and major research facilities	**5 to 45 years**	5 to 45 years

Impairment
All assets were assessed for indications of impairment at 30 June 2022. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if the entity were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Any resulting impairment losses, for property, plant and equipment assets, are recorded as a decrease in the Asset Revaluation Surplus relating to these classes of assets. This is because these asset classes are measured at fair value and have an Asset Revaluation Surplus attached to them. Where the impairment loss is greater than the balance of the Asset Revaluation Surplus for the relevant class of asset, the difference is expensed in the Statement of comprehensive income.

Derecognition
An item of property, plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

2. Financial Position (continued)

2.2B Intangibles

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite lives are amortised over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. Intangible assets with indefinite useful lives are not amortised, but are tested for impairment annually, either individually or at the cash-generating unit level.

Software
Items of software are recorded at cost and amortised as outlined below. Items with a cost of less than $5,000 (2021: $5,000) are expensed in the year of acquisition. Software and licences are reported at cost. There is no material internal software development, though there are significant internal capitalised costs involved in the implementation of purchased software.

Intellectual property
ANSTO and NTP Radioisotopes (SOC) Limited (NTP) signed the Intellectual Property (IP) Licence Agreement on 15 May 2012 for the provision of NTP's IP to ANSTO to enable ANSTO to build a new Mo-99 manufacturing plant at Lucas Heights.

Under the terms of the IP Agreement NTP granted to ANSTO an exclusive, irrevocable, perpetual licence to use, exploit, reproduce and modify the current IP and the future IP.

ANSTO originally recognised the IP right conveyed, at fair value, as an intangible asset with an indefinite life and a financial liability for the accumulated future payments required in relation to the asset. It is currently recorded at initial fair value less impairment.

Amortisation
Intangibles are amortised over their estimated useful lives to ANSTO using the straight-line method.

Amortisation rates applying to intangibles are as follows:

	2022	2021
Purchased software	**2 to 10 years**	2 to 10 years
Licences	**3 years**	3 years
Intellectual property	**Indefinite life**	Indefinite life

Impairment
All intangible assets were assessed for impairment at 30 June 2022. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

Patents
Due to the uncertain commercial value of patents and because benefits extending beyond one accounting period cannot be assured, the costs associated with the development and registration of patents are expensed in the year in which they are incurred, unless recoverability is assured beyond any reasonable doubt. At 30 June 2022 there were 165 patents (2021: 158) registered to ANSTO and no associated costs are recognised as an asset (2021: $nil).

2. Financial Position (continued)

2.2C Inventories

	2022	2021
	$'000	$'000
Raw materials and stores – not held for resale		
Stores - at cost	28,188	30,593
Cobalt-60 sources - at net realisable value	51	58
Reactor fuel and heavy water - at average purchase price	11,028	13,761
	39,267	44,412
Work in progress - at cost	3,415	3,699
Finished goods - at cost	742	2,119
Total inventories	**43,424**	**50,230**
Inventories expected to be realised within		
No more than 12 months	33,327	40,133
More than 12 months	10,097	10,097
Total inventories	**43,424**	**50,230**

During 2022, opening inventories of $32.7M (2021: $33.4M) were recognised as an expense.

Accounting policy
Inventories held for sale are valued at the lower of cost and net realisable value. Costs incurred in bringing each item of inventory to its present location and condition, are assigned as follows:

- Raw material and stores (with the exception of reactor fuel) - purchase cost on a first-in first-out basis;
- Reactor fuel - average purchase price; and
- Finished goods and work-in-progress - cost of direct materials and labour plus attributable costs that can be allocated on a reasonable basis.

2.2D Commitments

	2022	2021
	$'000	$'000
Infrastructure, plant and equipment	98,489	73,847
Fuel element purchase	12,992	9,715
Mo-99 plate purchase	15,281	11,759
Total commitments	**126,762**	**95,321**
One year or less	72,064	69,051
From one to five years	54,698	26,270
Total commitments	**126,762**	**95,321**

Accounting policy
Commitments are expenditure contracted for at the reporting date, but not recognised as liabilities.

2. Financial Position (continued)

2.3 Liabilities

2.3A Other payables

	2022	2021
	$'000	$'000
Accrued expenses	10,647	6,367
Other	1,013	12
Total other payables	**11,660**	**6,379**
Other payables expected to be settled within		
No more than 12 months	11,660	6,379
Total other payables	**11,660**	**6,379**

Accounting policy
Other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

2.3B Revenue in advance

	2022	2021
	$'000	$'000
Grant monies received in advance	17,017	28,177
Revenue received in advance - goods and services	3,210	4,059
Total revenue in advance	**20,227**	**32,236**
Revenue in advance expected to be settled within		
No more than 12 months	18,875	28,202
More than 12 months	1,352	4,034
Total revenue in advance	**20,227**	**32,236**

Accounting policy
Revenue in advance is recognised if a payment is received before ANSTO performs the related services, the customer has yet to obtain control of the goods or the grant performance obligations, if any, have yet to be met.

2. Financial Position (continued)

2.3C Provisions (other than employees)

		2022	2021
		$'000	$'000
Decommissioning	(a)	547,735	731,817
Nuclear waste management	(b)	139,730	140,157
Intellectual property payment	(c)	27,383	37,105
Other provisions		-	259
Total provisions		**714,848**	**909,338**
Provisions expected to be settled within			
No more than 12 months		22,459	26,077
More than 12 months		692,389	883,261
Total provisions		**714,848**	**909,338**

Accounting policy
The initial measurement of the provision for decommissioning and nuclear waste management is the present value of expected expenditures to settle the obligation.

Any adjustment to the provision for decommissioning and nuclear waste management attributable to the timing of expenditure, consumer price index (CPI) and discount rate at 30 June each year will be reflected as an adjustment to the provision and recognised in profit or loss in the reporting year in which the estimates change. The accounting policy relating to adjustments to the provision for decommissioning arising on revaluation of the decommissioning cost included in the underlying asset is disclosed in Note 2.2A.

2. Financial Position (continued)

2.3C Provisions (other than employees) (continued)

	Decommissioning	Nuclear waste management	Intellectual property payment	Other claims
	$'000	$'000	$'000	$'000
Carrying amount 30 June 2020	**616,284**	**129,154**	**37,703**	**1,218**
Nuclear waste management expenses	-	4,966	-	-
Amounts used	(4,182)	(2,608)	(1,503)	(959)
Change in accounting estimate	109,764	7,930	-	-
Foreign currency movement	-	-	753	-
Unwinding discount	9,951	715	152	-
Carrying amount 30 June 2021	**731,817**	**140,157**	**37,105**	**259**
Nuclear waste management expenses	-	29,456	**-**	**-**
Amounts used	(3,477)	(13,812)	(2,565)	(259)
Change in accounting estimate	(195,121)	(17,190)	-	-
Foreign currency movement	-	-	(7,165)	-
Unwinding discount	14,516	1,119	8	-
Carrying amount 30 June 2022	**547,735**	**139,730**	**27,383**	**-**

Provisions movement reconciliation

(a) This provision includes decommissioning costs relating to property, plant, equipment and infrastructure.

Estimated nominal costs being the estimate of future cash flows required to fund the decommissioning of current facilities and infrastructure (2022: $742.1 million; 2021 $717.5 million):

- An external company, Project Time & Cost LLC (PT&C), was engaged in FY19 to provide rough-order-of-magnitude costs for decommissioning facilities at ANSTO's Lucas Heights campus effective 30 June 2019 based upon characteristics that are similar to other facilities for which there is a known decommissioning liability. The parametric estimate provided by PT&C has an expected accuracy range between +50% ($1,075.1M) and -30% ($501.7M), this can also be defined as the bandwidth of estimating uncertainty associated with parametric estimating, and is based on a Class 4 cost estimate; ANSTO has applied the mid-point estimate ($716.7M).
- ANSTO's internal subject matter experts update the decommissioning and nuclear waste management provision at year end to reflect revised costings and expected timing of future expenditure.

2. Financial Position (continued)

2.3C Provisions (other than employees) (continued)

Phasing of the estimated nominal costs over the expected time period of the decommissioning provision being 56 years (2021: 57 years):

- The cash flows are phased based on when it is expected that the work will be undertaken, which is subject to the use of the asset, the available funding and, where applicable, the licence.
- Decommissioning costs are funded by government and received on a pro-rata basis with the longest funding over 56 years for the decommissioning of infrastructure.

Inflating the nominal costs by expected CPI over time (2022: 2.5%, 2021: 2.5%):

- Payments to fund decommissioning are made in the future and need to account for expected increases in the underlying cost of the final outflow due to inflationary pressures. The inflation rate assumption applied by ANSTO is set with reference to the Standard Parameters made available by the Department of Finance.

Discounting for the effect of the time value of money (2022: ranging from 2.73% to 3.71%, 2021: ranging from 0.06% to 3.00%):

- Projected nominal costs are discounted to a present value using risk free rates to reflect the time value of money and are set with reference to the Standard Parameters made available by the Department of Finance.

Given the high degree of judgement required to estimate future cash flows and the phasing of these cash flows, there is inherent uncertainty in establishing the liability, therefore it is likely that the final outcome will differ from the original liability established.

The sensitivity of the decommissioning provision, based on the nominal cost of $742.1 million as at 30 June 2022 (2021: $717.5 million), to changes in the primary drivers are indicated in the table below. Each change has been calculated in isolation and without regard to other driver changes that may occur simultaneously.

		Decommissioning provision increase/(decrease)	
Driver	**Change**	**2022 $'000**	**2021 $'000**
CPI	(1.0)%	(103,563)	(154,718)
	(0.5)%	(55,671)	(83,485)
	0.5%	64,960	98,189
	1.0%	141,035	214,062
Discount rate	(1.0)%	223,514	215,578
	(0.5)%	94,454	98,569
	0.5%	(70,990)	(83,216)
	1.0%	(125,736)	(153,666)
Delaying planned expenditure	1 year	(7,109)	42,155
	3 years	(21,520)	85,001
	5 years	(35,760)	112,064

2. Financial Position (continued)

2.3C Provisions (other than employees) (continued)

(b) The nuclear waste management provision consists of future costs relating to the management of accumulated waste arising from nuclear operations.

Estimated nominal costs being the estimate of future cash flows required to fund the waste management activities (2022: $146.7 million; 2021 $129.3 million):

- The legacy nuclear waste relates to the future costs of managing legacy nuclear waste from research and the production of nuclear medicine. The provision also includes the future costs of managing nuclear waste that has arisen from current operations. Also included are the estimated costs of managing the spent fuel from the OPAL multipurpose reactor. The costs of the legacy waste, current waste and spent fuel are based primarily on ANSTO experience and expertise of managing these items over a number of years.

Phasing of the estimated nominal costs over the expected time period of the nuclear waste management activities being 15 years (2021: 14 years):

- The cash flows are phased based on when it is expected that the work will be undertaken.

Inflating the nominal costs by expected CPI over time (2022: 2.5%, 2021: 2.5%):

- Payments to fund nuclear waste management are made in the future and need to account for expected increases in the underlying cost of the final outflow due to inflationary pressures. The inflation rate assumption applied by ANSTO is set with reference to the Standard Parameters made available by the Department of Finance.

Discounting for the effect of the time value of money (2022: ranging from 2.73% to 3.85%, 2021: ranging from 0.06% to 1.66%):

- Projected nominal costs are discounted to a present value using risk free rates to reflect the time value of money and are set with reference to the Standard Parameters made available by the Department of Finance.

Given the high degree of judgement required to estimate future cash flows and the phasing of these cash flows, there is inherent uncertainty in establishing the liability, therefore it is likely that the final outcome will differ from the original liability established. Changes in the provision year on year are recognised in profit or loss in the reporting year in which the estimates change.

2. Financial Position (continued)

2.3C Provisions (other than employees) (continued)

The sensitivity of the nuclear waste management provision, based on the nominal cost of $146.7 million as at 30 June 2022 (2021: $129.3 million), to changes in the primary drivers are indicated in the table below. Each change has been calculated in isolation and without regard to other driver changes that may occur simultaneously.

		Nuclear waste management provision increase/(decrease)	
Driver	**Change**	**2022 $'000**	**2021 $'000**
CPI	(1.0)%	(7,131)	(7,400)
	(0.5)%	(3,615)	(3,754)
	0.5%	3,718	3,865
	1.0%	7,543	7,844
Discount rate	(1.0)%	7,548	6,855
	(0.5)%	3,703	3,719
	0.5%	(3,567)	(3,790)
	1.0%	(7,004)	(7,435)
Delaying planned expenditure	1 year	(1,774)	1,082
	3 years	(5,322)	1,912
	5 years	(8,961)	3,204

(c) The provision of intellectual property relates to future payments required in relation to the intellectual property asset (Notes 2.2A and 2.2B). The liability is derived from calculating the estimated commission to be paid to NTP based on expected future sales and then discounted back at 7.17% (2021: 3.20%).

2.3D Lease liabilities

ANSTO leases property in Camperdown from the Central Sydney Area Health Service under one operating lease. The current lease was entered into in November 2000 and will terminate in January 2025. The lease enables ANSTO to undertake its principal activities. Lease payments are variable to the extent that they are reviewed every three years in accordance with the market rental valuation clause of the agreement. ANSTO does not have an interest in the residual value of the property but does have a responsibility at the termination of the lease to ensure the property is in good and tenantable condition. At 30 June, the future minimum lease payments under non-cancellable operating leases were payable as follows:

	Note	2022	2021
		$'000	**$'000**
Opening balance		3,646	3,750
Lease modifications		(3,148)	-
Lease repayments		(147)	(141)
Interest expense on lease liabilities	1.1D	34	37
Closing balance		**385**	**3,646**
Maturity analysis - contractual undiscounted cash flows			
Buildings			
Less than one year		146	151
One to five years		239	477
More than five years		-	3,018
Total undiscounted lease liabilities		**385**	**3,646**

2. Financial Position (continued)

2.3D Lease liabilities (continued)

Accounting policy
ANSTO recognises right-of-use assets and lease liabilities for most leases. However, ANSTO has elected not to recognise right-of-use assets and lease liabilities for some leases of low value assets based on the value of the underlying asset when new or for short-term leases with a lease term of 12 months or less.

2.4 Reserves

2.4A Reserves

	Note	2022	2021
		$'000	$'000
Asset revaluation			
Opening balance		503,341	386,469
Revaluation - realisation	2.2A	(22,278)	116,872
Revaluation - deferred tax asset		(209)	-
Asset revaluation reserves	(a)	**480,854**	**503,341**
Other reserves			
OPAL depreciation	(b)	**9,061**	**9,061**
Intermediate low level waste (ILLW) return	(c)		
Opening balance		616	616
Transfer to accumulated deficit		(616)	-
Closing balance		**-**	**616**
Foreign currency reserves	(d)	**323**	**323**
Other reserves		**9,384**	**10,000**
Total reserves		**490,238**	**513,341**

(a) Asset revaluation
This reserve represents the revaluation of property, plant and equipment.

(b) OPAL depreciation reserve
This reserve represents unused funding for OPAL depreciation. This was due to a delay in final commissioning of OPAL. This reserve will be transferred to the accumulated reserves in line with the final depreciation of OPAL.

(c) Intermediate low level waste (ILLW) return
This reserve related to unspent appropriation for ILLW return and has been transferred to the accumulated deficit in FY22 as the ILLW return has now been completed.

(d) Foreign currency reserve
This reserve relates to foreign currency translation at reporting date.

3. Funding

This section identifies ANSTO's funding structure.

3.1 Government funding

	2022	2021
	$'000	$'000
Revenue from Government	279,506	278,819
Government equity injection	50,187	20,465
Total government funding	**329,693**	**299,284**

Revenue from government

Funding received or receivable from the then Department of Industry, Science, Energy and Resources (DISER) (appropriated as a Corporate Commonwealth Entity payment item for payment to ANSTO) is recognised as Revenue from Government when ANSTO gains control of the funding unless it is an equity injection, such amounts are recognised directly in contributed equity in the year received.

4. People and relationships

This section describes a range of employment and post-employment benefits provided to our people and our relationships with key people.

4.1 Employee payables

	2022	2021
	$'000	$'000
Accrued salaries and wages	3,821	3,214
Incentives	783	1,668
Total employee payables	**4,604**	**4,882**

All employee payables are expected to be settled within 12 months.

4.2 Employee provisions

	2022	2021
	$'000	$'000
Annual leave	19,580	17,526
Long service leave	38,953	36,811
Total employee provisions	**58,533**	**54,337**
Employee provisions expected to be settled within		
No more than 12 months	51,911	46,885
More than 12 months	6,622	7,452
Total employee provisions	**58,533**	**54,337**

Accounting policy is at Note 1.1A.

4. People and relationships (continued)

4.3 Key management personnel remuneration

Key management personnel (KMP) are those persons having authority and responsibility for planning, directing and controlling the activities of ANSTO, directly or indirectly, including any director (whether executive or otherwise) of ANSTO. ANSTO has determined the KMP to be the ANSTO Portfolio Minister, the Board and the Executive Leadership Team. KMP remuneration is reported in the table below:

	2022	2021
	$'000	$'000
Short-term employee benefits:		
Salary	3,195	3,909
Performance bonuses	84	17
Other	16	27
Total short-term employee benefits	**3,295**	**3,953**
Post-employment benefits:		
Superannuation	309	425
Total post-employment benefits	**309**	**425**
Other long-term benefits:		
Long-service leave	108	169
Other	151	(101)
Total other long-term benefits	**259**	**68**
Termination benefits	**-**	**260**
Total key management personnel remuneration	**3,863**	**4,706**

The ANSTO Group had 21 individuals in KMP roles during the year, 18 in ANSTO and 3 in its subsidiaries (2021: 25 individuals, 21 ANSTO and 4 subsidiaries).

In ANSTO, these individuals equated to a full time equivalent (FTE) of 18.24 (2021: 18.57). Represented by 9.03 non-executive board members (prorated) (2021: 9.17) and 7 FTE (2021: 9.40 FTE) members of the ANSTO Executive Leadership Team. In the subsidiaries the FTE is 2.2 (2021: 2.71) represented by non-executive board members. The above key management personnel remuneration excludes the remuneration and other benefits of the Portfolio Minister. The Portfolio Minister's remuneration and other benefits are set by the Remuneration Tribunal and are not paid by ANSTO.

4.4 Related party transactions

A related party is a person or entity that controls or has significant influence over the reporting entity, or is a member of the Key Management Personnel (KMP) of the reporting entity or its parent entity, and includes their close family members and entities in which the KMP and/ or their close family members individually or jointly have controlling interests. ANSTO is an Australian Government controlled entity. Related parties to this entity are the Key Management Personnel, the Commonwealth cabinet and other Australian Government entities.

Significant transactions with related parties or entities that they are associated with can include:

- the payments and receipt of grants; and
- purchases of goods and services.

Giving consideration to relationships with related parties, their associated entities, and transactions entered into during the reporting period by ANSTO, it has been determined that there are no related party transactions to be separately disclosed.

5. Managing Uncertainties

5.1 Contingent assets and liabilities

At 30 June 2022, ANSTO has accumulated, and will continue to accumulate, nuclear waste that requires characterisation in order to determine the nature and therefore the costs and timing required to manage the waste to final disposal, which is unfunded. When these factors are known with reasonable certainty a liability will be recognised, until this time an unquantifiable contingent liability may exist. The majority of this waste has arisen from the production of nuclear medicine. The underlying assumption is that the ultimate storage of the nuclear waste will be the responsibility of the planned National Radioactive Waste Management Facility. If there is a change in Government policy, ANSTO may need to bear the costs relating to the future management of the waste.

At 30 June 2022, ANSTO still has the likelihood of claims in relation to asbestos related diseases. It is not possible to estimate the amounts of any eventual payments that may be required in relation to these claims. However, such claims are covered by the Department of Finance provision dealing with asbestos related claims against any Commonwealth Authorities including ANSTO in the event of any litigation or claim for compensation.

Accounting policy
Contingent assets and contingent liabilities are not recognised in the Statement of Financial Position but are reported in the Notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

5. Managing Uncertainties (continued)

5.2 Financial instruments

	Note	Carrying amount 2022	Amortised Cost 2022	Fair value through profit or loss 2022	Carrying amount 2021	Amortised Cost 2021	Fair value through profit or loss 2021
Financial assets		**$'000**	**$'000**	**$'000**	**$'000**	**$'000**	**$'000**
Cash and cash equivalents		41,624	41,624	-	34,288	34,288	-
Trade receivables	2.1B	19,131	19,131	-	13,566	13,566	-
Interest accrued	2.1B	366	366	-	124	124	-
Accrued revenue	2.1B	2,604	2,604	-	1,835	1,835	-
Other	2.1B	692	692	-	594	594	-
Term deposits	2.1C	185,000	-	185,000	191,360	-	191,360
Investments - other	2.1C	703	-	703	703	-	703
Total financial assets (recognised)		**250,120**	**64,417**	**185,703**	**242,470**	**50,407**	**192,063**
Total financial liabilities							
Suppliers		13,055	13,055	-	18,859	18,859	-
Employee payables	4.1	4,604	4,604	-	4,882	4,882	-
Other payables	2.3A	11,660	11,660	-	6,379	6,379	-
Revenue in advance	2.3B	20,227	20,227	-	32,236	32,236	-
Total financial liabilities (recognised)		**49,546**	**49,546**	**-**	**62,356**	**62,356**	**-**

Interest revenue from financial assets

	2022	2021
	$'000	**$'000**
Loans and receivables		
Cash and cash equivalents	50	212
Investments	671	781
Net income from financial assets	**721**	**993**

Accounting policy
Interest revenue is recognised using the effective interest method as set out in AASB 139 *Financial Instruments: Recognition and Measurement*.

5. Managing Uncertainties (continued)

5.2 Financial instruments (continued)

Net expenses from financial liabilities
There were no expenses from financial liabilities for 2022 (2021: $nil).

Financial assets
The net fair values of cash, deposits on call and non-interest-bearing monetary financial assets are in accord with their carrying amounts. Loans receivable are carried at cost, which is above their net fair value, because it is intended to hold them to maturity.

Financial liabilities
The net fair values for trade creditors and grants received in advance, all of which are short-term in nature, are in accord with their carrying amounts.

Accounting policy
ANSTO classifies its financial assets in the following categories:

- Fair value through profit or loss; and
- Amortised cost.

The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Financial assets are recognised and derecognised upon trade date.

Effective interest method
The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating interest income over the relevant period. The effective interest rate is the rate that discounts estimated future cash receipts through the expected life of the financial asset, or, where appropriate, a shorter period.

Income is recognised on an effective interest rate basis except for financial assets at fair value through profit or loss.

Financial assets at fair value through profit or loss
Financial assets are classified as financial assets at fair value through profit or loss where the financial assets have been acquired principally for the purpose of selling in the near future. Assets in this category are classified as current assets.

Financial assets at fair value through profit or loss are stated at fair value, with any resultant gain or loss recognised in the profit or loss. The net gain or loss recognised in the profit or loss incorporates any interest earned on the financial assets.

5. Managing Uncertainties (continued)

5.2 Financial instruments (continued)

Financial Assets at Amortised Cost
Financial assets included in this category need to meet two criteria:

1. the financial asset is held in order to collect the contractual cash flows; and
2. the cash flows are solely payments of principal and interest on the principal outstanding amount. Amortised cost is determined using the effective interest method.

Investments
Non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the group has the positive intent and ability to hold to maturity are classified as investments. Investments are recorded at amortised cost using the effective interest method less impairment, with revenue recognised on an effective yield basis.

Loans and receivables
Trade receivables, loans and other receivables that have fixed or determinable payments that are not quoted in an active market. Loans and receivables are measured at amortised cost using the effective interest method less impairment. Interest is recognised by applying the effective interest rate.

Effective Interest Method
Income is recognised on an effective interest rate basis for financial assets that are recognised at amortised cost.

Impairment of financial assets
Financial assets are assessed for impairment at each reporting date.

If there is objective evidence that an impairment loss has been incurred for loans and receivables or investments, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. The carrying amount is reduced by way of an allowance account. The loss is recognised in the Statement of Comprehensive Income. If there is objective evidence that an impairment loss has been incurred the amount of the impairment loss is the difference between the carrying amount of the asset and the present value of the estimated future cash flows discounted at the current market rate for similar assets. The net fair values of cash, deposits on call and non-interest-bearing monetary financial assets are in accord with their carrying amounts.

Financial liabilities
Financial liabilities are classified as other financial liabilities and are recognised and derecognised upon trade date.

Other financial liabilities
Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with the interest expense recognised on an effective interest basis.

Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

5. Managing Uncertainties (continued)

5.3 Fair value measurement

The following tables provide an analysis of assets and liabilities that are measured at fair value. The different levels of the fair value hierarchy are defined below.

Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at measurement date.
Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
Level 3: Unobservable inputs for the asset or liability.

Non-financial assets	Category	Fair value 2022 $'000	Fair value 2021 $'000	Valuation technique[1]	Inputs used[1]
Land	**3**	**201,500**	**201,500**	Market approach.	Adjusted market transactions (zoning, access, existing use, size, topography, location).
Buildings	**3**	**131,357**	**134,204**	Depreciable replacement cost approach.	Replacement cost/consumed economic benefit/ obsolescence of asset.
Infrastructure, plant and equipment	**2**	**8,793**	**12,597**	Market approach.	Adjusted market transactions.
	3	**862,913**	**856,987**	Depreciable replacement cost approach.	Replacement cost/consumed economic benefit/ obsolescence of asset.

1. The valuation techniques and inputs used in 2022 and 2021 are consistent except for Buildings where the depreciable replacement cost approach has been used for all buildings with a fair value at 30 June 2022.

The highest and best use of all non-financial assets is the same as their current use.

5. Managing Uncertainties (continued)

5.3 Fair value measurement (continued)

Recurring and non-recurring Level 3 fair value measurements - valuation processes
Public Private Property Pty Ltd undertook a comprehensive valuation of all non-financial tangible assets located at the Lucas Heights campus effective 30 April 2021. PP&E Valuations Pty Ltd undertook a comprehensive valuation of all non-financial tangible assets located at the Clayton campus effective 30 April 2021. ANSTO tests the procedures of the valuation output as an internal management review at least once every 12 months (valuations are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at reporting date). If a particular asset class experiences significant and volatile changes in fair value (i.e. where indicators suggest that the value of the class has changed materially since the previous reporting period), that class is subject to specific valuation in the reporting period, regardless of the timing of the last specific valuation.

Land, Infrastructure, Plant and Equipment
Assets that do not transact with enough frequency or transparency to develop objective opinions of value from observable market evidence have been measured utilising the depreciated replacement cost (DRC) approach. Under the DRC approach, the estimated cost to replace the asset is calculated and then adjusted to take into account its consumed economic benefit/asset obsolescence (accumulated depreciation). Consumed economic benefit/asset obsolescence has been determined based on professional judgment regarding physical, economic and external obsolescence factors relevant to the asset under consideration.

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred and liabilities undertaken. Fixed assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and revenues at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

6. Other information

6.1 Deed of indemnity

A Deed of Indemnity between the Commonwealth Government, ANSTO and ANM, under which the government has formally agreed to indemnify ANSTO and ANSTO Officers, and ANM and ANM Officers, from any loss or liability arising from claims caused by ionising radiation, was signed by the then Minister for Industry, Innovation and Science in April 2016. It will remain in place until April 2026.

6.2 Information relating to ANSTO (the parent entity)

	2022	2021
	$'000	$'000
Financial assets	252,358	235,443
Non-financial assets	1,338,599	1,327,407
Total assets	**1,590,957**	**1,562,850**
Payables	31,464	30,414
Provisions	674,327	824,235
Revenue in advance	20,227	32,236
Lease liabilities	385	3,646
Total liabilities	**726,403**	**890,531**
Net assets	**864,554**	**672,319**
Contributed equity	971,521	921,334
Asset revaluation reserve	479,494	501,818
Other reserves	9,061	9,677
Accumulated deficit	(595,522)	(760,510)
Total equity	**864,554**	**672,319**
Surplus/(deficit) of the parent entity	**164,372**	**(116,261)**
Other comprehensive (expense)/income of the parent entity	**(22,324)**	**116,241**
Total comprehensive surplus/(deficit) of the parent entity	**142,048**	**(20)**

	Interest rate	Maturity date	2022	2021
			$	$
$15 million unsecured loan facility from ANSTO to ANM[1,2]	CommSec Variable Rate 6.78% (2021: 6.03%)	30.6.25 (2021: 30.06.23)	12,952,476	10,047,182
Total unsecured loan from ANSTO to ANM			**12,952,476**	**10,047,182**
Interest on unsecured loan facility			**367,319**	**238,004**

1. The loan was fully impaired at 30 June 2022 and 30 June 2021.
2. On 18 August 2021 ANSTO extended the maturity date of the $15 million unsecured loan facility to 30 June 2023.

6. Other information (continued)

6.2 Information relating to ANSTO (the parent entity) (continued)

There are transactions between ANSTO and its subsidiaries for land leases, purchases and sales of goods and services. The prices charged for transactions between ANSTO and its subsidiaries are on normal commercial terms and conditions no more favourable than those available to other parties with the exception of goods and services provided by ANSTO to ANM. These are on cost recovery rates, with ANM only charged for services to the extent it is has the funds available to pay for them.

Investment in subsidiaries

The current carrying value of ANSTO's subsidiaries at 30 June 2022 are set out below. Unless otherwise stated, share capital consists solely of ordinary shares that are held directly by ANSTO, and the proportion of ownership interests held equals the voting rights held by the group. The country of incorporation is also their principal place of business.

		2022	2022	2021
Name	**Place of incorporation**	**%**	**$**	**$**
PETTECH Solutions Pty Ltd (a)	Australia	100	2,965,588	2,965,588
ANSTO Inc. (b)	USA	-	-	-
ANSTO Nuclear Medicine Pty Ltd (c)	Australia	99.9	-	-
Total investment in subsidiaries			**2,965,588**	**2,965,588**

(a) ANSTO owns 100% of PETTECH Solutions Pty Ltd (PETTECH). PETTECH's primary activity is the ownership of infrastructure for the manufacture of fludeoxyglucose.
During FY20 PETTECH recognised a right of use asset of $0.5 million resulting from a lease with ANSTO. The NBV as at 30 June 2022 was $0.5 million (2021: $0.5 million).

(b) ANSTO owned 100% of ANSTO Inc.. ANSTO Inc. was dissolved in May 2022. The final financial statements were audited by Wipfli LLC.

(c) ANSTO owns 100% of the B class and C class shares on issue of ANM. The B class shares, 101 are not entitled to any dividends but do have operational control. The C class shares, 110,300,000 were issued as consideration for the Mo-99 manufacturing facility. There was one A class share issued to the Minister of Industry, Innovation and Science on behalf of the Commonwealth. The A class share is entitled to dividends. ANM's principal activities are to own and operate the new Molybdenum 99 (Mo-99) and Synroc Waste Treatment facilities. ANSTO's investment in ANM was fully impaired in FY21 and FY22. ANM is forecast to continue to make losses in the short to medium term and relies on shareholder support to remain solvent.

6.3 Events after reporting date

No events have arisen since the end of the financial year which requires disclosure or the financial statements to be adjusted.

6. Other information (continued)

6.4 Budgetary reports and explanations of major variances

The following tables provide a comparison between the 2021–22 Portfolio Budget Statements (PBS) budget and the final financial outcome in the 2021–22 financial statements. The Budget is not audited and does not reflect additional budget estimates provided in the 2021–22 Portfolio Additional Estimates Statements (PAES). However, major changes in budget have been explained as part of the variance analysis where relevant.

The ANSTO PBS does not include ANM, the $168.8 million nuclear medicine initiative, as it is a Public Non-Financial Corporation (PNFC) but does contain ANSTO's other controlled entities. PNFC's do not form part of the General Government Sector and are outside of the scope of AASB 1055 *Budgetary Reporting*. ANM is included in the Actual figures in the financial statements as it is controlled by ANSTO.

A budget has not been provided in the PBS for non-cash items such as asset revaluations, foreign exchange, sale/impairment of asset adjustments and the change in parameters used in the calculation of provisions. Unless the variance is considered to be 'major', no explanation has been provided.

Explanation of major variances

Event impacting financial statements	Affected consolidated statements and line items
The ANM project is reported differently in the Budget compared to the Actual figures. ANM is a subsidiary of ANSTO, it is consolidated into the financial statements. However, for budget purposes ANM does not form part of the PBS and is reflected as an investment. ANSTO trades with ANM, provides a loan facility and operating lease. The nuclear waste management expense and provision includes a component relating to ANM's production of Mo-99. The decommissioning provision losses and provision also includes a component relating to ANM's production of Mo-99. ANSTO holds the inventory of target plates used by ANM to produce Mo-99. ANSTO agreed to bear the costs of ANM for the period 1 July 2021 to 30 June 2022 that ANM's own source revenue could not cover.	**Statement of Comprehensive Income:** Supplier expenses Nuclear waste management expenses Nuclear waste management provision losses Decommissioning Contracts with customers **Statement of Financial Position:** Cash and cash equivalents Investments - other Inventories Trade and other receivables Provision – decommissioning Provision – nuclear waste management Accumulated deficit **Statement of Cash Flows:** Contracts with customers Payments to suppliers

6. Other information (continued)

Event impacting financial statements	Affected consolidated statements and line items
ANSTO has taken a number of measures to monitor and mitigate the effect of COVID-19, such as safety and health measures for staff (social distancing and working from home) and securing the supply of materials that are essential to our production process. ANSTO receives grants from the University sector and grants are usually linked to researchers accessing ANSTO facilities. Both access and the University sector have been adversely impacted by COVID-19. Capital works, such as the Australian Synchrotron's Bright beamlines project, have also been delayed through the closure of manufacturers of equipment and the closure of borders impacting the delivery and installation of equipment. Grants received for the Bright project at the Australian Synchrotron are recognised as revenue when the capital expenditure is incurred. The delay in this expenditure arising from COVID-19 has had a corresponding delay in the recognition of income.	**Statement of Comprehensive Income:** Supplier expenses Contracts with customers Grant income **Statement of Financial Position:** Trade and other receivables Investments Property, plant and equipment Suppliers Revenue in advance **Statement of Cash Flows:** Contracts with customers Grants received Payments to suppliers Purchase of property, plant and equipment
ANSTO manages its cash through the use of term deposits. The term of each deposit is dependent on the cash needs of the business and the interest rates prevailing at the time. Changes in either the cash needs or interest rates impacts on the number of times a deposit is 'rolled' in the period.	**Statement of Financial Position:** Cash and cash equivalents Investments – term deposits **Statement of Cash Flows:** Proceeds from investment sales/maturities Purchase of investments
Each year at 30 June ANSTO assesses its obligation to decommission facilities and manage waste from its operations. In accordance with the Australian Accounting Standards, the decommissioning and nuclear waste provision is assessed for the timing of payments, anticipated costs and discount, exchange and inflation rates. The inflation and discount rates used in the provision calculations as at 30 June 2022 varied to those used to when the 2021-22 PBS was completed in May 2021.	**Statement of Comprehensive Income:** Finance costs Decommissioning provision losses Nuclear waste management provision losses **Statement of Financial Position:** Provision – decommissioning Provision – nuclear waste management
Working capital movements arise from the timing of receipt of invoices, and subsequent payment, with customers and suppliers. Amounts due to employees are largely dependent upon the timing of the final payroll run for the year.	**Statement of Financial Position:** Payables – Supplier Payables - Employees Payables – Other payables **Statement of Cash Flows:** Contracts with customers Payments to suppliers

Dr Daniel Hausermann in the tunnel of the Imaging and Medical Beamline at ANSTO's Australian Synchrotron in Clayton, Victoria.

Appendices and Index

Acronyms

ACRONYM	DESCRIPTION
ACNS	Australian Centre for Neutron Scattering
AINSE	Australian Institute of Nuclear Science and Engineering
ANSTO	Australian Nuclear Science and Technology Organisation
ANSTO Act	Australian Nuclear Science and Technology Organisation Act 1987 (Cth)
ANM	ANSTO Nuclear Medicine
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
CAS	Centre for Accelerator Science
CEO	Chief Executive Officer
CERN	European Organization for Nuclear Research
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
ESD	Ecologically sustainable development
FNCA	Forum for Nuclear Cooperation in Asia
FOI	Freedom of Information Act 1982
FTE	Full time equivalent
GIF	Generation IV International Forum
IAEA	International Atomic Energy Agency
ISO	International Organisation for Standardisation
LGBTQIA+	Lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual and other terms (such as non-binary and pansexual)
Mo-99	Molybdenum-99
MX2	Micro Crystallography beamline
NACC	Nuclear Agencies Consultative Committee
NCRIS	National Collaborative Research Infrastructure Strategy
NTD	Neutron transmutation doped
OFI	Opportunities for improvement
OPAL	Open Pool Australian Light-water
PGPA Act	Public Governance, Performance and Accountability Act 2013 (Cth)

ACRONYM	DESCRIPTION
PGPA Rule	Public Governance, Performance and Accountability Rule 2014 (Cth)
RAC	Risk and Audit Committee
RAM	Research Agencies Meeting
RAP	Reconciliation Action Plan
STA	Science and Technology Australia
STEM	Science, technology, engineering and mathematics
UNSW	University of New South Wales
UoM	University of Melbourne
UoW	University of Wollongong

Reporting under the Equal Employment Opportunity Act 1987

ANSTO seeks to create a culture of inclusion, where our diversity of thought and differing perspectives are a source of organisational agility, resilience and renewal. We provide empowering and effective work-based policies, which support flexibility and the individual needs of our employees, including flexible work practices and family-friendly programs. Our inclusive culture will enable us to retain our talent within a rewarding environment and attract the best talent to work with us in the future.

Gender and STEM

Coaching and mentoring provides an opportunity to build the potential of employees. It fosters professional relationships where employees have the opportunity to collaborate and share insights. In FY22, ANSTO refreshed its approach to coaching and mentoring by establishing an in-house mentoring program for employees. This program provides a forum for mentors to offer constructive advice and to support the career development of the mentees.

Twenty women took part in the My Mentor program in which participants went through a ten-module career development program staggered over six months. The participants had a minimum of five hour-long mentoring sessions with their coach after completion of the modules. This program drives networking opportunities between mentees and mentors and facilitates two-way learning between these participants.

The Ignite Youth Network was launched in April 2022, offering a dedicated space for younger adults and early career individuals at ANSTO to come together, share, learn and network across all walks of life. ANSTO recognises the voices of its future and facilitates knowledge sharing between these groups to leverage diversity across a range of people.

Indigenous engagement

ANSTO's two main campuses are located on the traditional lands of the Aboriginal nations of Dharawal, at Lucas Heights, and Kulin at Clayton. Furthermore, ANSTO's extensive collaboration with universities and industry partners naturally connects us with other Aboriginal and Torres Strait Islander nations on a national scale. Therefore, we recognise these peoples as Australia's first scientists, navigators, mathematicians and engineers. Their knowledge and skills are an integral part of the future growth of Australia and contribute to our understanding of Australia's unique attributes. In recognition of this connection, ANSTO is enhancing activities to connect with local and broader Australian Indigenous communities. This includes an Indigenous traineeship collaboration with the Sir William Tyree Foundation and the Innovate Reconciliation Action Plan. This plan is a key document that enables ANSTO to make progress in three key areas of Aboriginal Reconciliation: relationships, respect and opportunities. ANSTO was able to apply for, and be awarded, the Innovate status because of past activities that supported Reconciliation goals.

ANSTO's research activities are part of our commitment to build and strengthen relationships. Through university and industry partnerships, ANSTO is committed to developing the skills and knowledge necessary to bring the full benefit of nuclear technology to Australia. ANSTO recognises the importance of Aboriginal custodians and communities being involved in our work and we are continuously looking for ways to combine traditional knowledge and Western science.

LGBTQIA+ support

ANSTO's LGBTQIA+ Ally Network is a group that provides support, networking, and advocacy to gender diverse and same-sex attracted people at ANSTO. This network meets on a regular basis and offers both a safe space and a forum for participants to simply be themselves. Discussions are held about issues affecting gender diversity and same-sex attracted people in the workforce as well as within society in general. The network also provides input into ANSTO policies and procedures on gender diversity and LGBTQIA+ issues. ANSTO aims to provide visibility to gender diversity and LGBTQIA+ issues, as well as support and advocacy for those encountering difficulties in the workplace.

Disability

ANSTO is committed to creating a workplace where different abilities are recognised, valued and celebrated. We care about providing a workplace where people with physical disability or neurodivergence, carers of people with a disability, and people experiencing and managing mental health issues are supported to thrive.

ANSTO assists people with disabilities by providing workplace modifications or reasonable adjustments to help them perform their job, including:

- changing when, where and how work is performed
- providing ergonomic or specialist equipment
- making physical changes to access (accessibility parking permits and spaces).

All new buildings and areas being renovated at ANSTO must comply with the relevant disability legislation. We are making ongoing improvements to the accessibility of our campuses, including widening footpaths and equipping meeting rooms (above 100m2) with hearing loops.

In the event that a workplace design has excluded facilities for people with disabilities, or the work environment is unsafe for people with disabilities to fulfil their duties, ANSTO reviews whether the work environment can be modified. ANSTO's policies and procedures align with the requirements of the *Equal Employment Opportunity (Commonwealth Authorities) Act 1987* and the *Disability Discrimination Act 1992*, intended to ensure employees with disabilities working at ANSTO, as well as applicants for recruitment who have a disability, are not discriminated against. ANSTO also has procedures and support in place to handle complaints and grievances which may be raised by employees and visitors.

Meditation and multi-faith prayer space

ANSTO's Lucas Heights campus has two dedicated spaces that can be used for meditation and prayer, including a meeting room and a silent room. This facility is intended to provide staff with a quiet and peaceful place. Rooms for private reflection, meditation and prayer are also available to our staff working at ANSTO's Clayton campus. These spaces accommodate all religious affiliations and denominations. As such, they are part of ANSTO's ongoing commitment to provide facilities that enable a balance between personal, work and faith-based commitments.

Equipping and empowering our leaders

Our leadership program, LEAD, is a six-month critical leadership skill-building course, which includes theory, workshops and approaches to help move our future leaders into roles requiring greater complexity and at scale. The program provides participants with the opportunity to take part in challenging and supportive development experiences, group discussions, personal reflections and use of real ANSTO examples. The program also draws in the experience of senior managers to expand content in the context of our values and commitment to diversity and inclusion, which are at the core of our organisational success.

Knowledgeable and skilled managers are central to meeting the challenges that lay ahead and to delivering outcomes for ANSTO. ANSTO's Management Development Program (MDP) drives progress towards lifting the skills and capabilities of our managers to ensure a high performing, driven and trusted management group. This is done by encouraging a culture of continuous individual and organisational investment in learning, sharing of learning resources and partnering with ANSTO subject matter experts as facilitators. Our people need not only to develop new skills but to stay open to new ideas and new ways of working. ANSTO engages in continuous investment in the development of our people, thereby building a stronger foundation from which to deliver outcomes.

Supporting staff through adversity

As the COVID-19 pandemic continued to present challenges during FY22, ANSTO maintained its use of flexible working arrangements across the organisation. In terms of returning to work, a hybrid model has been adopted to promote a healthy work-life balance. Flexible work arrangements help staff to live a lifestyle which can balance the priorities of work, family and community; and the benefits extend not only to individual mental and physical health and wellbeing, but also to relationships with wider family and social networks.

Remuneration Report

Introduction

The categories of officials, employees of ANSTO, covered by the disclosures are:

- Key Management Personnel (KMP) - members of the Board, the Risk and Audit Committee and the Executive Leadership team disclosure in Table 1.
- Senior executives: employees who are assigned General Manager or equivalent roles and delegations, disclosed in Table 2.
- Other highly paid staff: employees with total remuneration of greater than $235,000 not disclosed in Table 1 or 2, disclosed in Table 3.
- The remuneration of the Risk and Audit Committee members is separately disclosed in Table 4.

Remuneration policies and practices

The remuneration of the ANSTO Board is in accordance with the Remuneration Tribunal (Remuneration and Allowances for Holders of Part-time Public Office) Determination 2020.

The remuneration parameters of the Chief Executive Officer are determined by the Australian Government Remuneration Tribunal. The ANSTO Remuneration and Nominations Committee assist the Board in fulfilling its responsibilities with regard to overall remuneration policy and strategy, performance and remuneration of the CEO.

Members of the Executive Leadership Team are on individual contracts which are based on market rates at the time of employment. The remuneration reflects qualifications, experience and levels of responsibility for each role. The Remuneration and Nominations Committee oversees the approach to performance and remuneration of the Executive Leadership Team.

Senior Manager and high paid positions are remunerated either in accordance with the ANSTO Enterprise Agreement salary tables or under individual contracts. Each role has a Position Description detailing the roles, responsibilities, reporting lines, delegations, qualifications, skills and knowledge required. The role is subject to the Mercer job evaluation system and is benchmarked to ensure the appropriateness of remuneration. The Enterprise Agreement sets out the remuneration and entitlements of employees. ANSTO has aligned with the Australian Public Sector Commission bonus policy review and ceased all incentive schemes effective 30 June 2020. As a result, the only remaining incentive payments to be made paid refers to any deferral payments earned prior to 30 June 2020.

Remuneration governance arrangements

The operations of the Remuneration and Nominations Committee for the year are detailed in the Corporate Governance Statement.

Table 1 - KMP

		Short Term Benefits			Post Employment Benefits	Other Long Term Benefits[2]		Termination Benefits	Total Remuneration[1]
Name	Position Title	Base Salary $	Bonus $	Other Benefits $	Super Contributions $	Long Service Leave $	Other Long Term Benefits $	$	$
The Hon Annabelle Bennett, AC SC	Board Chair	102,624	-	1,145	15,744	-	-	-	**119,513**
Ms Penny Dobson	Deputy Board Chair	76,968	-	1,086	7,667	-	-	-	**85,722**
Dr Gordon de Brouwer, PSM	Board Member and RAC Chair	67,611	-	4,399	10,377	-	-	-	**82,387**
Emeritus Professor Stephen Buckman, AM	Board Member	51,242	-	4,195	7,872	-	-	-	**63,309**
Professor Brigid Heywood	Board and RAC Member	59,477	-	1,841	9,124	-	-	-	**70,443**
Professor Andrew Scott, AM	Board Member to 28 September 2021	11,018	-	-	1,180	-	-	-	**12,197**
Ms Andrea Sutton	Board Member and RAC Member	62,522	-	1,789	9,582	-	-	-	**73,894**
Mr Greg Storr	Board Member from 16 September 2021	40,225	-	1,159	6,055	-	-	-	**47,439**
Mr David Antaw	RAC Member	8,235	-	-	1,253	-	-	-	**9,488**
Mr Stephen Ludlam	RAC Member	8,235	-	854	1,253	-	-	-	**10,342**
Mr Shaun Jenkinson	Chief Executive Officer and Board Member	483,062	17,555	-	25,000	11,948	67,842	-	**605,406**
Mr John Edge	Chief Operating Officer	383,532	-	-	37,148	8,765	19,132	-	**448,578**
Ms Pamela Naidoo-Ameglio	Group Executive, Nuclear Precinct	357,400	18,513	-	56,532	12,540	16,552	-	**461,536**
Mr Con Lyras	Group Executive, Asset Maintenance and Engineering and Chief Engineer	347,869	16,008	-	27,295	20,465	16,835	-	**428,471**
Ms Marianne Morton	Chief Information and Digital Officer	321,536	14,994	-	31,785	13,258	14,540	-	**396,113**
Professor Andrew Peele	Group Executive, Nuclear Science and Technology	401,150	4,930	-	24,960	33,912	16,427	-	**481,379**
Ms Jayne Senior	Group Executive, Customers Products and Services to 30 September 2021	80,846	11,530	-	7,380	2,632	-	-	**102,388**
Mr Oleh Nakone	Group Executive, Customers Products and Services from 4 October 2021	287,597	-	-	23,000	4,728	-	-	**315,325**
ANSTO KMP		**3,151,149**	**83,530**	**16,468**	**303,207**	**108,247**	**151,328**	**-**	**3,813,928**
Subsidiary KMP		43,742	-	-	5,499	-	-	-	**49,241**
TOTAL Consolidated KMP - Financial Statements Note 4.3		**3,194,891**	**83,530**	**16,468**	**308,705**	**108,247**	**151,328**	**-**	**3,863,169**

1. Remuneration is reflected on an accruals basis not a cash basis and has not been annualised.

2. Other long term benefits reflect long term incentives.

Table 2 - Senior Executives

		Short Term Benefits			Post Employment Benefits	Other Long Term Benefits		Termination Benefits	Total Remuneration[1]
Total Remuneration Bands	Number of Senior Executives[2]	Base Salary $	Bonus[3] $	Other Benefits $	Super Contributions $	Long Service Leave $	Other Long Term Benefits $	$	$
$0 - $220,000	16	93,765	(4,750)	8	12,569	3,679	-	-	**105,270**
$220,001 - $245,000	2	190,909	-	-	30,115	8,038	-	-	**229,062**
$245,001 - $270,000	2	222,545	-	-	31,722	8,028	-	-	**262,296**
$270,001 - $295,000	5	242,476	3	-	31,570	8,552	-	-	**282,600**
$295,001 - $320,000	9	260,278	(3,831)	-	36,014	13,059	-	-	**305,520**
	34								

1. Remuneration is reflected on an accruals basis not a cash basis.
2. Remuneration has only been included for the period the employee is in a General Manager or equivalent role.
3. The negative figures in the bonus column represents the movement in the accrual from 2020-21 to 2021-22 net of payments.

Table 3 - Other Highly Paid Officers

		Short Term Benefits			Post Employment Benefits	Other Long Term Benefits		Termination Benefits	Total Remuneration[1]
Total Remuneration Bands	Number of Highly Paid Officers	Base Salary $	Bonus $	Other Benefits $	Super Contributions $	Long Service Leave $	Other Long Term Benefits $	$	$
$235,001 - $245,000	8	197,137	1,328	-	31,222	9,798	-	-	**239,485**
$245,001 - $270,000	6	182,017	1,743	-	28,997	7,139	-	38,352	**258,248**
$270,001 - $295,000	4	239,599	-	90	33,882	2,083	-	-	**275,654**
$295,001 - $320,000	2	149,703	-	-	13,712	17,454	-	124,106	**304,975**
$370,001 - $395,000	1	331,841	-	-	27,099	14,470	-	-	**373,410**
$395,001 - $420,000	1	264,737	15,632	-	42,909	15,301	-	73,759	**412,338**
	22								

1. Remuneration is reflected on an accruals basis not a cash basis and has not been annualised.

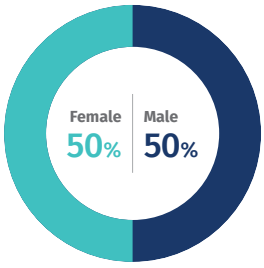
Table 4 - Risk and Audit Committee

		Short Term Benefits		Post Employment Benefits	Total Remuneration[1]
Name	Position Title	Base Salary $	Other Benefits $	Super Contributions $	$
Dr Gordon de Brouwer, PSM	Chair	16,268	-	2,505	**18,773**
Professor Brigid Heywood	Member	8,134	-	1,253	**9,387**
Ms Andrea Sutton	Member	8,134	-	1,253	**9,387**
Mr David Antaw	Member	8,134	-	1,253	**9,387**
Mr Steven Ludlam	Member	8,134	854	1,253	**10,241**

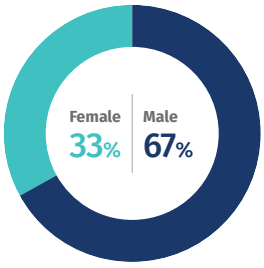
1. Remuneration is reflected on an accruals basis not a cash basis and has not been annualised.

Description	Employees (FTE)		% of Total		% of change 2022-2021	Average salary		% of change 2022-2021
Financial year	**2022**	**2021**	**2022**	**2021**		**2022**	**2021**	
Female	414.58	432.90	31.74	32.01	(4.23)	$112,160	$106,127	5.68
Male	891.61	919.71	68.26	67.99	(3.06)	$118,792	$115,655	2.71
Total	1,306.18	1,352.61	100.00	100.00	(3.43)	$116,687	$112,606	3.62
Workforce diversity								
People with disabilities	5	5	0.37%	0.36%	0.00%	$109,848	$103,954	5.67
Aboriginal and Torres Strait Islander	4	5	0.30%	0.36%	(20.00)	$96,741	$94,113	2.79
Non-English speaking background	189	196	14.16%	14.49%	(3.57)	$118,535	$118,185	0.30

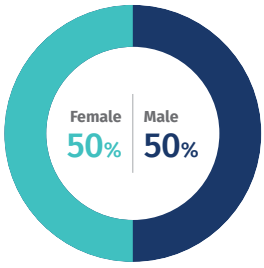
ANSTO Board

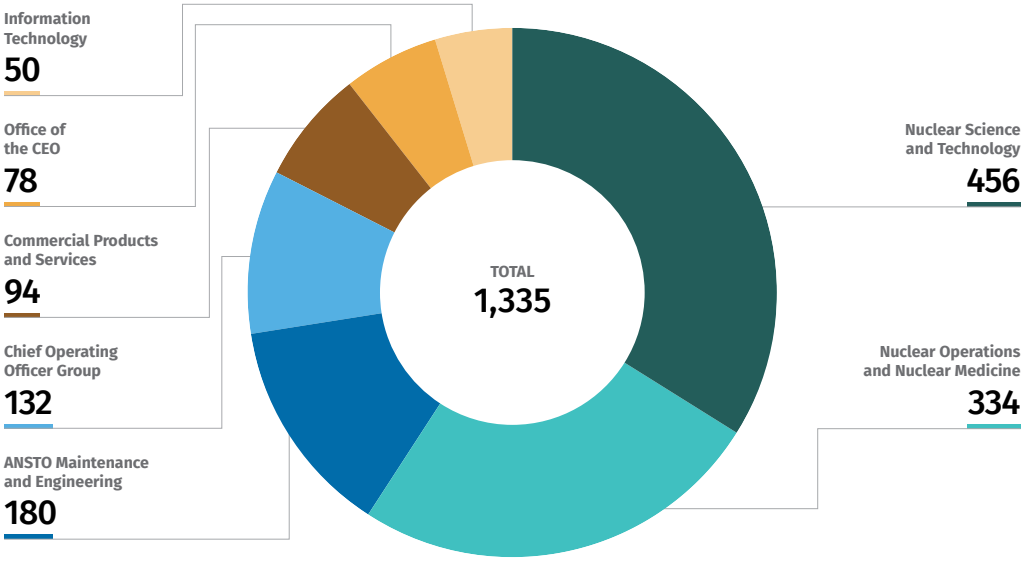


ANSTO Executive



Senior People Managers





Headcount as at 30 July 2022

Reporting under the Modern Slavery Act 2018 (MS Act)

ANSTO understands that ethical conduct and protecting human rights are both critical to upholding our values and delivering our core mandate. We are committed to contributing to the eradication of modern slavery through compliant, responsible and ethical business practices. ANSTO's Modern Slavery Statement outlines how we assess and address modern slavery risks in our business and supply chain, as well as our plans for continuous improvement in the future. This statement can be accessed here:

www.ansto.gov.au/media/4831/download

ANSTO intends to update this statement for the 2021–2022 reporting period prior to the statutory deadline.

Reporting under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Achieving ecologically sustainable development (ESD)

ANSTO's commitment to environmental protection and sustainability principles is defined in its Health, Safety, Community and Environmental Policy, Corporate Plan and organisational core values.

www.ansto.gov.au/health-safety-policy

These values are integral to ANSTO's Business Management System — the framework that defines how business is conducted to deliver outcomes to ANSTO's customers and stakeholders in a safe, consistent and environmentally responsible manner. Objectives and targets for safe, secure and sustainable operations are implemented through documented operational and business plans at all levels of the organisation.

Environmental protection is mandated when planning and undertaking major capital works, and any activities which fall under the EPBC Act are assessed for referral to the Department of Climate Change, Energy, the Environment and Water. Proposals for new (or modifications to existing) facilities or activities also undergo a rigorous internal safety, regulatory and environmental assurance process.

ESD principles are embedded in ANSTO's core values and in decisions relating to procurement and project activities throughout their planning and development phases. ANSTO's Environmental Sustainability Strategy aims to significantly reduce our environmental footprint by embedding environmental and sustainability considerations into all business decision-making processes. In addition, the ANSTO Building Code provides the minimum sustainable design standards by which new and refurbished facilities at ANSTO must conform. This Code is periodically reviewed to ensure the most appropriate sustainable design outcomes for building and infrastructure works at ANSTO.

www.ansto.gov.au/environmental-protection

Environmental and quality management systems

To provide assurance that we implement appropriate environmental protection and management practices, ANSTO maintains an environmental management system that is independently certified to the International Standard ISO14001. ANSTO's environmental management system provides the framework to identify environmental risks and appropriately control them. ANSTO's extensive environmental monitoring program also operates within a quality framework that is certified to the International Standard ISO9001 for quality management systems. Within this framework, ANSTO's environmental protection measures and performance are frequently reviewed.

Environmental performance

Information on ANSTO's environmental performance for FY22, along with a critical analysis of the results and a comparison to previous years, is published here:

www.ansto.gov.au/environmental-performance

ANSTO continues to report annually on its greenhouse gas emissions as well as energy consumption and production, as required under section 19 of the *National Greenhouse and Energy Reporting Act 2006*. The data is aggregated and disseminated by the Department of Industry, Science and Resources.

ANSTO routinely reports to regulators on its performance and communicates with other interested parties where there is a possibility that any activities may have an impact on the environment.

During the high rainfall event, which affected the Sydney metropolitan area in early March 2022, ANSTO was required to conduct a controlled overflow of sewer into a tributary of the Woronora River. This action was designed to prevent an uncontrolled discharge of trade wastewater into stormwater. The controlled sewer overflow lasted for approximately 20 hours on 8–9 March 2022. No radiological or chemical contaminants

were released into the environment, and it was determined that the impact to the environment was minimal. ANSTO voluntarily notified Sydney Water and the NSW Environmental Protection Agency — no further actions were requested.

An important, detailed internal investigation was conducted and several stormwater ingress points into the sewer system were identified. These have now been rectified. The performance of these rectifications was tested during a subsequent heavy rainfall event in April 2022. A significant reduction of stormwater ingress into the sewer was observed, resulting in no overflow of sewer into the environment from this subsequent rainfall event.

Environmental monitoring program

ANSTO conducts an extensive effluent and environmental monitoring program that measures radioactivity in authorised emissions to air and liquid effluent discharges to the sewer; and in samples of air, surface water, ground water, sediment and biota from the local environment. Many of the monitoring results are independently verified.

The results of environmental monitoring conducted in 2021–2022 demonstrate that ANSTO's authorised releases of radioactive material to the air and sewer continue to be effectively controlled, comply with regulatory limits, and have minimal radiological impact on humans, wildlife or the environment. A summary of the environmental monitoring results for 2021–2022 is available here:

Local environmental radiation and weather conditions are reported here:

www.ansto.gov.au/environmental-monitoring/lucas-heights-weather-station

Environmental protection in operations

ANSTO has adopted an integrated approach to planning and decision-making in order to optimise the efficient and effective management of its operations.

Within the ANSTO Building Code, the principles of ESD are mandated by the requirement for all new and refurbished buildings to have an independent ESD consultant involved in the design. ANSTO currently requires relevant new buildings to achieve a minimum 4.5 stars in terms of the National Australian Built Environment Rating System (NABERS) energy rating and to comply with the requirements for the Energy Efficiency in Government Operations Policy. Through the implementation of the Environmental Sustainability Strategy, ANSTO will progressively increase the minimum standards for achieving NABERS energy, water, indoor environment and waste ratings over the next eight years. Furthermore, other minimum standards for the efficient use of water in offices and laboratories, installation of rainwater tanks, re-use of wastewater and sub-metering are all enforced through the ANSTO Building Code.

Environmental protection principles are mandated for all major project activities through the implementation of project/construction environmental management plans. All capital projects such as the construction of buildings, infrastructure and support facilities must have these plans in place to prevent or minimise environmental impacts, such as emissions, waste, soil erosion, dust, noise and discharges to stormwater. Assurance for these projects includes the independent approval of these plans, ad-hoc inspections and formal audits. All projects are evaluated on their environmental protection performance on completion and throughout their life.

Recent refurbishments of existing buildings have included the installation of centralised building management systems to reduce energy costs arising from heating, ventilation and air conditioning operations, energy efficient lighting fixtures, and other energy and water efficient appliances. Integrated landscaping plans have also been applied to these projects, to improve the biodiversity outcomes surrounding these buildings.

ANSTO embeds sustainable procurement considerations into all new tenders and contracts awarded, meeting the requirements of the Commonwealth Procurement Rules, specifically seeking value-for-money and aligning to the Australian Government's Sustainable Procurement Guide. All tenders include environmental and sustainability specifications and potential suppliers must provide evidence of their commitment to environmental protection, as well as their capacity to deliver upon relevant environmental outcomes. ANSTO routinely evaluates successful suppliers on their environmental performance.

ANSTO continues to investigate opportunities to divert waste away from landfill through reuse and recycling programs, including for construction wastes, soft plastics, metals, e-waste, batteries and green waste.

ANSTO's Lucas Heights bushland perimeter covers an area of approximately 300 hectares, which includes a number of important Indigenous heritage areas, and provides a significant wildlife corridor between the Royal and Heathcote National Parks to the east and the remnant Cumberland plain woodlands to the west. ANSTO conducts regular inspections of the Lucas Heights bushland perimeter area to ensure that biodiversity values are maintained, and Indigenous cultural sites are preserved. No significant impacts to biodiversity or Indigenous cultural values have been reported during this reporting period.

Rehabilitating historically disturbed areas within the bushland perimeter area has also been established as a focus area in ANSTO's new Environmental Sustainability Strategy. Progress on achieving the relevant objectives to restore or improve the habitat within the bushland perimeter area will be monitored through routine inspections.

Supporting research and collaboration for environmentally sustainable outcomes

Leveraging its Environment Industry Engagement Strategy, ANSTO will look to build new opportunities to work with industries concerned with product sustainability and mitigating or remediating environmental impact from industrial activity. ANSTO continues to collaborate with other research partners to progress research in the key areas of air quality, soil erosion, water resource management, wetland health, biodiversity, food provenance, and climate variability and global warming impacts such as rising sea levels and temperatures on marine ecosystems.

ANSTO participates in the Sustainability Advantage Program facilitated by the NSW Office of Environment and Heritage, for which ANSTO was awarded a silver partnership award in 2019. In March 2022, a sustainability diagnostic was facilitated by Sustainability Advantage to assist ANSTO to develop an action plan, which will support the implementation of the Environmental Sustainability Strategy, and more generally, improve business efficiency and effectiveness outcomes for ANSTO.

Supporting staff to be environmentally sustainable

Environmental awareness is promoted throughout the organisation via inductions, the staff intranet, training and communication programs. ANSTO encourages staff to cycle, carpool, or take public transport to travel to work, and to walk rather than drive around the site. A new shared path connecting the Lucas Heights site to the neighbouring suburb of Barden Ridge was completed in late 2020, further encouraging staff living in the area to walk or ride to work.

In terms of resource use, ANSTO's chemical management system enables staff in different business areas to share and track chemical resources, which reduces the need to procure new chemicals. ANSTO is also utilising the system to better determine its reporting requirements under the National Pollution Inventory and to improve the identification and control of environmentally hazardous chemicals.

In addition, further advancements in the transition to full digital authorisations and workflows continue, with the aim of eventually achieving a paperless office environment.

Referrals

Within this reporting period ANSTO submitted two referrals under the EPBC Act:

- **2021/8998 —** Return of Australian Intermediate Level Radioactive Waste from the UK

  The return of radioactive waste from the United Kingdom to ANSTO was completed in March 2022, without incident and in full conformance with the EPBC referral submission.

- **2021/9025 —** Intermediate Level Solid Waste Storage Facility

The project is in tender stage for supply of the design and construction of the facility. The design, once commenced, will integrate all of the particular manners of the EPBC referral decision. Project completion is forecast for May 2026.

Construction activities for the SYMO facility (EPBC Referral 2012/6697) have continued and are due for completion in 2023.

Regular independent inspections have been undertaken throughout these projects to evaluate conformance with the environmental commitments made by ANSTO within the referrals.

Functions and powers of the organisation under the ANSTO Act

The ANSTO Act details our functions, powers, Board, Chief Executive Officer's duties, staffing, finance, and other roles and responsibilities.

The Act (No. 3 of 1987 as amended) and taking into account amendments up to Act No. 109 of 2017, as prepared by the Office of Legislative Drafting and Publishing, Attorney-General's Department, Canberra (19 September 2017) and can be found on the Federal Register of Legislation.

A summary of the key statutory provisions in relation to ANSTO's functions are outlined below.

Section 3: Interpretation

"scientific research, innovation and training" includes the following, whether or not related to nuclear science and nuclear technology:

(a) any activities in the fields of natural or applied science (including engineering and technology) for the extension or application of knowledge;

(b) any activities that involve innovation or high levels of technical risk for the purposes of creating new or improved materials, products, devices or processes;

(c) the education and training of persons in matters related to activities mentioned in paragraph (a) or (b).

Section 5: Functions of Organisation

(1) The functions of the Organisation are:

(a) to undertake research and development in relation to:

(i) nuclear science and nuclear technology; and

(ia) the application and use of nuclear science and nuclear technology; and

(ii) the production and use of radioisotopes, and the use of isotopic techniques and nuclear radiation, for medicine, science, industry, commerce and agriculture; and

(iii) such other matters as the Minister directs; and

(b) to encourage and facilitate the application and use of the results of such research and development; and

(ba) to condition, manage and store radioactive materials and radioactive waste, arising from:

(i) the Organisation's activities (including the production of radioactive materials for other persons); or

(ii) the activities of companies in which the Organisation holds a controlling interest (including the production of radioactive materials for other persons); or

(iii) the use by other persons of radioactive materials produced by the Organisation or such companies; or

(iv) the activities of other persons who are specified in the regulations; and

(bb) to condition, manage and store radioactive materials and radioactive waste generated, possessed or controlled by the Commonwealth or a Commonwealth entity; and

(bc) to condition, manage and store radioactive materials and radioactive waste at the request of:

(i) a law enforcement agency; or

(ii) a Commonwealth, State or Territory agency responsible for the management of emergencies or disasters; including, but not limited to, radioactive materials or radioactive waste involved in, or arising out of, a radiological incident or a radiological emergency; and

(bd) to condition, manage and store radioactive waste that has been, or is to be, sent to Australia under contractual arrangements relating to the conditioning or reprocessing of ANSTO spent nuclear fuel; and c) to produce, acquire, provide and sell goods, and to provide services, that are:

(i) in connection with the production and use of radioisotopes, and the use of isotopic techniques and nuclear radiation, for medicine, science, industry, commerce and agriculture; or

(ia) in connection with the conditioning, management and storage of radioactive materials or radioactive waste; or

(ib) in connection with nuclear science and nuclear technology; or

(ic) in connection with the application and use of nuclear science and nuclear technology; or

(ii) otherwise in connection with matters related to its activities; and

(d) to act as a means of liaison between Australia and other countries in matters related to its activities; and

(e) to provide advice on aspects of:

(i) nuclear science and nuclear technology; and

(ii) the application and use of nuclear science and nuclear technology; and

(iii) other matters related to its activities; and

(ea) to make available to other persons, whether or not on a commercial basis, the knowledge, expertise, equipment, facilities, resources and property of the Organisation by:

(i) providing training and management expertise; or

(ii) selling or leasing equipment; or

(iii) leasing land, buildings and facilities; or

(iv) taking any other action that the Organisation thinks appropriate; and

(f) to cooperate with appropriate authorities of the Commonwealth, the States and the Territories, and with other organisations and institutions in Australia or elsewhere, in matters related to its activities; and

(g) to publish scientific and technical reports, periodicals and papers on matters related to its activities; and

(h) to collect and sell or distribute, as appropriate, information and advice on matters related to its activities; and

(j) to arrange for training, and the establishment and award of scientific research studentships and fellowships, in matters related to its activities; and

(k) to make grants in aid of research into matters related to its activities; and

(m) to make arrangements with universities and other educational research institutions, professional bodies and other persons for the conduct of research or of other activities in matters related to its activities.

(1A) A regulation made for the purposes of subparagraph (1)(ba)(iv) must not have the effect of authorising the premises on which the Lucas Heights Research Laboratories are situated to become a national nuclear waste repository.

(1B) In subsection (1A): "national nuclear waste repository" means a site chosen by the Commonwealth, after the commencement of this subsection, for the storage of nuclear waste with a view to it never being moved to another site.

Section 6A: Constitutional limits

(1) The Organisation may perform its functions only:

(a) for purposes relating to activities that are peculiarly adapted to the government of a nation and cannot otherwise be carried on for the benefit of the nation; or

(b) for purposes relating to trade and commerce:

(i) between Australia and places outside Australia; or

(ii) among the States; or

(iii) within a Territory, between a State and a Territory or between 2 Territories; or

(c) for purposes relating to postal, telegraphic, telephonic or other like services;

(d) for purposes relating to the security or defence of Australia; or

(e) for purposes relating to astronomical and meteorological observations; or

(f) for purposes relating to statistics; or

(g) for purposes relating to weights and measures; or

(h) for purposes relating to copyrights, patents of inventions and designs, and trademarks; or

(i) for purposes relating to the provision of medical and dental services; or

(j) for purposes related to external affairs, including:

(i) giving effect to any international agreement to which Australia is a party; and

(ii) addressing matters of international concern; and

(iii) by way of the performance of its functions in a place outside Australia; or

(k) for purposes relating to the relations of the Commonwealth with the islands of the Pacific; or

(l) in, or for purposes relating to, a Territory; or

(m) in, or for purposes relating to, a Commonwealth place (within the meaning of the Commonwealth Places (Application of Laws) Act 1970); or

(n) for purposes relating to matters incidental to the execution of any of the legislative powers of the Parliament or the executive power of the Commonwealth.

(2) A term used in subsection (1) and the Constitution has the same meaning in that subsection as it has in the Constitution

Statement of Expectations Index

Minister's Statement of Expectations	Page(s)
Resolving national challenges	
Deliver world-class research and nuclear science services	**18-22**
Conduct a broad spectrum of nuclear-related research and development, and possess an expert understanding of global nuclear research, developments and emerging issues and opportunities	**18-22**
Protect the national interest through the provision of specialist nuclear advice to government and Australian businesses with nuclear interests, and act as a means of liaison between Australia and other countries	**4-51**
Advancing the government's policy priorities	
Continue to make an important contribution to science under the 2017 Science Statement; the 2016 National Research Infrastructure Roadmap; and the 2015 National Innovation and Science Agenda	**18-22**
Work with the Department on how the science and research capabilities of ANSTO can be harnessed in support of the emerging policy priorities of government	**32-37**
Support the health of Australians with nuclear medicines	**11, 30-31**
Work collaboratively to advance Australian industry	**18-22, 28, 31**
Manage research infrastructure and national facilities	**16-29**
Embrace the digital economy	**43**
Promote STEM equity	**40-41, 112,113**
Driving ANSTO's performance	
Legislative requirements	**All**
Sustainable operations and governance	**52-63, 118-120**
Agency staff and health	**42-47**
Communication of ANSTO's science and research	**35-38**
Working with the Department and Ministerial office	**32-33, 56**

Compliance index

PGPA Rule reference	Part of report	Description	Requirement
17BE(a)	**122-123**	Details of the legislation establishing the body.	**Mandatory**
17BE(b)(i)	**122-123**	A summary of the objects and functions of the entity as set out in legislation.	**Mandatory**
17BE(b)(ii)	**12**	The purposes of the entity as included in the entity's corporate plan for the reporting period.	**Mandatory**
17BE(c)	**56**	The names of the persons holding the position of responsible Minister or responsible Ministers during the reporting period, and the titles of those responsible Ministers.	**Mandatory**
17BE(d)	**56**	Directions given to the entity by the Minister under an Act or instrument during the reporting period.	**If applicable, mandatory**
17BE(e)	**N/A**	Any government policy order that applied in relation to the entity during the reporting period under section 22 of the Act.	**If applicable, mandatory**
17BE(f)	**N/A**	Particulars of non-compliance with: **(a)** a direction given to the entity by the Minister under an Act or instrument during the reporting period; or **(b)** a government policy order that applied in relation to the entity during the reporting period under section 22 of the Act.	**If applicable, mandatory**
17BE(g)	**14-51**	Annual performance statements in accordance with paragraph 39(1)(b) of the Act and section 16F of the rule.	**Mandatory**
17BE(h),17BE(i)	**N/A**	A statement of significant issues reported to the Minister under paragraph 19(1)(e) of the Act that relates to non-compliance with finance law and action taken to remedy non-compliance.	**If applicable, mandatory**
17BE(j)	**127**	Information on the accountable authority, or each member of the accountable authority, of the entity during the reporting period.	**Mandatory**
17BE(k)	**54-55**	Outline of the organisational structure of the entity (including any subsidiaries of the entity).	**Mandatory**
17BE(ka)	**128-129**	Statistics on the entity's employees on an ongoing and non-ongoing basis, including the following: **(a)** statistics on full-time employees; **(b)** statistics on part-time employees; **(c)** statistics on gender; **(d)** statistics on staff location.	**Mandatory**
17BE(l)	**53**	Outline of the location (whether or not in Australia) of major activities or facilities of the entity.	**Mandatory**
17BE(m)	**56-65**	Information relating to the main corporate governance practices used by the entity during the reporting period.	**Mandatory**
17BE(n), 17BE(o)	**59**	For transactions with a related Commonwealth entity or related company where the value of the transaction, or if there is more than one transaction, the aggregate of those transactions, is more than $10,000 (inclusive of GST): **(a)** the decision-making process undertaken by the accountable authority to approve the entity paying for a good or service from, or providing a grant to, the related Commonwealth entity or related company; and **(b)** the value of the transaction, or if there is more than one transaction, the number of transactions and the aggregate of value of the transactions.	**If applicable, mandatory**
17BE(p)	**60**	Any significant activities and changes that affected the operation or structure of the entity during the reporting period.	**If applicable, mandatory**
17BE(q)	**62-63**	Particulars of judicial decisions or decisions of administrative tribunals that may have a significant effect on the operations of the entity.	**If applicable, mandatory**

PGPA Rule reference	Part of report	Description	Requirement
17BE(r)	**62-63**	Particulars of any reports on the entity given by: **(a)** the Auditor-General (other than a report under section 43 of the Act); or **(b)** a Parliamentary Committee; or **(c)** the Commonwealth Ombudsman; or **(d)** the Office of the Australian Information Commissioner.	**If applicable, mandatory**
17BE(s)	**N/A**	An explanation of information not obtained from a subsidiary of the entity and the effect of not having the information on the annual report.	**If applicable, mandatory**
17BE(t)	**63**	Details of any indemnity that applied during the reporting period to the accountable authority, any member of the accountable authority or officer of the entity against a liability (including premiums paid, or agreed to be paid, for insurance against the authority, member or officer's liability for legal costs).	**If applicable, mandatory**
17BE(taa)	**58-59, 128**	The following information about the audit committee for the entity: **(a)** a direct electronic address of the charter determining the functions of the audit committee; **(b)** the name of each member of the audit committee; **(c)** the qualifications, knowledge, skills or experience of each member of the audit committee; **(d)** information about each member's attendance at meetings of the audit committee; **(e)** the remuneration of each member of the audit committee.	**Mandatory**
17BE(ta)	**114-116**	Information about executive remuneration.	**Mandatory**
17BF		Disclosure requirements for government business enterprises	
17BF(1)(a)(i)	**66-108**	An assessment of significant changes in the entity's overall financial structure and financial conditions.	**If applicable, mandatory**
17BF(1)(a)(ii)	**66-108**	An assessment of any events or risks that could cause financial information that is reported not to be indicative of future operations or financial conditions.	**If applicable, mandatory**
17BF(1)(b)	**66-108**	Information on dividends paid or recommended.	**If applicable, mandatory**
17BF(1)(c)	**N/A**	Details of any community service obligations the government business enterprise has including: **(a)** an outline of actions taken to fulfil those obligations; and **(b)** an assessment of the cost of fulfilling those obligations.	**If applicable, mandatory**
17BF(2)	**N/A**	A statement regarding the exclusion of information on the grounds that the information is commercially sensitive and would be likely to result in unreasonable commercial prejudice to the government business enterprise.	**If applicable, mandatory**

PGPA Rule section 17BE(j), (i)–(v) — Accountable Authority

Details of Accountable Authority during the reporting period — Current report period (2021–22)

Name	Qualifications of the Accountable Authority	Experience of the Accountable Authority	Executive / Non-Executive Position Title / Position held	Date of Commencement	Date of Cessation	Number of meetings of accountable authority attended/ total number of meetings of accountable authority eligible to attend
The Hon Dr Annabelle Bennett AC SC	BSc (Hons), PhD, LLB, D Univ (hon Causa), D Laws (hon Causa)	Chancellor of Bond University and practicing consultant Senior Counsel, mediator and arbitrator.*	Non-Executive Board Chair	21 March 2019	20 March 2024	**9/9**
Ms Penelope (Penny) J Dobson	Dip Pharm, MPS, MBA, GAICD	Global pharmaceutical executive and businessperson.*	Non-Executive Deputy Board Chair	**APPOINTED:** 24 April 2014 **APPOINTED DEPUTY CHAIR:** 14 March 2018 **APPOINTED ACTING CHAIR:** 1 September 2018 – 20 March 2019 **REAPPOINTED:** 24 April 2019	23 April 2024	**9/9**
Mr Shaun Jenkinson (CEO)	BSc (Hons), GAICD	Chief Executive Officer.*	CEO	**ACTING CEO:** 10 August 2020 – 30 March 2021 **APPOINTED CEO:** 31 March 2021 *for a 3-year term*	30 March 2024	**9/9**
Emeritus Professor Stephen Buckman, AM	BSc (Hons), PhD, FAPS, FAIP, FinstP	Academic and researcher at ANU.*	Non-Executive Board Member	**APPOINTED:** 23 July 2015 **REAPPOINTED:** 23 July 2020	22 July 2023	**9/9**
Dr Gordon de Brouwer, PSM	BComm (First Class Hons), MComm, PhD	Senior leader in the Australian Government.	Non-Executive Board Member	**APPOINTED:** 4 April 2019	**RESIGNED:** 30 June 2022	**8/9**
Professor Brigid Heywood	BSc (Hons), PhD	Experienced leader in the university sector.*	Non-Executive Board Member	**APPOINTED:** 28 June 2016 **REAPPOINTED (ACTING):** 28 June 2021 **REAPPOINTED:** 28 September 2021	27 September 2025	**9/9**
Professor Andrew M Scott, AM	MBBS (Hons), MD, FRACP, DDU, FAICD, FAANMS	Nuclear medicine physician, scientist, and academic.	Non-Executive Board Member	**APPOINTED:** 26 September 2007 **REAPPOINTED:** 29 September 2011 **REAPPOINTED:** 29 September 2016	28 September 2021	**4/4**
Dr Gregory (Greg) Storr	BSc (Hons), PhD, GAIP	Nuclear engineering and safety specialist.*	Non-Executive Board Member	**APPOINTED:** 16 September 2021	15 September 2024	**5/5**
Ms Andrea Sutton	BEng Chemical (Hons), GradDipEcon	Senior executive in the mining industry.*	Non-Executive Board Member	**APPOINTED:** 30 April 2020	29 April 2025	**9/9**

* See full bio at www.ansto.gov.au/ansto-board

PGPA Rule Section 17BE (taa) - Audit committee

Risk and Audit committee

Member name	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of meetings attended / total number of meetings	Additional Information
Dr Gordon de Brouwer, PSM (Chair)	BComm (First Class Hons), MComm, PhD Senior leader in the Australian Government.	**8/8**	Dr de Brouwer resigned from the ANSTO Board on 30 June 2022 and as a result, the Risk and Audit Committee
Mr David Antaw	B.Bus. MComm Senior corporate executive.	**8/8**	
Professor Brigid Heywood	BSc (Hons), PhD Experienced leader in the university sector.*	**8/8**	
Mr Stephen Ludlam	MSc NucEng Global submarine expert.	**8/8**	
Ms Andrea Sutton	BEng Chemical (Hons), GradDipEcon Senior executive in the mining industry.*	**8/8**	

* See full bio at www.ansto.gov.au/ansto-board

PGPA Rule section 17BE(ka) — Management of Human Resources

All ongoing employees current report period (2021–2022)

	Male			Female			Indeterminate			Total
	Full-time	Part-time	Total male	Full-time	Part-time	Total female	Full-time	Part-time	Total indeterminate	
NSW	734	19	753	288	66	354	–	–	–	1107
Vic	83	4	87	24	1	25	–	–	–	112
Overseas	-	-	-	1	–	1	–	–	–	1
Total	817	23	840	313	67	380	–	–	–	1,220

All non-ongoing employees current report period (2021–2022)

	Male			Female			Indeterminate			Total
	Full-time	Part-time	Total male	Full-time	Part-time	Total female	Full-time	Part-time	Total indeterminate	
NSW	35	1	36	37	3	40	–	–	–	76
Vic	23	–	23	15	1	16	–	–	–	39
Total	58	1	59	52	4	56	–	–	–	108

All ongoing employees previous report period (2020–2021)

	Male			Female			Indeterminate			Total
	Full-time	Part-time	Total male	Full-time	Part-time	Total female	Full-time	Part-time	Total indeterminate	
NSW	750	19	769	299	72	371	–	–	–	1,140
Vic	93	2	95	28	1	29	–	–	–	124
Overseas	1	–	1	–	–	–	–	–	–	1
Total	844	21	865	327	73	400	–	–	–	1,265

All non-ongoing employees previous report period (2021–2022)

	Male			Female			Indeterminate			Total
	Full-time	Part-time	Total male	Full-time	Part-time	Total female	Full-time	Part-time	Total indeterminate	
NSW	35	3	38	39	–	39	–	–	–	77
Vic	24	–	24	15	1	16	–	–	–	40
Total	59	3	62	54	1	55	–	–	–	117

Contact details

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Australian Embassy
Mattiellistrasse 2–4 A-1040
Vienna, Austria

PHONE **+43 699 13550400**
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Australian Government

Locations

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www.ansto.gov.au

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