The federal government’s new package of measures to promote research and development in Australia, Backing Australia’s Ability, continues the momentum from the previous scheme announced in 2001. This time, however, there is a greater emphasis on the commercialisation of research. The enthusiasm of some key players for the scheme has been ‘restrained,’ with concern about whether it will lift Australia’s performance in R&D sufficiently.


two cheers for government innovation scheme

Backering Australia’s Ability

On 6 May the Prime Minister, John Howard, introduced the "Backering Australia’s Ability, Building Our Future Through Science and Innovation” programme (BAA). This $5.3 bn package of measures which runs from 2004-05 to 2010-11, follows on from the “Backering Australia’s Ability” strategy announced in 2001, which provided funding of approximately $3 bn to run from 2001-02 to 2005-06. This brings the government’s 10-year commitment to science and innovation to $8.3 bn. In announcing BAA some two years before the expiry of most of the measures under the 2001 scheme, the government was aiming to provide certainty and continuity for researchers, giving them the confidence to make long-term commitments.

The research priorities that overlay the programme are: ‘an environmentally sustainable Australia;’ ‘promoting and maintaining good health;’ ‘frontier technologies for building and transforming Australian industries’ and ‘safeguarding Australia.’ The programme targets three main elements of the innovation system: ideas and research; commercialisation; and skills. See Table 1.

Drawing on experience gained since initiating its 2001 package, the government has included a number of new or re-designed components in BAA:

- the Commercial Ready programme, which merges R&D Start, the Biotechnology Innovation Fund and elements of the Innovation Access programme from the 2001 package for a more streamlined approach to supporting innovation activities;
- a substantial commitment to developing the CSIRO Flagship programmes to address major national goals and economic opportunities;
- funding to support independent medical research institutes with overhead infrastructure costs;
- specific funding for research on Australia's counter-terrorism needs;
- improved measurement and monitoring of the achievements of Australia’s publicly-funded research system; and
- funding to support development of an innovative culture in schools with appropriate skill building amongst students.

A fundamental objective of the government under the BAA package is to raise the level of collaboration amongst businesses, universities and publicly-funded research agencies in order to increase the opportunities for research to be used and commercialised.

TABLE 1

<table>
<thead>
<tr>
<th>Main elements of BAA</th>
<th>$ mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening Australia’s ability to generate ideas and undertake research:</td>
<td>3,046</td>
</tr>
<tr>
<td>Australian Research Council (ARC) National Competitive Grants extra</td>
<td>1,190</td>
</tr>
<tr>
<td>Research infrastructure grants extra</td>
<td>1,100</td>
</tr>
<tr>
<td>CSIRO National Flagships Initiative extra</td>
<td>305</td>
</tr>
<tr>
<td>ICT Centre for Excellence extra</td>
<td>251</td>
</tr>
<tr>
<td>National Health and Medical Research Council extra</td>
<td>200</td>
</tr>
<tr>
<td>Accelerating the commercialisation of ideas:</td>
<td>1,279</td>
</tr>
<tr>
<td>Commercial Ready Programme 1,000</td>
<td></td>
</tr>
<tr>
<td>Commercialising Emerging Technologies programme (COMET) extra 100</td>
<td></td>
</tr>
<tr>
<td>Cooperative Research Centres (CRC) programme extra 65</td>
<td></td>
</tr>
<tr>
<td>Building on IT Strengths (BITS) Incubator programme extra 36</td>
<td></td>
</tr>
<tr>
<td>National Stem Cell Centre extra 58</td>
<td></td>
</tr>
<tr>
<td>National Biotechnology Strategy extra 20</td>
<td></td>
</tr>
<tr>
<td>Developing and Retaining Skills:</td>
<td>283</td>
</tr>
<tr>
<td>Funding 2000 university places a year in ICT, mathematics and science 200</td>
<td></td>
</tr>
<tr>
<td>New teaching initiative to Boosting Innovation, Science, Technology and Mathematics Teaching 39</td>
<td></td>
</tr>
<tr>
<td>Questacon Smart Moves extra 11</td>
<td></td>
</tr>
<tr>
<td>Science Connections programme extra 26</td>
<td></td>
</tr>
<tr>
<td>Research supporting Australia’s counter-terrorism needs 7</td>
<td></td>
</tr>
<tr>
<td>Supplementary funding for 2006-07 announced in the 2003-04 Budget:</td>
<td>379</td>
</tr>
<tr>
<td>Australian Research Council National Competitive Grants 275</td>
<td></td>
</tr>
<tr>
<td>Cooperative Research Centres 63</td>
<td></td>
</tr>
<tr>
<td>R&amp;D Start 41</td>
<td></td>
</tr>
</tbody>
</table>
BAA also continues the R&D tax concessions that were introduced with the 2001 measures. These are estimated to cost $390 mn over the five years to 2010-11 (cf $59 mn in the five years to 2005-06).

**Commercialisation Measures**

Many of BAA’s measures relate to public sector research and education. However, of particular interest to private sector businesses will be the measures relating to the commercialisation of ideas and research. These measures address the need for continued support and continuity of investment in relation to commercialisation, covering areas such as accessing capital, development of management and entrepreneurial skills, effective linkages between research and industry and the long lead times involved with product development. The main programmes, as detailed by the government, follow.

**COMET**

To increase access to innovation services and capital investment in firms seeking to commercialise, the Government is increasing support to an all-time high of $100 million for the successful Commercialising Emerging Technologies (COMET) programme.

There are many great innovations developed by individuals, small Australian companies and researchers in universities. In order to capitalise on these innovations, COMET provides innovators with advice and financial assistance to plan their commercialisation, to attract capital for their project and to establish strategic partnerships to take the innovation to market. Advice is provided through a network of private sector business advisers, and financial assistance is available to subsidise access to service providers in marketing, commercialisation, intellectual property and business planning.

**Commercial Ready**

The Commercial Ready programme encourages the growth of innovative Australian companies in emerging and high-technology industries. More than 1,700 small and medium-sized firms will be supported to undertake research and development, proof-of-concept, technology diffusion and early-stage commercialisation. Commercial Ready will bring together and enhance R&D Start, the Biotechnology Innovation Fund and elements of the Innovation Access Programme into a single streamlined product for the business community. To enhance the delivery of Commercial Ready, the regional office network of AusIndustry will be extended to 2011 and the number of regional customer service managers will be increased.

More than $1 billion dollars will be provided over five years from 2006-07. To ensure a seamless transition to the new programme, and to provide immediate support for new projects, an additional $22 million will be provided over the period 2004-05 to 2005-06. The programme will also include the $41 million provided for R&D Start in 2006-07 through the 2003-04 Budget.

**The Pre-seed Fund**

This BAA programme was established to help the commercialisation of research and development undertaken by universities and public sector research agencies. The programme encourages the private sector to take a more active role in funding and managing the commercialisation of research from those institutions. The programme provides $78.7 million in funding over 10 years. While there is no new funding for the programme, $27.8 million will be expended over the period 2006-07 to 2010-11.

The Pre-Seed Fund programme has established four early-stage venture capital funds to invest in projects or companies spinning out from universities or government agencies. The funds are managed by venture capitalists experienced in research commercialisation and the development of sustainable businesses. These managers will acquire an equity interest in the companies or projects, and will provide management and technical advice to develop the commercial potential of the technology. The maximum investment in any project or company is $1 million. It is expected that the managers will eventually divest their interest in successful projects and companies to later-stage investors.

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**CRC**

The Cooperative Research Centres Programme supports research partnerships between the public sector (universities and government research agencies) and the private sector (firms and industry organisations). CRCs turn their research results into commercial products and services or transfer new know-how to industry or other users. They also train researchers in the skills needed to work in industry and improve private sector R&D.

An extra $65 million is now being provided for selection rounds in 2006 and 2008, as well as to fund successful applicants from the 2004 round. This builds on the $62.5 million additional funding provided in the 2003-04 Budget.

Inquiries:
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BITS
The Building on IT Strengths (BITS) Incubator programme will continue through to 2007–08 with extra funding of $36 million over four years. This builds on $86 million in funding for eleven incubators to date, for a total of $122 million.

Early stage ICT companies face difficulties in getting finance for their activities due to the greater risk in investing in these firms. The BITS Incubator programme addresses this by providing incubation services, such as seed capital and business advice, to start-up ICT companies. As at June 2003, 3,553, applicants had been screened by BITS incubators, 267 companies had been accepted, 116 had graduated and nearly $83 million of private investment capital had been raised.

The programme was evaluated in 2003. The evaluation found that a period of further funding would be necessary for the incubators to achieve sustainability. By extending the BITS Incubator programme, the Government will ensure that the best performing incubators can continue to provide services to innovative ICT companies and help promote a competitive ICT sector.

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The National Stem Cell Centre
The Biotechnology Centre of Excellence programme, the National Stem Cell Centre, will receive an additional $30.4 million from the Department of Industry, Tourism and Resources, and $27.5 million from the Australian Research Council (ARC). This brings the total funding from the Australian Government to $57.9 million over five years from 2006–07 to 2010–11.

The National Stem Cell Centre was established as Australia’s Biotechnology Centre of Excellence (a Backing Australia’s Ability initiative) in May 2003 to support stem cell and related research and product development. The Centre is embarking on cutting-edge, product-based research using the stem cell platform. It is establishing a critical mass of leading national and international researchers and forging new partnerships with institutions and companies. The Centre also builds on Australia’s research excellence in stem cell technology to increase our international competitiveness at a time when other countries are also investing in this technology.

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New Industries Development Programme
The Australian Government is providing $14 million over five years from 2006 07 to continue the New Industries Development Programme. The New Industries Development Programme (NIDP) Mark III aims to increase opportunities for innovative, and market-oriented, industry development by providing small to medium-sized agribusiness with:

- Competitive-based funding for ‘Pilot Commercialisation Projects’ using through-chain approaches to take new agribusiness products, services and technologies to market. Funding will be matched by participants.
- Competitive-based ‘In-Market Experience Scholarships’ to enable emerging agribusiness managers to gain first-hand experience in specific areas of business management and new markets.
- Other elements of the programme encourage communication and dissemination of lessons learned across agribusiness-related industries. Learning tools developed through NIDP add to the knowledge base in the food and agricultural industries. The programme focuses on capacity building and practical applications and therefore increases the chances of innovative agribusinesses achieving success.

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Linking research to business – the reaction of stakeholders
A key focus of the Howard Government’s innovation scheme is achieving a match between Australia’s research effort and the needs of business. At the forefront of the innovation scheme will be the six CSIRO flagship programmes. Through these vehicles business will have input into CSIRO research in areas such as energy, light metals and food.
As with the CSIRO, the extra funding provided to the CRC reflects the importance of its objective of matching business’ needs with research.

Despite this emphasis on linking business and research, the business reaction to the BAA package has been mixed. Some business organisations took the position that the package was ‘public sector heavy,’ and expressed disappointment that the government had not included the closer business/research arrangements for which they had argued.

Of particular interest to business is the R&D tax deduction. Here the government has continued the funding of the 175% premium tax deduction available to companies that have raised their research efforts substantially; and it has allowed small companies that spend more than $1 million a year on R&D to cash-out the tax concession. However, the government has rejected requests to increase the basic 125% tax deduction on R&D.

Universities seemed to focus on the level of funding in the package. While relieved that funds have been committed at an early stage for research beyond 2005-06 – the end of the initial 2001 Backing Australia’s ability package – the view appeared to be that this would only sustain the current R&D effort, rather than provide a needed increase in Australia’s R&D performance. There was disappointment at the perceived absence of measures that would drive an increase in Australia’s R&D share of GDP toward the desired minimum of 2% of GDP. The chart below compares Australia’s performance in R&D against a selection of developed economies.

In this regard, the National Tertiary Education Unit reportedly calculated that BAA would need an additional $600 mn annually, to match anticipated (economic) growth in the next seven years.

For the universities, BAA also provided no answer to the problem of research infrastructure. Additional funding on research grants is reportedly around 20 cents for each dollar, well below the international norm of 40 to 50 cents. It was noted that this leaves the universities with substantial research infrastructure costs in relation to the grants they win. Also, in contrast to the business view, some academics would prefer to see more funding for basic, as opposed to commercially-focussed research.

At the same time, there are some positives for particular institutions, such as the $30 mn a year funding for research infrastructure for some medical institutions; and the advantage gained by those universities with strong technological research capabilities, due to the greater emphasis in BAA on commercialisation.

In summary, the government’s new BAA has provided greater certainty for both the research and business communities regarding the pursuit of innovation in the Australian economy. However, there is discontent within the business community concerning the extent to which they will be able to influence the research effort, and within the research community about the level of government funding for research and development in relation to the growth of the economy. Thus, it remains to be seen whether this refinement in the government’s approach to innovation will produce the commercial successes the economy needs.

Australia is below the international benchmark

![Graph comparing countries based on R&D expenditure as % of GDP for 2001-02](image_url)

Sources: Australian Bureau of Statistics and OECD

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