

SECURING AUSTRALIA'S FUTURE

Second Program Report

March 2013

1. Program Governance

Program Steering Committee

The Program Steering Committee welcomed three new members in 2013.

Prof Michael Barber FAA FTSE (Chair)
Prof Ruth Fincher FASSA
Prof Paul Greenfield AM FTSE
Prof Iain McCalman AO FAHA FASSA FRHS
Dr Graham Mitchell AO FAA FTSE
Prof Peter McPhee FAHA
Dr Jim Peacock AC FAA FTSE FRS
Dr Susan Pond AM FTSE
Prof John Quiggan FASSA
Dr Leanna Read FAICD FTSE
Prof Julianne Schultz AM FAHA (Deputy Chair)
Mr Dennis Trewin AO FASSA (Deputy Chair)

Expert Working Groups

The six Expert Working Groups currently comprise the following members:

Australia's comparative advantage

Prof Glenn Withers FASSA (Chair)
Peter Laver FTSE (Deputy)
Prof Joseph Lo Bianco FAHA
Prof Graham Farquhar FAA FRS
Prof John Prescott ATSE
Prof Chris Gibson AAH
Dr Sally Gras AAS

STEM: Country comparisons

Prof Simon Marginson FASSA (Chair)
Prof Russell Tytler (Deputy)
Prof Nalini Joshi FAA
Prof Stephen Gaukroger FAHA
Prof Geoff Prince
Prof Sue Richardson FASSA
David Hind FTSE

Asia literacy – language and beyond

Prof Ien Ang FAHA (Chair)
Prof Chennupati Jagadish FAA FTSE (Deputy)
Prof Kent Anderson
Prof John Fitzgerald FAHA
Prof Fazal Rizvi FASSA
Prof Krishna Sen FAHA
Prof Mark Wainwright AM FTSE

The role of science, research and technology in lifting Australian productivity

Dr John Bell FTSE (Chair)
Dr Bob Frater AO FAA FTSE (Deputy)
Leslie Butterfield
Prof Mark Dodgson FASSA
Prof Tom Spurling AM FTSE
Prof Stuart Cunningham FAHA
Prof Kevin Fox FASSA
Prof Elizabeth Webster

New technologies and their role in our security, cultural, democratic, social and economic systems

Prof Rob Evans FAA FTSE (Chair)
Prof Robert Williamson FAA (Deputy)
Dr Genevieve Bell FAHA
Prof Gerard Goggin FAHA
Prof Rod Broadhurst FAHA
Prof John O'Callaghan FAA FTSE
John Mattick FAA
Prof Stephen King FASSA
Dr Michael Keating FASSA
Ron Johnson FTSE

Engineering energy: unconventional gas production

Prof Peter Cook CBE FTSE (Chair)
Dr Vaughan Beck FTSE (Deputy)
Prof Robert Clark FAA FRSN
Dr John Williams FAA FTSE
Prof David Bereton
Prof Sandra Kentish
John Toomey FTSE
Dr Brian Fisher FTSE

2. Program Update

The research program is proceeding under the guidance of the Program Steering Committee (PSC). The PSC met three times during 2012, chaired by Dr Alan Finkel. In 2013, the group is scheduled to meet four times. Prof. Peter McPhee FAHA replaces Prof. Richard Waterhouse on the PSC. Prof. Paul Greenfield FTSE and Dr Leanna Read FTSE replace outgoing PSC members Dr Alan Finkel and Dr Margaret Hartley. Prof. Michael Barber has agreed to chair the committee for the next 12 months. ARC has approved these variations to the "List of Researchers" for the SAF program.

Each of the six initial projects (detailed below) has an Expert Working Group in place and all of those groups have met face-to-face at least once. In several cases, numerous meetings, round table discussions and workshops have been convened. Project scoping documents and budgets for the six projects have been finalised and approved by both ARC and the Office of the Chief Scientist. A maximum of \$6.54 million has been allocated to the first six projects in the SAF program. In a number of cases, the Learned Academies have agreed to provide project support services to specific projects. Formal agreements to that effect are in place for Projects #4 and #6 (ATSE) and under negotiation for Projects #1 (ASSA), #3 (AAH) and #5 (AAS). Project #2 is wholly managed by the Secretariat.

The *First Interim Reports* for Projects #2 and #6 were provided to PMSEIC in October 2012. PMSEIC and OCS were also provided with the *Program Report #1*. Updated program reports are being provided to each PMSEIC meeting.

Projects #2 and #6 are due to deliver *Second Interim Reports* to the Chief Scientist by the end of March. The *Second Interim Reports* for Project #2 and Project #6 have been finalised. The EWG Chairs of both projects will present face-to-face updates to PMSEIC on 16 April. At the same time, the draft *Final Reports* for these two projects are in preparation for peer review and approval by Council, before submission to the Chief Scientist. Final Reports for these projects will be completed by 31 May.

Remaining EWG report deadlines for 2013 are 1 July (Projects #4 and #5) and 1 November (Projects #1 and #3).

The first end-of-year financial report will be provided to the ARC by the Secretariat by 31 March 2013.

Project 1: Securing Australia's Future – Australia's comparative advantage

The opportunities and challenges of an economy in transition are a key issue for Australia as it faces a rapidly changing global environment. This multidisciplinary research program will identify Australia's unique strengths and comparative advantages; establish which contexts and policy settings encourage creativity, adaptability and innovation; and explore the natural, social, geographical, economic, cultural and scientific attributes and capabilities needed to thrive as a nation.

Project 2: Securing Australia's Future – STEM: Country comparisons

A vibrant capacity in Science, Technology, Engineering and Mathematics (STEM) is pivotal to increasing our nation's productivity. Building on recent research commissioned by Australia's Chief Scientist to identify STEM skills shortages, this project will critically examine existing solutions to the STEM skills shortage in comparable countries and to ascertain which, if any, of those solutions could be usefully applied to the formation and maintenance of a STEM skills workforce and propose a set of options for increasing Australia's productivity and international competitiveness.

Project 3: Securing Australia's Future – Asia literacy – language and beyond

The depth of Australia's linguistic and inter-cultural competence will be a determining factor in the future success of developments in innovation, science and technology, research capacity, international mobility, trade relations and economic competitiveness. In the medium to longer term, the Asia Pacific region will be a principal focus, presenting major challenges and opportunities economically, socially and culturally, for our national security interests.

Project 4: The role of science, research and technology in lifting Australian productivity

Through the identification of opportunities for applying knowledge and skills in science and research across a range of industries and sectors including private and public enterprises, this project will examine ways to enhance innovation, creativity and productivity in the Australian workforce and business practices that will drive Australia's prosperity.

Project 5: Securing Australia's Future – New technologies and their role in our security, cultural, democratic, social and economic systems

Adaptability and innovation are central to a healthy and prosperous future. New technologies (their creation and their uptake) are critical in enabling Australia's innovative capacity and productive potential. This project will examine the risks and opportunities of a broad range of new and emerging technologies, and evaluate their transformative implications for Australia's society, democracy, environment, security and trade.

Project 6: Securing Australia's Future – Engineering energy: unconventional gas production

Energy needs will require us to keep turning to opportunities for alternative sources such as shale oil gas and coal seam gas. As technology and geological knowledge continue to advance, and the consequent economics of extracting unconventional natural gas become more feasible, Australia could be in a position to produce unconventional gas. This demands a comprehensive look at the scientific, social, cultural, technological, environmental and economic issues surrounding the reality of alternative energy sources such as unconventional gas.

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