



Australian Government
Department of Industry

Innovation Policy Report

September 2014

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Developments in strategy and policy

Australia: Support for R&D and commercialisation to promote national competitiveness and productivity

In his [address to the Queensland Media Club](#) in Brisbane on 6 August 2014, Minister for Industry the Hon. Ian Macfarlane spoke about the National Industry Investment and Competitiveness Agenda providing a framework to support innovation and investment.

The National Industry Investment and Competitiveness Agenda Taskforce is considering the full range of issues that impact on the global competitiveness of Australian businesses and Australian industry, as well as key issues that will shape the future of Australian industry, with a focus on the transition from a traditional manufacturing base to developing new markets, new jobs and new opportunities in high value-added manufacturing.

The Taskforce will focus on potential measures to promote national competitiveness and productivity, which will include measures to boost the competitiveness of Australian manufacturing and lower the costs of doing business, options to encourage innovation, support for research and development and commercialising good ideas and economy-wide incentive mechanisms to boost investment in Australia.

The challenge now is for Australia to make further gains by building on our areas of competitive strength. Building on our nation's successes and providing the right framework to encourage the next wave of entrepreneurship and investment in the industries of the future are at the heart of the Government's industry policy.

"The challenge now is for Australia to make further gains by building on our areas of competitive strength," Minister Macfarlane said.

"Building on our nation's successes and providing the right framework to encourage the next wave of entrepreneurship and investment in the industries of the future are at the heart of the Government's industry policy."

The government will continue to strengthen the productivity and international competitiveness of Australian industry by developing an industry growth strategy to increase investment, jobs and exports and by assisting Australian firms and researchers to accelerate the commercialisation of their intellectual property.

There is a body of evidence that show that while Australia is creative and innovative, it is not so great at commercialisation. The task is to develop a

cohesive plan that draws together industry with science and research, and skills and training.

There is intention to develop new ways to use the research and science side of the portfolio to identify new products and to put more emphasis on commercialisation, to encourage more activity that will get good ideas to market in a way that creates jobs and business growth. The focus will be on applying the knowledge from science and research to achieve practical outcomes that deliver commercial advantages.

Australia: Entrepreneurs' Infrastructure Programme: Research Connections

Scheduled to start in September 2014, the Research Connections stream will be the latest offering from the [Entrepreneurs' Infrastructure Programme](#) (Programme), providing easy-to-access practical support to Australian businesses in a simplified and streamlined way.

Research Connections is focused on helping small and medium enterprises (SMEs) to collaborate with the research sector to develop new ideas with commercial potential.

It operates as a facilitation service, with specialist facilitators assessing business' knowledge gaps and providing specialist support. The service includes identifying critical and strategic research needs and opportunities for the business; supporting the business to connect with sources of expertise, technology and advice; and providing pathways to engage and collaborate with the research sectors, which may include a matched funding grant that provides direct access to research capability.

As part of the Programme, Research Connections is being delivered through the new Single Business Service initiative.

Applications are also open for the Business Evaluation and Business Growth Grant services. Additional services under the Programme will be progressively rolled out, with the Commercialising Ideas element to be available from 1 November 2014.

Further information can be found on the Entrepreneurs' Infrastructure Programme website: <http://www.business.gov.au/advice-and-support/EIP/Pages/default.aspx>

Australia: Excellence in Research for Australia

Through *Excellence in Research for Australia (ERA)*, the Australian Research Council (ARC) evaluates research quality within Australia's higher education institutions and gives government, industry, business and the wider community assurance of the excellence of research conducted. It also

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provides a national stocktake, by research discipline areas, of research strength against international benchmarks. ARC administration of ERA is acknowledged internationally as being best practice.

An ERA evaluation will occur in 2015 and the ARC initiated a broad programme of consultation in preparation. Two major public consultations have now concluded.

As part of the ARC's preparation for ERA 2015, it developed the draft ERA 2015 Submission documentation, which included an outline of key proposed changes for ERA 2015, such as an *Open Access* requirement, whereby institutions are required to state whether a research output is available in an open access repository, and a *New Category of Non-Traditional Research Outputs*, entitled Research Report for an External Body which consists of four subcategories of reports: Public Sector; Industry; Not-For-Profit; and Other.

A list of finalised substantive changes for the ERA 2015 round are listed here: <http://www.arc.gov.au/word/ERA15/ERA%202015%20Submission%20Guidelines.docx> (pp.7-9).

The ARC also conducted public consultation for the Draft ERA 2015 Journal List and the Draft ERA 2015 Conference List from 3 February 2014 to 21 March 2014. These lists define outlets that are scholarly, peer reviewed, publish original research and which are eligible for ERA 2015 submissions. The journal and conference lists form an integral part of the ERA evaluation process. The lists provide components that will be used in the ERA 2015 methodology, including:

- defining the eligible Fields of Research (or FoR) codes that research outputs may be assigned to during the submission phase; and
- defining the outlets from which the journal citation benchmarks are derived in a number of citation-based disciplines.

These lists have been finalised and provided to universities to assist in preparation of their ERA 2015 submissions along with with final submission requirements.

In addition, the ERA approach has attracted considerable international attention. The ARC is increasingly a source of advice for developments in other national systems.

Australia: Smart Grid, Smart City Demonstration Project 2010-2014

In 2009 the Australian Government allocated funding in the order of \$100million for the [Smart Grid, Smart City \(SGSC\) Demonstration Project](#).

The project has provided timely support for, and input into, key policy directions, and provided key insights into the challenges for broader adoption of smart grid technologies and how they may be addressed in existing reform work.

Whilst the project has provided information and outcomes to stakeholders in the electricity market which will assist in reassessing current business models and operational practices, it has also provided important information and outcomes that governments can utilise to make more informed decisions regarding how policy and regulatory structures are designed to continue to deliver efficient market outcomes and protect the long term interests of consumers.

The information and data gathered from SGSC will assist with the current policy reform agenda including: introduction of a competitive structure for advanced metering and related services, introduction of cost reflective network pricing, improved incentives to support smart grid technologies within electricity networks, consideration of demand management options as an alternative to network investment, and clarifying consumers' ability to access their own energy use data or empower third party service providers to access data on their behalf.

Through the provision of more transparent, accessible and usable data sets, the project's data will provide more information on how alternative tariffs can be designed to assist consumers to understand and respond to price signals using smart technologies and innovative products.

The project outcomes have identified the need for future incentives for network businesses to make sure that the electricity services they provide represent best value for money over the long term. This may include investing in generation for homes, businesses or an area of the network, or securing guaranteed electricity demand reduction for periods of supply shortfall as additional or alternative mechanisms to investment in poles and wires for delivering electricity to where it is used.

The analysis of the project has demonstrated the benefits of a voluntary, consumer-led approach to adoption of smart metering infrastructure and the benefits of providing consumers with greater access to their data through technologies such as in-home displays, iphone apps and portals.

Critically, it has provided a massive wealth of data and technical studies for stakeholders across the energy market to evaluate their own business cases and make more informed decisions on the broader adoption of smart grids technologies and applications.

Australia: New smartphone app helps save money on power

bills

The Appliance Energy Efficiency Branch within the Department of Industry released a free Energy Rating app designed to help households and businesses save money on their power bills by choosing energy efficient appliances.

Minister for Industry, the Hon Ian Macfarlane MP, said the smartphone app is the first of its kind to display power use over the life of an appliance in dollars, rather than kilowatt hours.

“This app shows people what the energy rating means financially, and by adding the estimated total power cost to the purchase price, people can see what they are saving,” Minister Macfarlane said.

“Australian households and businesses can now more easily choose energy efficient appliances that save money on their power bills.”

The app uses the data from the trusted and widely recognised Energy Rating Label, a joint industry and government programme that has helped people buy energy efficient appliances for over a quarter of a century.

Also developed have been two videos available through the department’s YouTube channel ([Open Data Experience](#) by Deputy Secretary Martin Hoffman and [Energy Rating App – User Journey](#)).

To download the free Apple, Android and BlackBerry versions of the Energy Rating App or use the web version for other smartphones, visit www.energyrating.gov.au/.

Australia: Tasmania

On 1 July 2014, the new Department of State Growth was established with a mandate of creating jobs, growth and opportunities for Tasmanians. The Department will engage in the national innovation agenda and will pursue opportunities to develop and promote innovation in Tasmania.

Through the *Growing our Information and Communication Technology Industry* policy, the Tasmanian Government has committed to investing in key initiatives to drive the digital economy in Tasmania including developing a Data Centre Action Strategy, an ICT Workforce Development Plan and supporting industry engagement. New initiatives under the policy include developing an Employee and Home Business Remote Working Hub Action Strategy, a Go-to-Market Incubator, and the provision of free public Wi-Fi at hotspots around the State.

The Tasmanian Government has also announced the AgriVision 2050 policy for assisting agriculture to achieve an annual contribution to the Tasmanian economy of \$10 billion. This policy is supported by an investment in a variety

of strategies that support applied research, development and extension activities.

Canada: Funding to support industry-research collaboration on aerospace innovation

On 8 August 2014, the Canadian government [committed C\\$30-million](#) over five years to support a newly-formed, industry-led network dedicated to aerospace innovation. The network, the Consortium for Aerospace Research and Innovation in Canada (CARIC), was launched in April 2014.

CARIC will promote collaboration in aerospace research and innovation by boosting linkages among researchers in industry, academia and research institutes in Canada and abroad and by partially funding earlier stage collaborative research and technology development (R&TD) projects in the aerospace industry at the low-to-mid technology readiness levels.

The C\$30-million contribution will be used to fund collaborative R&TD projects and support CARIC's operations and networking activity functions across Canada.

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Iceland: Policy and action plan for the Science and Technology

Iceland's Science and Technology Council approved a new [action plan](#) in May 2014, which aims to support and enhance the competitiveness of the economy and lead to a more transparent utilisation of public funds. The plan includes 21 actions to enhance innovation and have a lasting long-term effect on growth and living standards in Iceland. The responsibility for the actions lies with ministries and agencies and every action is analysed from a cost and time standpoint.

The plan is to increase public funding of competitive funds by €17.5 million - €5 million in 2015 and up to €12.5 million in 2016. Part of the plan is to create an environment where businesses see the benefits of increasing their R&D budgets by €31.3 million, which will mainly be done through tax incentives.

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UK: Technology Strategy Board releases its 2014-2015 Delivery Plan

The United Kingdom (UK) Technology Strategy Board (TSB) has released its 2014-2015 Delivery Plan, which sets out priorities for accelerating innovation across the UK, and lays out how the TSB will support innovative business, with a budget for the year of over £400m.

As part of the Delivery Plan, the Technology Strategy Board will:

- continue their support for small and medium-sized enterprises (SMEs) through [Smart](#), [SBRI](#) and other programmes, and will launch a new, UK-wide SME growth programme providing a package of skills, mentoring and coaching support to help innovative micro and small companies to grow their businesses and attract potential investors;
- provide a new online platform, developed with partners, to help showcase innovative companies to potential investors;
- run five new [Launchpad](#) funding competitions, providing support to SMEs in geographical clusters;
- facilitate specialist advisors' help for business to take advantage of the EU's €79bn [Horizon 2020](#) innovation and research programme;
- lead a consortium bid to deliver the Enterprise Europe Network in England, Wales and Northern Ireland, and open a permanent office in Brussels to champion British innovation abroad;
- increase the total number of Catapult centres to nine, as two new [Catapult centres](#) will be created to accelerate innovation in energy and precision medicine;
- establish the [Energy Catalyst](#) - a funding programme to support early-stage innovations through to commercial viability, following the successful model of [Catalysts](#) for the [biomedical](#), [agri-tech](#) and [industrial biotechnology](#) sectors.

The support is closely aligned with the government's industrial sector strategies and with its focus on the 'eight great technologies' - satellites, energy storage, agri-science, synthetic biology, advanced materials, big data, robotics and autonomous systems, and regenerative medicine.

See the infographics outlining plans for each of the [priority areas](#).

Read the [Delivery Plan 2014-15](#) in full.

US: America COMPETES Reauthorization Bill introduced

The *America COMPETES Reauthorization Act of 2014* [was introduced](#) in the US Senate on 31 July 2014.

The Bill builds on the goals and successes of the America COMPETES Act of 2007 and its [reauthorization in 2010](#). The America COMPETES Reauthorization Act of 2014 will authorize stable and sustained increases in federal research and development (R&D) funding for the [National Science Foundation](#) and the [National Institute of Standards and Technology](#). The bill would also promote the economic benefits of promising R&D and address

agency efforts, including at NASA and the National Oceanic and Atmospheric Administration; increase participation in STEM fields, including among women and minorities; and support the innovation necessary for economic growth.

US: Digital Data Access to Research Results

In August 2014, the US Department of Energy (DOE) [launched](#) a web-based portal that will provide free public access to accepted peer-reviewed manuscripts or published scientific journal articles within 12 months of publication. This portal is one of measures of the [DOE Public Access Plan](#), aimed at boosting access to scholarly publications and digital data resulting from DOE-funded research.

The new portal - PAGES (Public Access Gateway for Energy and Science) - contains an initial collection of accepted manuscripts and journal articles. More metadata and links to articles and accepted manuscripts will be added as they are submitted, with anticipated growth of 20,000 to 30,000 articles and manuscripts per year.

New requirements regarding management of digital research data by DOE Office of Science supported researchers have also been issued. All proposals for research funding submitted to [the Office of Science](#) will now be required to include a Data Management Plan that describes whether and how the digital research data generated in the course of the proposed research will be shared and preserved.

Developments in funding initiatives

Australian Research Council

The Australian Research Council has announced the following funding programmes since June 2014:

- **Future Fellowships** – The Minister for Education, the Hon. Christopher Pyne MP, announced \$115 million for 150 new Future Fellows.
- **Special Research Initiative for Type 1 Juvenile Diabetes** – The Juvenile Diabetes Research Foundation (JDRF) was awarded \$35million under the Special Research Initiative for Type 1 Juvenile Diabetes to support a network and research programs in Type 1 Juvenile Diabetes.
- **Learned Academies Special Projects** – Two Learned Academies were awarded ARC funding under the Learned Academies Special Projects scheme (total of \$834,160). The Learned Academies Special Projects is a scheme that supports the development of Australian research. Learned Academies Special Projects has provided the Learned Academies and the Australian Council of Learned Academies with the funding and flexibility to achieve that objective.
- **Special Research Initiative for Tropical Health and Medicine** – \$42million over four years was awarded under the Special Research Initiative for Tropical Health and Medicine for the Institute of Tropical Health and Medicine at James Cook University. The Initiative represents the Government's electoral commitment for "Boosting Front Line Healthcare and Research". Its core function will include building Australian research capacity in tropical health and biomedical sciences.
- **Linkage Projects** – 251 proposals were awarded funding under the ARC Linkage Projects scheme with a total approved funding, over the life of these projects, of \$88.2 million. There are 415 Partner Organisations involved with these projects and they have pledged a total (cash and in-kind) of \$169.8 million. The Linkage Projects scheme funds collaborative projects between University researchers and Partner Organisations.
- **Industrial Transformation Research Hubs** – Seven proposals were awarded funding under the Industrial Transformation Research Hubs 2013 Round 2 with a total approved funding, over the life of these projects, of \$23,985,451 million. There are 26 Partner Organisations involved with these projects. They have committed a total of \$36,426,833 in cash and in-kind funding. The Industrial Transformation

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Research Hubs is a scheme that will engage Australia's best researchers in issues facing the new industrial economies and training the future workforce. This scheme will support collaborative research activity between the Australian higher education sector and industry designed to focus on strategic outcomes not independently realisable.

Australia: Tasmania - Irrigation Research, Development and Extension Program

[The Tasmanian Institute of Agriculture](#) (TIA) was established in 1997 and operates as a Joint Venture between the State Government and the University of Tasmania (or UTAS).

[An Irrigation \(Research, Development & Extension, or RD&E\) Program](#), designed to help realise the economic benefits of the \$500 million public/private investment in irrigation infrastructure, is under development by TIA. Findings of the consultation phase will be reported in late August 2014.

A Development, Extension and Education Implementation Strategy has been developed by TIA to ensure information developed by researchers reaches end-users.

Australia: Tasmania - Free Wi-Fi services

Under the [Growing our Information and Communication Technology Industry](#) Policy (on page 7), the Tasmanian Government has committed to providing up to \$500 000 towards capital infrastructure and setup costs for free Wi-Fi services targeted at tourists in towns and cities across Tasmania.

The Government is looking to establish a partnership model with local organisations for ongoing service delivery. The Department of State Growth is seeking public comment on the delivery model. The website address is here:

<http://www.business.tas.gov.au/featured/public-comment-sought-on-free-public-wi-fi-plan> And an accompanying blog post here:

<http://blog.business.tas.gov.au/tasmanian-free-public-wi-fi/>

Australia: Tasmania - Digital Ready for Retail program

The [Digital Ready for Retail](#) program enhances business participation in the digital economy by providing targeted knowledge, skills and advice. The program includes a number of strategies to uplift the digital capability, skills, literacy and confidence of retailers and other small business operators.

As part of [Getting Behind and Backing Small Business](#) initiative, the Government has committed \$800 000 over four years to enhance the Digital Ready for Retail program and to develop a strategic 'Retail ready for business' policy to aggressively target Tasmanian retail businesses that want to understand and find out more about how to operate online.

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The program was launched in Launceston on 2 July 2014. Since that time, 45 small businesses have attended a “Retail in the Cloud” seminar and an additional 45 small businesses have taken part in the Digital Ready for Retail coaching program (to be completed mid-September 2014).

Australia: Tasmania - Go-to-Market Incubator

Under the *Growing our Information and Communication Technology Industry* Policy, the Tasmanian Government has committed \$500,000 over two years towards [encouraging commercialisation through a Go-to-Market Incubator](#).

The Go-to-Market Incubator will provide mentoring, education and training support to assist potential startups to move from ideas to market. The Department of State Growth will seek public comment on the delivery model for the incubator in the coming months.

UK-China Research and Innovation Partnership Fund

On 17 June 2013, China and the United Kingdom (UK) agreed to over [£50 million of joint innovative research programmes](#) focussing on global issues such as climate change and human diseases. The UK Universities and Science Minister joined the Chinese Ambassador to the UK at the UK-China Summit to sign the agreement for the first programmes of the joint UK-China Research and Innovation Partnership Fund. Programmes funded include:

- £23 million scientific research programme, led in the UK to help build the basis for services to protect against extreme weather and prepare for a changing climate in Asia;
- £16 million of joint research partnerships, led in the UK to support advances in marine energy, regenerative medicine and stem cells, atmospheric pollution and human health, and sustaining the soil ecosystem; and
- £14 million of Newton Fellowships to provide the opportunity for Chinese and UK researchers to develop meaningful collaborations.

US: Small Business Administration Accelerator Competition Gets Over 800 Submissions

By the 2 August 2014 deadline, over 800 applications have been received by the US [Small Business Administration](#) (SBA) from accelerators and incubators in a bid to win one of 50 cash prizes of \$50,000 each in its first [Growth Accelerator Fund](#) competition.

SBA’s funding aims to encourage organizations that will boost entrepreneurial ecosystems nationwide, while filling gaps in much-needed capital for these small businesses. Applicants in low socio-economic areas, women-owned

startups, companies in the manufacturing sector and businesses headed by members of underrepresented groups will get special consideration.

Accelerators and entrepreneurial ecosystem models representing industries that include technology, health services, agriculture, fashion and food production from 49 states, DC and Puerto Rico make up the applicant pool for the competition launched May 12 by SBA.

Growth accelerators included incubators, co-working startup communities, shared thinker-spaces and other business models to achieve similar results.

US: National Science Foundation grants to promote Science and Engineering Research regional partnerships

On 6 August 2014, the US National Science Foundation (NSF) [announced](#) funding for three science and engineering research consortia that will forge regional partnerships in Nebraska-Kansas, Arkansas-Missouri, and Louisiana-Mississippi. Each consortium will receive Research Infrastructure Improvement (RII) Track-2 awards of up to \$6M through NSF's [Experimental Program to Stimulate Competitive Research \(EPSCoR\)](#).

Collectively, these awards, which span six states, involve researchers from about 20 universities over a three-year period. The three RII Track-2 consortia are tackling nationally-important scientific challenges that range from molecular level investigations of individual electrons to advanced development of materials, genomics, and biotechnology. Each consortium will implement a unique suite of regionally-relevant activities for developing a scientifically literate workforce and broadening participation of underrepresented groups in science, technology, engineering and mathematics (STEM).

These consortia are intended to spur technological innovations that drive economic growth and develop a diverse STEM-enabled workforce.

US: National Institute of Standards and Technology Announces New Competition for Advanced Manufacturing Planning Awards

On 30 July 2014, the US National Institute of Standards and Technology (NIST) [announced a new competition](#) for planning awards to support industry-driven consortia in developing research plans and charting collaborative actions to solve high-priority technology challenges and accelerate the growth of advanced manufacturing in the United States (US).

NIST's [Advanced Manufacturing Technology Consortia \(AMTech\) Program](#) anticipates awarding a total of \$5.6 million in two-year grants. Awards will range between about \$250,000 and \$500,000, subject to the availability of

funds. Applications are due 31 October 2014 and the successful applicants will be announced during the first half of 2015.

Teaming and partnerships that include broad participation by companies of all sizes, universities and government agencies, driven by industry, are encouraged. Nonprofit US organizations as well as accredited institutions of higher education and state, tribal and local governments are eligible to apply for the program.

AMTech's goal is to spur consortia-planned and led research on long-term, precompetitive technology needs of US manufacturing industries. The program aims to help eliminate barriers to advanced manufacturing capabilities and to promote domestic development of an underpinning technology infrastructure, including high-performing supply chains.

Assessment of innovation performance

Australia: Gross expenditure on research and development in 2011–2012

Latest Australian Bureau of Statistics (ABS) data shows that gross expenditure on R&D (GERD) in Australia increased by \$750 million in financial year 2011–12 (or by 2.4%) to \$31.7 billion. GERD represents the total domestic expenditure devoted to R&D by the business, government, higher education and private non-profit sector.

GERD as a proportion of GDP remained at 2.13% in 2011–12, a slight decrease from 2.20% in 2010–11. This was due to a reduction of \$300 million in government sector R&D in 2011–12, while R&D in other sectors grew by lower rates than nominal GDP growth in the same year (5.6%). Australia's GERD/GDP ratio is slightly lower than the OECD average of 2.37% of GDP, but higher than OECD countries such as Canada, the Netherlands and the United Kingdom. Australia is ranked 15th in the OECD on this R&D intensity measure.

GERD expenditure was distributed across sectors as follows: \$18.3 billion in the business sector (58% of the total); \$8.9 billion in the higher education sector (28% of the total); \$3.5 billion in the government sector (11% of the total); and \$0.9 billion in the private non-profit sector (3% of the total).

Australia: Innovation in Australian Business, 2012-13

Latest statistics from the Australian Bureau of Statistics ([Innovation in Australian Businesses 2012-13 - ABS Cat. No. 8158](#)) shows that 42.2% of Australian businesses undertook innovation activity (innovation-active businesses) in 2012-13, compared to 46.6% in 2011-12. Innovation-active businesses include those that undertook any innovative activity irrespective of whether the innovation was introduced, is still in development or was abandoned.

Large businesses with 200 or more employees were more than twice as likely as businesses with 0-4 employees to be innovation-active (74% compared with 35%).

One in five businesses introduced new or significantly improved goods or services, with services more likely to be introduced. Almost one in five businesses also introduced new or significantly improved operational processes.

Lack of access to additional funds was the most frequently identified barrier to innovative activity, at 29% of businesses. Lack of skilled persons was the

most prevalent barrier for businesses with 5-19 employees (31%) and 20-199 employees (29%).

Innovation-active businesses were most likely to source their ideas and information for the development of innovation from within the business or from a related company (59%).

Of all innovation-active businesses, 3% received financial assistance from government organisations to undertake innovation activities during the year ended 30 June 2013. Of these businesses, 70% indicated the financial assistance received was from the Commonwealth Government.

Overall, clients, customers or buyers were the most common collaboration partners for innovation-active businesses.

The most common collaboration partners within Australia were clients, customers or buyers, while suppliers of equipment, materials, components or software were the most common overseas collaborators for innovation.

Australia: Smart Grid, Smart City Demonstration Project 2010-2014

The [Smart Grid, Smart City \(SGSC\) Project](#) has developed the business case that will help inform future decisions regarding smart grids by government, electricity providers, technology suppliers and consumers across Australia.

Based on the trials undertaken, an independent final SGSC report, [Shaping Australia's Energy Future: National Cost Benefit Assessment](#) (NCBA) estimated a net economic benefit of up to \$28 billion (the 2014 value) over the next 20 years from the deployment of smart grid technologies in Australia.

The project focused on residential customers, as they represent the largest user group in Australia, and generally have more discretion over when and how much energy they use.

Approximately 17,000 customers participated in the programs trials, which is now considered to be one of the widest-ranging technology assessments of smart grid products in the world. The project deployed and tested multiple 'in-grid' and 'customer-focussed' smart grid technologies and applications. The most exhaustive of these combinations examined the impacts and benefits of Distributed Generation and Distributed Storage (DGDS) solutions, examining how residential and grid based DGDS could contribute to future peak demand management.

The project has demonstrated that there are four key aspects to realising the NCBA benefits: improving consumer pricing outcomes, technological development and deployment, introduction of cost reflective electricity pricing including dynamic tariffs, consumer education and behaviour change

programs to further enhance consumer knowledge of their electricity consumption.

A large proportion of the net benefits identified can be derived from the economic deployment of a number of in-grid technologies which improve operational efficiency, reduce capital investment (through better managing peak demand) and deliver improved reliability for consumers at a lower cost.

Global Innovation Index 2014

The Global Innovation Index 2014 (GII) was released on 18 July 2014 in Sydney by Australia's Minister for Industry, Ian Macfarlane, along with Francis Gurry, Director General of the World Intellectual Property Office (WIPO) and Bruno Lanvin of the international business school INSEAD. The GI, now in its 7th edition, is co-published by Cornell University, WIPO and INSEAD and ranks world economies' innovation capabilities and performance across a broad range of factors and publishes a rich collection of analytical chapters. The theme of the 2014 GI, 'the Human Factor in Innovation', explores the role of the individuals and teams behind the innovation process.

Australia ranks 17th in the overall 2014 GI, up two positions from 19th in 2013. Australia is considered an Innovation Leader relative to its GDP, but the 2014 GI rankings indicate that Australia is less efficient than leading countries in translating its strengths in innovation inputs, such as tertiary education and general infrastructure, to innovation outputs such as intangible assets and knowledge diffusion.

OECD released latest Science and Technology Indicators

OECD has released latest Research and Development (R&D) statistics with the publication of the [Main Science and Technology Indicators](#) (MSTI) 2014/1 on 10 June 2014.

The MSTI database provides a set of indicators that reflect the level and structure of the efforts undertaken by OECD Member countries and seven non-member economies in the field of science and technology from 1981 onwards. The indicators cover the resources devoted to research and development, patent families, technology balance of payments and international trade in R&D-intensive industries.

The statistics of this release confirms the recovery of Gross Domestic Expenditures on R&D (or GERD) in 2012. In the OECD area, the level of R&D spending rose by 2.9% in real terms from 2011 to stand above pre-crisis levels for a second straight year.

This growth has been driven by a strong recovery in R&D performed by business (+3.9%), which has offset subdued growth of R&D expenditures in higher education institutions (+1.1%) and in the government sector (+1.0).

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Government R&D budgets remained stable or declined in a majority of countries, reflecting the impact of widespread fiscal consolidation.

The data also show that Korea now ranks first among OECD countries in terms of its R&D intensity. Australia ranked at 15th position in terms of R&D intensity.

Events & conferences

17th National Science Week

[The 17th National Science Week](#) ran from 16-24 August 2014 across Australia. With more than 1600 events and 1.5 million attendees, Australia's annual celebration of science gives Australians everywhere the opportunity to attend a science demonstration, public lecture, exhibition or simply participate at home by becoming a citizen scientist.

The National Science Week is proudly supported by the Department of Industry through the Inspiring Australia science engagement programme, and national partners including CSIRO, the Australian Science Teachers Association and ABC Science.

ANU's Advanced Instrumentation and Technology Centre: Second Stage launched

On 15 July 2014 Minister for Industry Ian Macfarlane [launched](#) the second stage of Australian National University's Advanced Instrumentation and Technology Centre at Mount Stromlo.

The Australian scientists have won two world-leading contracts to make astronomical instruments which will further consolidate Australia's reputation for global innovation. The Centre has been contracted to design one of the first instruments for the Giant Magellan Telescope (GMT), a super-giant earth-based telescope being built in Chile that is set to revolutionise our view and understanding of the universe. And EOS Space Systems, with technical support from the Centre, has been selected for a commercial \$6.4 million contract from the Korean Astronomy and Space Science Institute for a laser ranging telescope to track space junk.

BIO 2014

The Department of Industry supported Australia's participation this year at the annual Biotechnology Industry Organisation (BIO) Convention in June 2014 in San Diego, USA.

The BIO Convention attracted 15,667 industry leaders, including nearly 2,500 CEO's, from 50 states and 70 countries, bringing together industry (major

pharmaceutical companies, SMEs), government and academia and affiliated services industries.

Australia was one of the ten largest international delegations attending the BIO Convention with more than 250 delegates.

On behalf of Minister Macfarlane, Karen Lanyon the Australian Consul-General, Los Angeles was the senior Australian Government representative at BIO 2014. Ms Lanyon was accompanied by a departmental official, Susan Hawes (as A/g Manager, Biomedical Industry Strategy Section) and the Vice-Consul, John Brenton.

Ms Lanyon attended national and international and networking events that provided an opportunity to meet CEOs; business development manager; and researchers in the biomedical sector to highlight Australia's capabilities and seek new investment.

She also held meetings with multinational bio-pharmaceutical companies (MNCs) to discuss investment and collaborative opportunities in Australia. MNCs included AstraZeneca, Pfizer, GSK, Amgen, AbbVie, Merck and Patheon Biologics. The meetings provided an opportunity to discuss initiatives in the 2014-15 Budget and reiterate the Government's commitment to promoting an attractive investment environment for industries such as the bio-pharmaceutical industry. This included the Entrepreneur's Infrastructure Programme, the R&D Tax Incentive, clinical trials reform and the proposed Medical Research Future Fund.

AusBiotech, as project manager, will provide the Department with a Business Outcomes Report which will include information about potential business outcomes/finalized agreements; and feedback on elements of the coordinated national approach to BIO 2014.

Clinical Trials Advisory Committee: Meeting 2–12 September 2014

The Clinical Trials Advisory Committee (CTAC) was established to provide advice to the Department of Industry and Department of Health on the Australian Government work program to progress clinical trials reform. The Committee comprises senior representatives from Commonwealth, State and Territory Governments, industry, health consumer organisations and the clinical research community and is co-chaired by representatives from the Departments of Industry and Health.

The new Committee has been established to ensure the authority, expertise and a broad representation of the clinical trial sector can be harnessed to expedite progression of the work program and continue to advance the

recommendations for clinical trial reform. The CTAC also represent an important mechanism to disseminate outcomes of the clinical trials reform.

The first meeting of the group was held on 21 May 2014.

The Committee Chairs acknowledged the work of the former Clinical Trial Action Group (CTAG) Coordination Group and that many of the CTAG Report recommendations have been progressed through its members' work and collaboration.

The second meeting of the CTAG is scheduled for 12 September 2014.

Defence + Industry Conference 2014

The [Defence + Industry Conference 2014](#) was held on 29-30 July 2014 in Adelaide. This conference brought together approximately 600 participants from Government, Defence and industry for two days of presentations, workshops and networking opportunities. Key themes discussed at the conference included the upcoming Defence White Paper, opportunities for Australian industry in the defence global supply chain, and commercialising innovation.

Horizon Scanning Toolkit

The Innovation Toolkit has had a new resource added to it: *A practical guide: introduction to horizon scanning in the public sector* gives an in-depth introduction to the technique of horizon scanning and why and how it should be used. Details on the resource can be found [here](#).

Innovation Month (7 July – 1 August 2014)

[Innovation Month 2014](#) was launched by Secretary to the Department of Industry, Glenys Beauchamp on 7 July. At this event the Secretary also launched the first of the APS Innovations videos series (see full series [here](#)), providing video snapshots of some of the innovative things done by the public service.

There were a range of cross-agency and open events, including:

- Is Australia ready for the public service to be truly innovative? A joint event with IPAA ACT.
- Policy Visualisation Network. Run by the [Policy Visualisation Network](#), a cross-agency network that focuses on developments in presenting data in fast and useful formats. The event featured a series of speakers and was hosted online connecting numerous ABS venues together. A blog summary of the event is [here](#).
- *The TACSI Tour: Risk & Innovation*. Run by [The Australian Centre of Social Innovation](#) the workshop ran in Melbourne, Canberra, Sydney

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and Adelaide.

- *GovHack*. This year was the biggest GovHack yet with 1300 attendees in 11 cities around the country producing approximately 200 projects. Winners have been announced on the [Govhack website](#), you can also view all the projects [here](#). (More on GovHack on pp. 23-24)
- *The datagovau birthday bash*. A birthday celebration for the first year of the datagovau re-launch. Speakers included John Sheridan, Australian Government Chief Technology Officer, Pia Waugh, Director Coordination and Gov 2.0, Australian Government Department of Finance, Professor Sir Nigel Shadbolt, co-founder of the UK Open Data Institute, Jacques Mailloux, CIO of Elections Canada, and Richard Pietro, host of the Open Government Tour 2014 Canada. A download link of the recorded event is [here](#).
- Assisting in the datagovau event was [Cofluence](#), the innovation specialists that also hosted the [GovCampAU](#) event. *GovCampAU* was a day long weekend event which featured an unconference style, where attendees proposed and selected topics for discussion. The event was broadcast online to five cities around Australian and had over registered 400 attendees. A blog summary of the event is [here](#).
- Cofluence was also a partner in the *Pattern Breaking and Beyond Summit* which was hosted and developed by the Department of Health. The day-long conference offered a range of speakers on innovation in the public sector. A summary of the talks is available [here](#).
- The Department of Education developed two open events for Innovation Month; *Google Glass a certain reality* and the *Geospatial Forum*, which covered the work of the Australian Urban Research Infrastructure Network.
- Geoscience Australia ran a talk on its role in open data.
- Comsuper developed *Creating a culture and environment for Innovation* an event which was hosted by the ABS and covered the development of innovation culture and leadership's role in it, citing the 2011 Census as an example. A summary blog post of the event is [here](#).
- The Design Capability team from the DHS facilitated *Learning about Design*, a one day workshop hosted by the Department of Foreign Affairs and Trade.
- The Department of Education provided the venue for two interactive workshops run by the Department of Industry, *Idea management systems: the devil's in the details* and *Cross-agency collaboration –*

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what's the magic ingredient? A blog summary of Idea management systems is [here](#), and one of *Cross-agency collaboration* is [here](#).

The Department of Industry also developed *The Uncomfortable Ideas for the Public Service* speaker series, a weekly lunchtime seminar, hosted by the NICTA eGov Cluster. The topics were around:

- Failure: is it the dirty word that we can all learn from? (Blog entry for the event is [here](#).)
- Leadership or Leadersunk: are new models of leadership needed for innovation in the public service? (Blog entry for the event is [here](#).)
- Can you be an effective public servant if you're not innovating? (Blog entry for the event is [here](#).)

These events were also supplemented by a range of internal events run among APS agencies.

GovHack 2014 Red Carpet Awards

The Department of Industry were Gold Sponsors of GovHack 2014, awarding the prize for the Best Business Hack - Best use of the Energy Rating dataset at the GovHack Red Carpet Awards in Brisbane on 10 August.

1st Prize went to [Project Energy Calculator and Comparison tool](#) by Team Jonathan and Wai (Canberra):

“A well-conceived and thoughtful design, the Energy Calculator and Comparison tool fully utilises the depth of the dataset and provides a clear value proposition for the user. The result is a relevant and important information tool, one with obvious potential for commercial application.”

For more information about GovHack 2014 and to see all the winners, visit www.govhack.org/.

Tasmania: GovHack 2014

Tasmania participated in the annual national competition GovHack between 11 and 13 July 2014.

The Tasmanian Government contributed a range of data sets this year, including data on crashes, bus timetables and health.

The GovHack awards showcased the home-grown talent Tasmania. The Most Outstanding Tasmanian Benefit prize was awarded to Alex Leith for the project Alex's Tas Crash Maps, which is a series of maps showing Tasmania's motor vehicle accidents across the state.

The Innovation Award went to the wonderfully named 'All You Need Is Gov' for their project What is Gov (Baby Don't Hurt Me) for creating an iPhone

game which educates people about government functions and structures.

Tasmania also impressed on the national stage, with four local teams through to the national awards in Brisbane. Of these, Tasmania won three categories, three second-places and several highly commended awards.

NSW: NSW Business Leadership Forum

Closer and more effective partnerships with business, industry associations and the research community are at the core of a new economic agenda for New South Wales.

The second Business Leadership Forum will be held in Sydney on 9 October 2014, and is an important event that provides a platform for the NSW Government and industry to develop partnerships that are vital to achieving sustainable long term economic growth in NSW.

Following the success of the inaugural event, the 2014 Business Leadership Forum will provide the opportunity for an open Government-industry dialogue on restoring business confidence, creating jobs and positioning NSW for greater global competitiveness.

During the Forum the NSW Government will also report on the implementation progress of the [NSW Economic Development Framework](#) and [2014 priority actions](#).

Tasmania: Disruptive Technology Forum

The Disruptive Technology Forum is a two day interactive event to be held on 1-2 October 2014 at Queechy High School. The forum will involve the [Formula 1 \(or F1\) in Schools](#) Science, Technology, Engineering and Maths (STEM) Challenge, Australian Maritime College (AMC) rapid prototyping and CSIRO.

Asia-Pacific: The 2014 ISPIM Asia-Pacific Innovation Forum

[The 2014 ISPIM Asia-Pacific Innovation Forum](#) will be held in Singapore on 7-10 December 2014. Organised by ISPIM, in collaboration with Singapore Management University, this event will bring together around 250 innovation experts from 35 countries. The event programme will tackle the region's key innovation issues by attracting top-level speakers from Asia-Pacific from academia, industry and government. The three-day event will include:

- Multi-track sessions that mix industry, academia, science and government;
- Dedicated sessions and communities on innovation challenges for research, business and government;
- Showcasing innovation in Singapore with presentations, workshops

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and site visits; and

- High-profile networking events each night, ISPIM-style.

EU: European Service Innovation Centre Conference ‘Service Innovation as Driver of Change for European Industries and Regions’

The European Service Innovation Centre (ESIC) [Conference ‘Service Innovation as Driver of Change for European Industries and Regions’](#) will be held on 9-10 September 2014 in Helsinki (Finland). The conference will present the key findings and lessons of the journey travelled by the ESIC since 2012 when it was established by EU to study the role of services in the context of European industries and regions undergoing significant economic transitions.

The conference will focus on the lessons learned in the field of service innovation and regional policy. The event is targeted to everyone engaged or interested in service innovation and the impact it has for transforming European industries and regions: national and regional policy makers, practitioners, experts, academics and company representatives. The Conference will provide views and perspectives to:

- How service innovation fosters regional competitiveness and growth?
- How transformative power of service innovation can be captured and utilised?
- What kind of policies, tools and measures need to be in place to enhance the transformation of regional economies?
- What kind of ecosystems and systemic policies are needed to boost industrial transformation through services?

The conference is free of charge and is organised by the European Service Innovation Centre, set up by the European Commission’s Enterprise and Industry Directorate-General.

EU: Nesta launches a re-designed Digital Social Innovation website

In August 2014, Nesta, in collaboration with [Variable](#) and [Interago](#), [launched](#) a re-designed crowdmapping website [digitalsocial.eu](#), a dynamic and crowdsourced map of organisations that work on digital social innovation (DSI). In the DSI [Open Data-Set](#), there are a total of 575 organisations with 629 projects. Most, if not all, of the case studies mapped on [digitalsocial.eu](#) take place via the Internet or are highly enabled by new technology trends

such as open networks, open hardware, open knowledge, and open data infrastructures.

The dynamic map shows the working connections between the various digital social innovators and will enable both practitioners and policymakers to understand what services, standards or digital projects are being developed, and what is the density of DSI activities in Europe.

OECD Global Forum on Development

The [OECD Global Forum on Development](#) was held on 2 July 2014, with representatives of governments from OECD and non-OECD countries, the private sector, academia, foundations, and OECD experts. The Forum discussed critical policy questions including the impacts of innovation on inclusive growth and how inclusive innovations can be scaled up to serve poverty alleviation efforts. A summary of the Forum is available [here](#).

UK: 4th Global Innovation Forum

The [4th Global innovation Forum 'Innovation is Everywhere'](#) will be held in London (UK) on 19-20 November 2014. The Forum will discuss the latest trends in the field of innovation, creativity, design, R&D and new product development, as well as the major challenges for the future. The event comprises: sessions covering such themes as design thinking and the role of designers in the innovation process and reinventing innovation: roadblocks and how to re-invent around them; a panel debate on innovation culture; and multiple workshops including a Foresight workshop and Business Model Innovation workshop.

UK: Centre for Defence Enterprise – Networking Event

The Centre for Defence Enterprise (CDE) is holding a [networking event](#) for science and technology providers in London on 9 September 2014. Head of CDE, Andy Nicholson, will introduce CDE and give an overview of proof-of-concept research funding opportunities for innovative science and technology providers.

CDE will launch a themed competition for fully funded contracts (a total of £1 million available) on [automating cyber defence responses](#). An overview will be provided on some areas where innovative research ideas are sought for CDE's ongoing [enduring challenge competition](#), as well as how to create an effective proposal for CDE funding.

US Ambassador holds Innovation Roundtable

On 30 July 2014 Questacon hosted the inaugural [U.S. Ambassador's Innovation Roundtable](#), which brought together leaders in global technology, Australian researchers, government and students to discuss the challenges

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and opportunities of the knowledge economy. The roundtable was presented in collaboration with the U.S. Embassy with keynote addresses from the U.S. Ambassador to Australia John Berry who highlighted that collaboration is critical for the economies of the United States and Australia, and from the Chief Scientist for Australia Professor Ian Chubb AC.

Panel discussions featured representatives from Google, Microsoft, Intuit, Boeing Australia, Raytheon, Cisco, Lockheed Martin, Seeing Machines, General Electric Australia, Sense-T, BHP Billiton, IBM Research Australia, CSIRO, the Grattan Institute, and The Australian National University. They were joined by 55 students and teachers from Gungahlin, Narrabundah, Dickson and Hawker Colleges, plus members of The Australian National University Entrepreneurs group.

Discussions explored successful examples of U.S.– Australian innovation business partnerships, looked at the challenges to commercialising R&D in Australia, emphasized the importance of collaboration in driving innovation, and discussed emerging ideas and trends for innovation amongst SMEs and Entrepreneurs. Thus, in the final panel on "Emerging Ideas and Trends in Innovation - SMEs and Entrepreneurs," there was broad consensus that connecting Australian and U.S. SMEs through innovation will be critically important to future economic prosperity in both countries. The opening session and panel discussions can be viewed at:

<https://www.youtube.com/playlist?list=PLpB6csqtU-rZRJkDpZzqAp9Q1p8LPg-X->

The U.S. Embassy has plans to hold future *Ambassador's Innovation Roundtables* around Australia.

Publications

IP Australia publishes a Report on patent backlogs, inventories and pendency

On 2 August 2014 [IP Australia](#) published the first in a series of research papers, the [Economic Research Paper 01: Report on patent backlogs, inventories and pendency](#). This report analyses IP Australia's patent inventory using the framework produced by the [US Patent and Trademark Office](#) and the [UK Intellectual Property Office](#). This now allows for comparisons of the three countries - Australia, the US and UK - along with transparent data on the current inventory of applications. The research was identified in the [Australian Intellectual Property Report 2014](#).

The report highlights that the total patent inventory at IP Australia doubled between 2000 and 2009, peaking at 100,000 pending applications in 2010, and has fallen since then.

The report was commissioned from the Melbourne Business School and is an independent piece of research, making up the first paper in the new economic research paper series from IP Australia.

Smart Grid Smart City Project publications

Smart Grid, Smart City Demonstration Project 2010-2014

Smart Grid Smart City: Shaping Australia's Energy Future, Executive Report

Smart Grid Smart City: Shaping Australia's Energy Future, National Cost Benefit Assessment

Smart Grid Smart City: Australian Standards for Smart Grids Standards Roadmap

Smart Grid Smart City: Smart Grid Vocabulary AS5711 Standard

Website addresses:

www.smartgridsmartcity.com.au

<https://ich.smartgridsmartcity.com.au>

The NSW Business Chamber releases a discussion paper on Industry Research Collaboration

The New South Wales Business Chamber has published a discussion paper on [Industry-Research Collaborations](#). The paper, part of the Chamber's 'Thinking Business' initiative, was prepared by PwC, and examines how more effective industry-research sector collaboration can improve commercial outcomes.

The paper includes 'six practical recommendations' to reduce barriers to collaboration, with associated 'visions' and 'goals'. The recommendations focus on action by the business community and the NSW Business Chamber, but include specific suggestions for government reform.

These recommendations are largely consistent with the Australian Government's plans for structural reform, industry development, increased collaboration and more efficient delivery of services and programmes. Some of the discussion paper's findings and recommendations are also consistent with those of the National Commission of Audit.

The launch of the discussion paper on 17 July 2014 was attended by members of the NSW Business Chamber and the local (Parramatta) business community, as well as representatives of NSW state government agencies, Australian Government agencies including the Department of Industry, universities and other research organisations.

Nesta releases research findings on the impact of mentoring

On 29 July 2014 Nesta released a [summary](#) of their research into impact of business mentoring involving 25 creative businesses – a third cohort being within the study.

Previously, over 80 businesses had been matched to Nesta mentors, with the benefits of mentoring and the value it provides both to mentors and the businesses outlined. Also published had been [case studies](#) that recount some very positive mentoring experiences.

Stanford: Research finds imitation can be as effective as innovation

In its [Press Release on 23 July 2014](#), Stanford Graduate School of Business reports on its recently published research which finds evidence that imitation may be as an effective way of building the country's prosperity as cutting-edge innovation.

A [paper](#) coauthored by [Chris Tonetti](#), a macroeconomist at [Stanford Graduate School of Business](#), shows that some countries are being entirely rational by tilting more toward adopting technology than developing it themselves. In a separate paper, Tonetti argues that the same is true at the company level. While there are only a few Googles or Oracles in the world, there is a multitude of companies that can generate big aggregate gains by using the innovations from the pioneers.

Working with [Jess Benhabib](#) of New York University and [Jesse Perla](#) at the University of British Columbia, Tonetti has developed a model for how

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countries can think through the right balance between imitation and innovation. They call it the “productivity equilibrium,” and say it can vary widely between nations.

For the public, innovation is almost always a win. But “private benefits” — such as the profits that accrue to an innovator — are usually smaller because innovation leaks out to the public in all sorts of ways. For a company, or even a government, those private returns from investment in innovation can be smaller than the returns from an investment in imitation. Many fast-growing nations (e.g., Japan and South Korea earlier, and now China) have evolved from being almost pure imitators to being technology producers in their own right.

According to the researchers, the frontier countries act as a locomotive, pulling the other countries behind them. For most European nations, which are close to the frontier, the right balance may well be to hang slightly behind the innovation leader. Europeans can still achieve substantial productivity growth by implementing technology that originated elsewhere.

A model for how corporations can balance imitation versus innovation has been developed by Tonetti and Perla in a separate paper. Policy makers tend to focus on fostering cutting-edge companies that can grow at blinding rates and revolutionize entire industries. But to generate more aggregate economic growth, the researchers argue that it may be smarter to look at modest improvements in the legions of relatively inefficient old-school companies. There are only a few tech pioneers, but there are thousands of other companies that can reap significant increases in productivity at low cost by adopting technology from the pioneers, and “the least productive agents in the economy can be vital in generating growth by spurring technology diffusion.”