



**Australian Government**  

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**Australian Research Council**

# SNAPSHOT

## Research Priorities in Australia

A document to support the Discussion Paper on the Australian Research Council's Implementation of the National Science and Research Priorities under the National Competitive Grants Program

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## Introduction

This snapshot supports the Australian Research Council's (ARC) Discussion Paper for the review of the Implementation of the National Science and Research Priorities under the ARC's National Competitive Grants Program. The snapshot summarises the Australian Government's approaches to prioritising research funding, including funding against the National Science and Research Priorities.

The fact sheet includes information on the scale of the Government's overall investment in science, research and innovation as well as information relevant to the areas of consideration identified in the Research Priorities Panel's terms of reference, specifically:

- Areas in which Australia exhibits research strength, or which present opportunities to establish Australia as a world leader in research as identified by the ARC's Excellence in Research for Australia (ERA) report
- Areas of strategic priority that have been identified by Australia's Learned Academies
- How the ARC's use of the priorities relates to government science, research and innovation strategies, for example, as outlined in the 2017 *National Science Statement* and Innovation and Science Australia's *Australia 2030: Prosperity Through Innovation*
- How the ARC's use of the priorities compares to other Commonwealth research funding programs.

## Australian Government investment in science, research and innovation

In 2018–19, the Australian Government is investing approximately \$9.6 billion in research and development (R&D), of which approximately eight per cent is allocated through the Australian Research Council.

Since 1979–80, the Department of Industry, Innovation and Science and its predecessors have published Budget tables reporting the Government's investment in and involvement with R&D, science and innovation. The data reports against sector of expenditure, socio-economic objective (SEO) and method of allocation, rather than against the National Science and Research Priorities.<sup>1</sup>

### Investment by socio-economic objective

SEOs describe the purpose, rather than the content of an R&D activity. R&D expenditure categorised by SEO has been reported in the SRI Budget Tables from 2003–04 onward (e.g. Table 1), but categories have varied over time.

The SEOs reported in the 2018–19 SRI Budget Tables (Table 1) are set out in the Organisation for Economic Cooperation and Development's (OECD) Frascati Manual 2015.<sup>2</sup> The 14 SEOs are:

1. Exploration and exploitation of the Earth
2. Environment
3. Exploration and exploitation of space

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<sup>1</sup> [www.industry.gov.au](http://www.industry.gov.au) > Data and publications > Science policy and engagement > [Science, Research and Innovation \(SRI\) Budget Tables](#) > [Science, Research and Innovation Budget Tables Snapshot 2017-18](#)

<sup>2</sup> [www.oecd-ilibrary.org](http://www.oecd-ilibrary.org) > Books > The Measurement of Scientific, Technological and Innovation Activities > [Frascati Manual 2015 Guidelines for Collecting and Reporting Data on Research and Experimental Development](#)  
See [Science, Research and Innovation Budget Tables Snapshot 2017-18](#) for details.

4. Transport, telecommunications and other infrastructures
5. Energy
6. Industrial production and technology
7. Health
8. Agriculture
9. Education
10. Culture, recreation, religion and mass media
11. Political and social systems, structures and processes
12. General advancement of knowledge: R&D financed from General University Funds
13. General advancement of knowledge: R&D financed from other sources
14. Defence.

**Table 1: Australian Government investment in R&D by SEO<sup>3</sup>**

<b>Australian Government investment in R&amp;D by SEO (\$m)</b>	<b>Budget Estimate</b>	
<b>Socio-Economic Objective (SEO)</b>	<b>2018-19</b>	<b>% of 2018-19 total</b>
01. Exploration and exploitation of the Earth	446.57	4.6%
02. Environment	299.61	3.1%
03. Exploration and exploitation of space	53.49	0.6%
04. Transport, telecommunications and other infrastructures	294.86	3.1%
05. Energy	564.06	5.9%
06. Industrial production and technology	1742.14	18.1%
07. Health	1468.40	15.2%
08. Agriculture	770.29	8.0%
09. Education	41.77	0.4%
10. Culture, recreation, religion and mass media	36.62	0.4%
11. Political and social systems, structures and processes	595.16	6.2%
12. General advancement of knowledge: R&D financed from General University Funds	2141.99	22.2%
13. General advancement of knowledge: R&D financed from other sources	687.78	7.1%
14. Defence	495.74	5.1%
<b>Total</b>	<b>9,638.5</b>	<b>100.0%</b>

In addition to overall Government investment in R&D by SEO from 2005–06 to 2018–19, the SRI Budget tables provide a breakdown of investment by SEO for select agencies and programs over the same period. These agencies and programs include:

- Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS)
- Australian Institute of Marine Science (AIMS)
- Australian Nuclear Science and Technology Organisation (ANSTO)
- Australian Research Council (ARC)
- Bureau of Meteorology
- CSIRO
- National Collaborative Research Infrastructure Strategy (NCRIS)
- Geoscience Australia
- Industry R&D Tax Measures
- All other programs.

<sup>3</sup> [www.industry.gov.au](http://www.industry.gov.au) > Data and publications > Science policy and engagement > [Science, Research and Innovation \(SRI\) Budget Tables](#) > [Science, Research and Innovation Budget Tables Snapshot 2017-18](#)

# Government science, research and innovation strategies

## National Science and Technology Council

Announced in November 2018 and chaired by the Prime Minister, the National Science and Technology Council replaced the Commonwealth Science Council as the peak advisory body to Ministers on science and technology.

The Council focuses on key science and technology challenges facing Australia, identifying Research Challenge projects and overseeing the Australian Council of Learned Academies' (ACOLA) Horizon-scanning activities, as well as providing expert advice on issues including health, emerging technologies and education.<sup>4</sup>

At its first meeting in February 2019, the Council noted the importance of science, technology, engineering and mathematics (STEM) skills, outcomes from recent Government investment in research infrastructure, and agreed to a forward work program, including addressing Artificial Intelligence (AI) and next-generation agricultural technologies as Research Challenges.

Priorities for ACOLA's Horizon scanning reports include AI, next generation agriculture and the internet of things (already underway), and potential work on data as a national asset, use of technology in aged care, and the conservation and environmental management of the oceans.<sup>5</sup>

## 2017 National Science Statement

Australia's National Science Statement<sup>6</sup> is designed to set a long-term approach to achieving a strong science system and provide guidance for government investment and decision making. It outlines an overall position on the importance of science for Australia's economy and quality of life, and reiterates the National Science and Research Priorities.

While the disciplines within its scope are 'natural, physical and life sciences, including medical and health sciences, mathematics, engineering and technology-related disciplines', the Statement also acknowledges that STEM forms part of the broader research ecosystem with humanities, arts and social sciences (HASS).

It refers to the need for interdisciplinary research to address challenges faced by society, and the need for HASS skills 'to understand how and why businesses grow or fail, how people make decisions, and how individuals, organisations and communities respond or adapt to change'.

## Australia 2030: Prosperity through Innovation

In *Australia 2030: Prosperity through Innovation*, Innovation and Science Australia (ISA) outlined its vision for Australia in 2030 and its plan for Australia's society and economy to benefit from innovation.<sup>7</sup> The plan made recommendations to achieve its vision under five strategic policy imperatives (education; industry; government; research and development; and culture and ambition).

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<sup>4</sup> [www.minister.industry.gov.au](http://www.minister.industry.gov.au) > Karen Andrews > Media Releases > [A stronger voice for science and technology](#)

<sup>5</sup> [www.chiefscientist.gov.au](http://www.chiefscientist.gov.au) > [National Science and Technology Council Communiqués](#)

<sup>6</sup> [www.industry.gov.au](http://www.industry.gov.au) > Data and publications > [Australia's National Science Statement](#)

<sup>7</sup> [www.industry.gov.au](http://www.industry.gov.au) > Data and publications > [Australia 2030: Prosperity through Innovation](#)

ISA identified one area of research priority—to position Australia as a leading nation in the research, development and exploitation of artificial intelligence and machine learning across the digital economy—and recommended that the Government’s planned Digital Economy Strategy should prioritise the development of advanced capability in these areas (recommendation 8).

## 2016 National Research Infrastructure Roadmap

The 2016 National Research Infrastructure Roadmap was developed by an Expert Working Group led by Australia’s Chief Scientist, Dr Alan Finkel AO.

The Expert Working Group identified research infrastructure focus areas which are priorities for the coming decade to support Australia’s researchers to continue to improve productivity, create jobs, lift economic growth and sustain a healthy environment.<sup>8</sup>

The nine focus areas are:

- Digital Data and eResearch Platforms
- Platforms for HASS (including Platforms for Indigenous Research)
- Characterisation
- Advanced Fabrication and Manufacturing
- Advanced Physics and Astronomy
- Earth and Environmental Systems
- Biosecurity
- Complex Biology
- Therapeutic Development.

## Areas of research strength or opportunity as identified by ERA

ERA is Australia’s national research evaluation framework, which is designed to identify and promote excellence across the full spectrum of research activity in Australia’s universities.

ERA’s objectives include providing a national stocktake of discipline level areas of research strength, emerging areas and areas where there are opportunities for development. ERA has been conducted four times (in 2010, 2012, 2015 and 2018) and reports are provided on the ARC website.<sup>9</sup>

The Government released the *State of Australian University Research 2018-19 ERA National Report* on 27 March 2019.<sup>10</sup> The report found Australian universities perform well above world standard in 11 broad disciplines including mathematics, physical sciences, chemical sciences, Earth sciences, environmental sciences, biological sciences, agricultural and veterinary sciences, engineering, technology, medical and health sciences, and psychology and cognitive sciences.

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<sup>8</sup> [www.education.gov.au](http://www.education.gov.au) > Strategic Framework > [2016 National Research Infrastructure Roadmap](#)

<sup>9</sup> [www.arc.gov.au](http://www.arc.gov.au) > ERA > [ERA Reports](#)

<sup>10</sup> [www.arc.gov.au](http://www.arc.gov.au) > News > Media > Media Releases > [University research goes from strength to strength](#)

# Areas of strategic priority identified by Australia's Learned Academies

## Australian Council of Learned Academies

ACOLA brings together Australia's four Learned Academies. It does not identify specific research priorities at a strategic level, but does emphasise interdisciplinary research in its overall focus.<sup>11</sup>

ACOLA produces a Horizon Scanning Series of reports that 'analyse the future, navigate change and highlight opportunities for the nation' to 'inform policy responses to significant scientific and technological change'.<sup>12</sup> Topics reflect priorities outlined by the National Science and Technology Council and elsewhere in the research landscape and include:

- Energy Storage (final report published 2017)
- Precision Medicine (final report published 2018)
- Synthetic Biology (final report published 2018)
- Artificial Intelligence (underway)
- The Internet of Things (underway)
- Next-generation Agricultural Technologies (underway).

Potential new topics in the Horizon Scanning Series include:

- Data as a National Asset
- Technology in Aged Care
- Conservation and Environmental Management of the Oceans.

## Australian Academy of the Humanities (AAH)

As outlined in its strategy<sup>13</sup>, the purpose of the AAH is to support excellence in the humanities and promote the contribution of the humanities to national prosperity and wellbeing. No specific research priorities within the humanities are identified by AAH at an overall strategic level.

In 2014, the *Mapping the Humanities, Arts & Social Sciences in Australia* report analysed ERA 2012, ARC grants, Higher Education Research Data Collection (HERDC) and other data to identify gaps and opportunities in HASS.<sup>14</sup> The report found:

- R&D investment in HASS is low—from business and at the university level
- while ERA performance suggested strength in HASS research fields, there was evidence of a slight decline in both outputs and capacity in Language, Communication and Culture
- a number of FoRs of national importance were either poorly represented outside metropolitan areas, were at a scale where their sustainability was an issue, or their outputs had been rated below world standard: Built Environment and Design; Demography; Film, Television and Digital Media; Applied Ethics; Languages; Historical Studies; and Sociology.<sup>15</sup>

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<sup>11</sup> [Acola.org.au](http://Acola.org.au) > [About ACOLA](#)

<sup>12</sup> [Acola.org.au](http://Acola.org.au) > About Us > [Horizon Scanning Series: An overview](#)

<sup>13</sup> [www.humanities.org.au](http://www.humanities.org.au) > About Us > [Australian Academy of the Humanites Strategy](#)

<sup>14</sup> [www.humanities.org.au](http://www.humanities.org.au) > Publications > [Mapping the Humanities, Arts & Social Sciences in Australia](#)

<sup>15</sup> Note: While these findings remain useful for discussion, they may not represent the current situation as the report was published before ERA 2015 and the development of the National Science and Research Priorities.

## Australian Academy of Science (AAS)

The AAS Strategic Plan outlines its mission to provide advice, promote engagement, build public awareness and support excellence in science.<sup>16</sup>

The AAS has 22 National Committees for Science representing its disciplines,<sup>17</sup> which are developing decadal plans—strategic plans to assess the current state of knowledge in their discipline and set priorities for the next decade.<sup>18</sup> The decadal plans focus within specific STEM disciplines and provide a range of recommendations for policymakers and funding bodies. Three decadal plans (for Chemistry, Agricultural Science and Earth Sciences) are being funded by the ARC under the Learned Academies Special Projects Scheme. While the decadal plans prioritise research activities within disciplines, the AAS has not identified relative priorities across the decadal plans.

## Academy of the Social Sciences in Australia (ASSA)

ASSA's mission is to recognise and promote excellence in the social sciences.<sup>19</sup> Its Constitution states that one of its objects is 'to comment where appropriate on national needs and priorities in the area of the social sciences'.<sup>20</sup>

In 2017, ASSA published *The Social Sciences Shape the Nation*.<sup>21</sup> This publication showcased the benefits and impacts of research in a variety of social science disciplines, but did not identify any specific areas of priority.

## Applied: Australian Academy of Technology and Engineering

The Academy<sup>22</sup> Strategy Plan<sup>23</sup> outlines its mission to advocate for policy choices that promote technology and engineering for economic, social and environmental benefits. It also identifies key challenges for Australia in 2030 (technology change, globalisation and demographics) and important global issues in which Australia must also play its role (climate change, automation and social cohesion).

The Strategy Plan identifies eight key strategies:

- Ensure Industry Technology Readiness
- Enhance Technology and Engineering Career Paths
- Improve STEM Education
- Achieve Greater Gender Equity and Diversity
- Connect Globally for the Benefit of Australia
- Celebrate Technology, Engineering and Innovation Excellence
- Amplify Impact
- Strengthen Engagement.

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<sup>16</sup> [www.science.org.au](http://www.science.org.au) > About Us > The Academy > [Strategic plan](#)

<sup>17</sup> [www.science.org.au](http://www.science.org.au) > Supporting Science > [National Committees for Science](#)

<sup>18</sup> [www.science.org.au](http://www.science.org.au) > Supporting Science > Science Policy and Analysis > [Decadal plans for science](#)

<sup>19</sup> [www.assa.edu.au](http://www.assa.edu.au) > About > Governance > [ASSA Strategic Statement](#)

<sup>20</sup> [www.assa.edu.au](http://www.assa.edu.au) > About > The Academy > [ASSA Constitution](#)

<sup>21</sup> [www.assa.edu.au](http://www.assa.edu.au) > Activities > Academy Papers > [The Social Sciences Shape the Nation](#)

<sup>22</sup> Until 2015, the Australian Academy of Technology and Engineering was known as the Australian Academy of Technological Sciences and Engineering (ATSE). In 2018, in keeping with its new business name, the Academy dropped the acronym ATSE in favour of "Applied" [www.applied.org.au](http://www.applied.org.au) > About us > [Our history](#)

<sup>23</sup> [www.applied.org.au](http://www.applied.org.au) > About us > [Our strategy](#)



The Academy also runs a series of Forums<sup>24</sup>, comprising Fellows with relevant expertise and professional interest, to develop position and action statements on areas of focus:

- Agriculture
- Digital Futures
- Education
- Energy
- Health
- Industry and Innovation
- Infrastructure
- Mineral Resources
- Water.

## Other major Commonwealth research funding programs

The Australian Government invests in research and development through numerous programs and research agencies. Most focus on particular policy imperatives or disciplines and consideration of the issues they cover can provide an indication of the range of research priorities already emphasised through major government funding mechanisms. However, a number of these priorities will be inappropriate for ARC purposes, particularly in the areas of medical and health research.

### National Health and Medical Research Council (NHMRC)

The NHMRC Act requires the CEO to identify major national health issues likely to arise during the four-year period covered by NHMRC's corporate plan.<sup>25</sup> In considering these issues, the CEO consults with the Council, principal committees and the Minister before determining the issues that are within NHMRC's scope.

The major issues identified for the period covered by the NHMRC's 2018-19 corporate plan are:

- Improving the health of Aboriginal and Torres Strait Islander peoples including through research that builds capacity in Aboriginal and Torres Strait Islander researchers and addresses health disparities.
- Resilience to environmental change, emerging health threats and emergencies.
- Issues related to the end of life and the delivery of palliative and supportive care.
- Integrated and coordinated approaches to chronic conditions.
- Harnessing the power of data and analytical technologies.
- Improving research quality to maximise the rigour, transparency and reproducibility of NHMRC-funded research.

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<sup>24</sup> [www.applied.org.au](http://www.applied.org.au) > About us > [Policy Forums](#)

<sup>25</sup> [www.nhmrc.gov.au](http://www.nhmrc.gov.au) > About Us > Publications and Resources > [NHMRC Corporate Plan 2018–2019](#)

## Australian Medical Research and Innovation Priorities 2018–2020

Established in accordance with the Government’s Medical Research Future Fund (MRFF), the priorities are intended to inform MRFF funding to be complementary to, and not duplicate NHMRC funding.<sup>26</sup> The current priorities, many of which include a focus on multidisciplinary research are:

- One Health—Antimicrobial Resistance
- Global Health and Health Security
- Aboriginal and Torres Strait Islander Health
- Ageing and Aged Care
- Digital Health Intelligence
- Comparative Effectiveness Research
- Primary Care Research
- Clinical Researcher Capacity
- Consumer-Driven Research
- Drug Repurposing
- Public Health Interventions
- Translational Research Infrastructure.

## Cooperative Research Centres (CRC) and Industry Growth Centres

Administered by the Department of Industry, Innovation and Science, these programs are designed to complement each other in supporting industry focused research collaboration to improve commercialisation and other research outcomes for industry.<sup>27</sup>

There are currently 30 CRCs.<sup>28</sup> The CRC Program does not specify any particular research priorities, but in the 2018–19 Budget the Australian Government committed \$25 million in additional funding for CRC Projects (a component of the program that focuses on short term industry-led collaborative research) with a specific focus on artificial intelligence.

Administered by the Department of Industry, Innovation, and Science, Industry Growth Centres have been established in six industry sectors of competitive strength and strategic priority<sup>29</sup>:

- Advanced Manufacturing
- Cyber Security
- Food and Agribusiness
- Medical Technologies and Pharmaceuticals
- Mining Equipment, Technology and Services
- Oil, Gas and Energy Resources.

Industry Growth Centres strategic priorities form the basis of the ARC’s Industrial Transformation Priorities.

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<sup>26</sup> [www.researchaustralia.org](http://www.researchaustralia.org) > Health & Medical Research > MRFF Strategy and Priorities > [Australian Medical Research and Innovation Priorities 2018–2020](#)

<sup>27</sup> [www.business.gov.au](http://www.business.gov.au) > Grants, assistance & other support > [Cooperative Research Centres \(CRC\) Program](#)

<sup>28</sup> [www.business.gov.au](http://www.business.gov.au) > Grants, assistance & other support > Cooperative Research Centres (CRC) Program > Cooperative Research Centres (CRC) Grants > [Current CRCs](#)

<sup>29</sup> [www.business.gov.au](http://www.business.gov.au) > About > [Industry Growth Centres Initiative](#)

## Australian Government science and research agencies

Research priorities and focus areas for major Government science and research agencies are outlined in the table below.

**Table 2: Science and research agencies—research priorities and focus areas**

Agency	Priorities and focus areas
<b>Australian Antarctic Division</b>	Science: <sup>30</sup> <ul style="list-style-type: none"> <li>• Climate research               <ul style="list-style-type: none"> <li>○ ice sheets and sea level rise</li> <li>○ sea ice and oceans</li> <li>○ atmosphere</li> <li>○ past climate</li> <li>○ southern ocean ecosystems</li> </ul> </li> <li>• Conservation and management               <ul style="list-style-type: none"> <li>○ Biodiversity conservation</li> <li>○ Wildlife management</li> <li>○ Fisheries</li> </ul> </li> <li>• Human impacts and remediation (in Antarctica)</li> <li>• Frontier science               <ul style="list-style-type: none"> <li>○ Astronomy</li> <li>○ Geosciences</li> <li>○ Human biology and medicine</li> <li>○ Space weather</li> <li>○ Fundamental biology and physiology.</li> </ul> </li> </ul>
<b>Australian Centre for International Agricultural Research (ACIAR)</b>	ACIAR's research programs in the following areas help developing countries use science and technology to solve local problems: <sup>31</sup> <ul style="list-style-type: none"> <li>• Agribusiness</li> <li>• Crops</li> <li>• Fisheries</li> <li>• Forestry</li> <li>• Horticulture</li> <li>• Impact Evaluation</li> <li>• Livestock Systems</li> <li>• Social Sciences</li> <li>• Soil and Land Management</li> <li>• Water and Climate.</li> </ul>
<b>Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS)</b>	AIATSIS supports Aboriginal and Torres Strait Islander researchers and engages Indigenous Australians in the research process. <sup>32</sup> It specialises in: <ul style="list-style-type: none"> <li>• Languages and cultural expression</li> <li>• Native title and traditional ownership</li> <li>• Education and cultural transmission</li> <li>• Governance development and public policy</li> <li>• Health and wellbeing</li> <li>• Land and water.</li> </ul>

<sup>30</sup> [www.antarctica.gov.au](http://www.antarctica.gov.au) > [Science](#)

<sup>31</sup> [www.aciar.gov.au](http://www.aciar.gov.au) > Our Research > [Our Research Programs](#)

<sup>32</sup> [www.aiatsis.gov.au](http://www.aiatsis.gov.au) > [Research](#)

Agency	Priorities and focus areas
<b>Australian Institute of Criminology</b>	<p>Australia's national research and knowledge centre on crime and justice, the Australian Institute of Criminology seeks to promote justice and reduce crime through evidence-based research to inform policy and practice.<sup>33</sup> Its research priorities are set annually. Its 2018-19 research priorities are:</p> <ul style="list-style-type: none"> <li>• Illicit drugs</li> <li>• Child exploitation material</li> <li>• Economics of transnational serious and organised crime</li> <li>• Criminal justice responses to family and domestic violence</li> <li>• Indigenous over representation in the criminal justice system</li> <li>• Youth crime and new migrant communities.</li> </ul>
<b>Australian Institute of Marine Science (AIMS)</b>	<p>Research Programs:<sup>34</sup></p> <ul style="list-style-type: none"> <li>• A healthy and resilient Great Barrier Reef</li> <li>• Sustainable coastal ecosystems and industries in tropical Australia</li> <li>• Sustainable use of north-west marine ecosystems</li> <li>• Data and technology innovation.</li> </ul> <p>In The National Marine Science Plan, AIMS also outlines the following challenges facing Australia and provides recommendations for science to address them:<sup>35</sup></p> <ul style="list-style-type: none"> <li>• Maritime Sovereignty, Safety and Security</li> <li>• Energy Security</li> <li>• Food Security</li> <li>• Climate Change</li> <li>• Biodiversity Conservation</li> <li>• Urban Coastal Environments</li> <li>• Allocation of Resources.</li> </ul>
<b>Australian Nuclear Science and Technology Organisation (ANSTO)</b>	<p>ANSTO's Corporate Plan outlines the following research themes:<sup>36</sup></p> <ul style="list-style-type: none"> <li>• The Nuclear Fuel Cycle <ul style="list-style-type: none"> <li>○ Fuel Resources and Systems</li> <li>○ Reactor Systems</li> <li>○ Spent Fuel Management</li> </ul> </li> <li>• Environment <ul style="list-style-type: none"> <li>○ Water Resources Sustainability</li> <li>○ Environmental Change</li> <li>○ Contaminant Impacts</li> </ul> </li> <li>• Human Health <ul style="list-style-type: none"> <li>○ Interaction of radiation with living matter</li> <li>○ Nuclear technologies for health</li> <li>○ Food and Nutrition.</li> </ul> </li> </ul>
<b>Australian Radiation Protection and Nuclear Safety</b>	<p>ARPANSA is the Government's primary authority on radiation protection and nuclear safety. ARPANSA's purpose is to protect the Australian people and the environment from the harmful effects of radiation, through understanding</p>

<sup>33</sup> [www.aic.gov.au](http://www.aic.gov.au) > [Research](#)

<sup>34</sup> [www.aims.gov.au](http://www.aims.gov.au) > Research > [Research Programs](#)

<sup>35</sup> [www.marinescience.net.au](http://www.marinescience.net.au) > [The Plan](#)

<sup>36</sup> [www.ansto.gov.au](http://www.ansto.gov.au) > Corporate Publications > Archives > Corporate plan archive > [Corporate Plan of ANSTO for 2017-2018](#)

Agency	Priorities and focus areas
<b>Authority (ARPASNA)</b>	<p>risks, best practice regulation, research, policy, services, partnerships and engaging with the community.<sup>37</sup></p> <p>ARPANSA's 2018-2022 Corporate Plan outlines six key strategic objectives:<sup>38</sup></p> <ul style="list-style-type: none"> <li>• Protect the public, workers and the environment from the harmful effects of radiation</li> <li>• Promote radiological and nuclear safety and security and emergency preparedness</li> <li>• Promote the safe and effective use of ionising radiation in medicine</li> <li>• Ensure risk informed and effective regulation</li> <li>• Enhance engagement with community, industry and government</li> <li>• Enhance organisational innovation, capability and resilience.</li> </ul>
<b>Australian Renewable Energy Agency (ARENA)</b>	<p>ARENA's <i>General Funding Strategy 2018–19 to 2020–21</i> states: For the period of this GFS, ARENA will place a high priority on delivering secure and reliable electricity, accelerating solar PV innovation, improving energy productivity and exporting renewable energy.<sup>39</sup></p>
<b>Bureau of Meteorology</b>	<p>The Bureau of Meteorology has a wide range of research programs supporting its environmental forecasts, warnings and services.<sup>40</sup> These programs include:</p> <ul style="list-style-type: none"> <li>• Earth system modelling</li> <li>• Climate change and variability</li> <li>• Weather and environmental prediction</li> <li>• Space weather</li> <li>• Water research.</li> </ul> <p>Its <i>Research and Development Strategy 2015-2020</i><sup>41</sup> identifies five R&amp;D themes:</p> <ul style="list-style-type: none"> <li>• Scientific computing</li> <li>• Earth observing systems</li> <li>• Fundamental processes</li> <li>• Modelling and assimilation</li> <li>• Services from science.</li> </ul>
<b>Commonwealth Scientific and Industrial Research Organisation (CSIRO)</b>	<p><i>Australia's Innovation Catalyst: CSIRO Strategy 2020</i> identifies global megatrends that guide CSIRO's work, and its focus areas, as outlined below.<sup>42</sup></p> <p>Global megatrends facing Australia's future:</p> <ul style="list-style-type: none"> <li>• More from less—Innovation in meeting human needs by more efficient use of mineral, water, energy and food resources in light of escalating demand and constrained supply.</li> <li>• Planetary pushback—Changes in Earth systems from the global to microbial are creating challenges for humanity including climate change and antibiotic resistance.</li> <li>• The silk highway—Rapid growth of emerging economies, urbanisation, geopolitical change and the transition from industrialisation into technologically advanced service sectors.</li> </ul>

<sup>37</sup> [www.health.gov.au](http://www.health.gov.au) > About us > Budget > 2018-2019 > [Australian Radiation Protection and Nuclear Safety Agency](#)

<sup>38</sup> [www.arpansa.gov.au](http://www.arpansa.gov.au) > About us > Corporate publications > Corporate plan > [Corporate Plan 2018-2022](#)

<sup>39</sup> [www.arena.gov.au](http://www.arena.gov.au) > [Arena General Funding Strategy 2018/19 – 2020/21](#)

<sup>40</sup> [www.bom.gov.au](http://www.bom.gov.au) > [Research](#)

<sup>41</sup> [www.bom.gov.au](http://www.bom.gov.au) > Research > Research and Development > [R&D strategy 2015–2020](#)

<sup>42</sup> [www.csiro.au](http://www.csiro.au) > About Us > Strategy and Structure > [CSIRO Strategy 2020 - Australia's innovation catalyst](#)

Agency	Priorities and focus areas
	<ul style="list-style-type: none"> <li>• Forever young—The rise of the ageing population, retirement savings gap, lifespans, healthcare expenditure, diet and lifestyle-related illness and mental health awareness.</li> <li>• Digital immersion—The exponential growth in computing power, device connectivity, data volumes, internet users, artificial intelligence and technological capabilities.</li> <li>• Porous boundaries—Changes in organisational models, governance systems and employer-employee relations in a more agile, networked and flexible economy which breaks through traditional boundaries.</li> <li>• Great expectations—The rise of the all-important experience factor as society and consumers have rising expectations for personalised and positive experiences involving social interaction, morals and ethics, and the physical world.</li> </ul> <p>Business units and focus areas:</p> <ul style="list-style-type: none"> <li>• Agriculture and food</li> <li>• Energy</li> <li>• Manufacturing</li> <li>• Mineral Resources</li> <li>• Land and Water</li> <li>• Oceans and Atmosphere</li> <li>• Health and Biosecurity.</li> </ul> <p>CSIRO has also established Future Science Platforms in the following areas:<sup>43</sup></p> <ul style="list-style-type: none"> <li>• Active Integrated Matter</li> <li>• Deep Earth Imaging</li> <li>• Digiscape</li> <li>• Environomics</li> <li>• Precision Health</li> <li>• Probing Biosystems</li> <li>• Synthetic Biology.</li> </ul>
<b>Defence Science and Technology (DST) Group</b>	<p>Research areas:<sup>44</sup></p> <ul style="list-style-type: none"> <li>• Air, land and sea vehicles</li> <li>• Autonomous systems</li> <li>• Chemical, biological, radiological &amp; nuclear (CBRN)</li> <li>• Cyber</li> <li>• Electronic warfare</li> <li>• Human science</li> <li>• Information and communications</li> <li>• Operations analysis</li> <li>• Propulsion and energy</li> <li>• Surveillance and space</li> <li>• Weapons systems.</li> </ul>
<b>Geoscience Australia</b>	<p>Scientific topics:<sup>45</sup></p> <ul style="list-style-type: none"> <li>• Astronomical Information</li> <li>• Disciplines and Techniques</li> </ul>

<sup>43</sup> [www.csiro.au](http://www.csiro.au) > About Us > [Future Science Platforms](#)

<sup>44</sup> [www.dst.defence.gov.au](http://www.dst.defence.gov.au) > [Our Science](#)

<sup>45</sup> [www.ga.gov.au](http://www.ga.gov.au) > [Science Topics](#)

Agency	Priorities and focus areas
	<ul style="list-style-type: none"> <li>• Earth Observation from Space</li> <li>• Energy</li> <li>• National Location Information</li> <li>• Hazards</li> <li>• Marine and Coastal</li> <li>• Minerals</li> <li>• Positioning and Navigation</li> <li>• Water.</li> </ul>