

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
Industry, Innovation and Science Portfolio
2016-17 Supplementary Budget Estimates
20 October 2016

AGENCY: AUSTRALIAN NUCLEAR SCIENCE AND TECHNOLOGY ORGANISATION

TOPIC: Research program at Lucas Heights

REFERENCE: Written Question – Senator Carr

QUESTION No.: SI-77

What is the science impact of ANSTO's research program at Lucas Heights?

- a. How many research projects rely on the facility, in total?
- b. How many of these are PhD projects?
- c. How many countries' researchers utilise the facility?

ANSWER

As the custodian of much of Australia's landmark science infrastructure, including the OPAL multipurpose research reactor, the Centre for Accelerator Science and the Australian Centre for Neutron Scattering, ANSTO provides Australian and international researchers with access to world-leading capabilities. These capabilities allow researchers to apply nuclear techniques to address some of the most complex scientific and industrial challenges facing society, including in environment, health, energy, agriculture and engineering, and across the breadth of the National Science and Research Priorities.

Beyond providing local access to world-class facilities, ANSTO's strong collaborative networks ensure ANSTO and other Australian scientists are connected to a global network of leading researchers and experts. To this end, ANSTO has recently entered two key international agreements, which will help Australian scientists participate in research at the global forefront, and will cement Australia's place as a world leader in the peaceful applications of nuclear science and technology.

International collaboration

Over several years, ANSTO has led Australia's bid to join the Generation IV International Forum (GIF), which culminated earlier this year in the unanimous approval of Australia's membership by the 13 existing GIF members.

GIF is a consortium of 13 advanced countries and the European Union, working together to develop the next generation of nuclear reactor technology. Australia's success in gaining membership was largely based on the world-class capabilities and expertise held within ANSTO, in particular in the development of materials for applications in extreme industrial environments, and in the development of nuclear safety cases. Australia's participation in GIF will, at minimal cost, enable the nation to benefit from involvement in this major international research program, which has the potential to develop reactor designs which will further Australia's non-proliferation and nuclear safety objectives.

ANSTO signed the GIF Charter on behalf of Australia on 22 June 2016.

In another example of recent international success based on ANSTO's cutting edge capabilities, on 30 September 2016, ANSTO entered into a technical cooperation agreement with the ITER International Fusion Energy Organisation. Under the agreement, Australia will provide expertise to assist with the building of the ITER fusion project in Southern France – the largest physics and engineering project in the world. ITER is scheduled to begin operations in 2025 and aims to be the first fusion device to produce more energy than it consumes.

Importantly, this is the first time a non-ITER member country has reached a technical cooperation agreement to work on the project, which will connect the Australian community of fusion experts with their counterparts in the European Union, China, India, Japan, Russia, the United States and South Korea.

Australia's participation in both ITER and GIF is based on the ability of ANSTO to make unique and valuable contributions to these projects, which are operating at the forefront of international efforts to develop new clean energy technologies. ANSTO's capabilities and expertise are providing Australia with access into these exclusive collaborations.

- a. In financial year 2015-16, nearly 500 research projects relied on ANSTO's Lucas Heights facility, with access granted via the user program.
- b. ANSTO staff also support the Doctoral research of students from a variety of universities, and typically around 45 PhD students are supervised by ANSTO staff at any given time.
- c. From 2013-15, external researchers from around 30 countries accessed research infrastructure at the Lucas Heights facility, via ANSTO's user program.