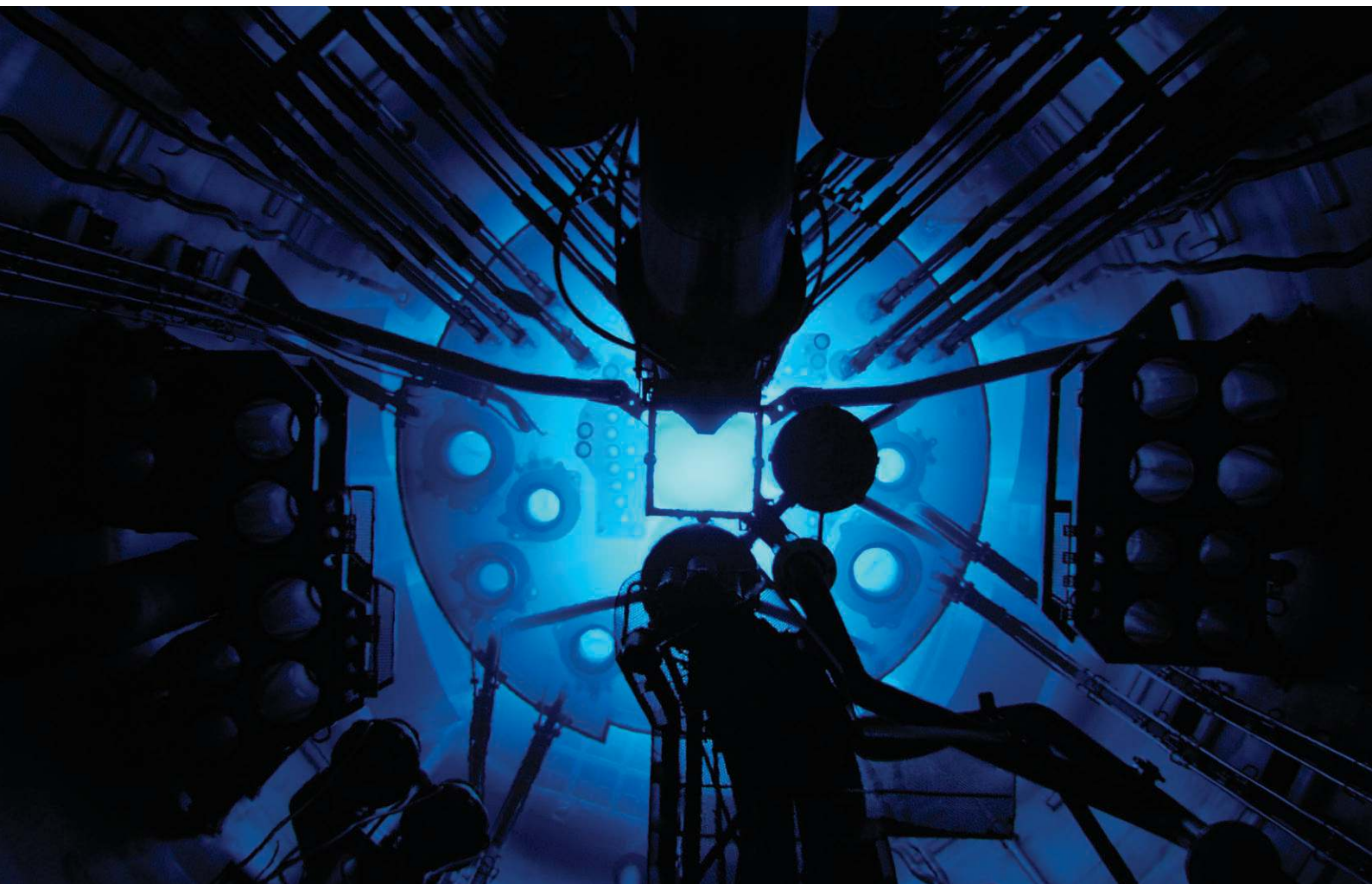




Australian Government



# THE AUSTRALIAN SCIENCE AND TECHNOLOGY SYSTEM

With 22.5 million people, Australia has only about one-fourteenth the population of the US. However, Australia is as big in land mass as the 48 contiguous US states and as geographically diverse. Publicly funded science is targeted at many of the same strategic challenges as in the US—particularly, health and medical research, marine science, climate change, agriculture, energy, resources and defense.



## National science agencies

Helping drive solutions to these challenges in Australia is the national research body known as CSIRO (Commonwealth Scientific and Industrial Research Organisation). One of the world's biggest government research agencies, it has an annual budget of close to AU\$1.4 billion (2010-11), of which the Government provides about half directly. There is a separate body devoted to defense matters, the Defence Science and Technology Organisation (DSTO), which receives a budget appropriation of about AU\$440 million. Other Government agencies include the Australian Nuclear Science and Technology Organisation, ANSTO (AU\$369 million in 2010-11), the Australian Institute of Marine Science (AIMS) based near Townsville in north Queensland (AU\$66.2 million in 2010-11), Geoscience Australia (AU\$156 million in 2010-11) and the Bureau of Meteorology (AU\$345.3 million in 2010-11).

## Funding bodies

In Australia, the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC) are the two most significant agencies that administer competitive research grants on behalf of the government. NHMRC, which focuses on health and medical research, had a 2010-2011 budget allocation of nearly AU\$792 million. The Australian Research Council (ARC), a general research granting agency, had a 2010-2011 budget allocation of more than AU\$700 million.

There are many scholarship programs available to researchers in Australia. One of the best known and most distinguished is the educational exchange program of Fulbright scholarships. These are an important mechanism for generating collaboration between Australian and US scientists.

The Australian component for 2011 has been boosted with the announcement of up to 15 'clean tech' Fulbright scholarships for those interested in renewable energy and climate science research.

About two-thirds of the Australian Government's science and technology budget is administered by the Innovation, Industry, Science and Research portfolio. The other third is administered by other government portfolios: the DSTO, for instance, is managed by the Department of Defence; and the NHMRC by the Department of Health and Ageing.

In addition, each of the eight state and territory governments has its own administration dealing with science and technology, focused on areas of specific interest. Traditionally, because of their constitutional responsibilities, all states have been interested in public health, education, and agriculture. But some states, such as Victoria and Queensland, have made research and development (R&D) itself a specific economic focus, and have put significant funding into developing research infrastructure.

## Universities

Research is a focus at all of Australia's 41 universities, only two of which are private. About twice as much is spent on R&D by Australia's universities and medical research institutes as is spent directly by federal government science agencies. Much of the sector's research funding is provided in the form of competitive grants and block grants designed to support the indirect costs of research. In total, the Australian Government provides about AU\$2.5 billion to universities to support their research and research training activities, and this is complemented by research funding from the private sector, non-profit organizations and state governments.

While there is not a strong history of philanthropy or endowments in Australia, universities are increasingly undertaking their own fund-raising, and tapping into new sources of non-government funding.

## Medical research institutes

Australia has about 40 independent medical research institutes in addition to its universities and hospitals. As well as tapping into philanthropic money, and being eligible for competitive grants, these institutes are supported directly by about AU\$650 million a year from the Australian Government towards infrastructure, and more from the state and territory governments.

## Business investment in research and development

While in the US, business has accounted consistently for about 70 per cent of total R&D expenditure, the role of private enterprise in research in Australia historically has been limited. That picture is now changing: the share of national R&D financed by business over the past 25 years has risen from 30 per cent to about 60 per cent in 2008-09. This has been supported by a range of government programs, including an R&D tax concession now worth around AU\$1.6 billion a year. The Australian Government is involved strongly with particular agricultural industries in 15 Rural R&D Corporations. These corporations are financed through industry levies matched dollar for dollar by the Australian Government.

## Cooperative Research Centres

Making a strong contribution in terms of practical research is the Cooperative Research Centres (CRCs) Program. The program supports end user driven research collaborations to address clearly articulated, major challenges facing Australia, many of which are global. CRC activities include research, utilization and commercialization, education and engagement with small and medium enterprises.

There are 42 active CRCs that operate across four broad industry categories: agriculture, forestry and fishing (11 CRCs), manufacturing (5), mining (4) and services (22). Since 1991, the Australian Government has committed more than AU\$3.4 billion in CRC Program funding. Participants in CRCs have committed a further AU\$11 billion in cash and in-kind contributions.

## Academies

Two national academies are associated with science and technology in Australia—the Australian Academy of Science, based in the nation's capital, Canberra, and the Academy of Technological Sciences and Engineering in Melbourne, Victoria. Both have been involved heavily in promoting collaboration with colleagues outside Australia through the Australian Government's International Science Linkages Program.

IMAGE CREDITS: OPAL RESEARCH REACTOR, ANSTO; CSIRO SOLAR TOWER, CSIRO; RV SOUTHERN SURVEYOR, CSIRO; AUSTRALIAN SYNCHROTRON.

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