3.3 OUTCOMES AND PERFORMANCE

OUTCOME 3

Australia has a strong science, research and innovation capacity and is engaged internationally on science, education and training to advance our social development and economic growth.

CONTRIBUTIONS TO ACHIEVEMENT OF OUTCOME 3

A strong national and internationally connected science, education, research and innovation capacity is critical to Australia's economic and social development. In this context, the Government's policy approach is to:

- optimise research processes, enhance analysis and research infrastructure;
- facilitate and strengthen international engagement and dialogue within Australia's education, science and training sectors; and
- strengthen Australia's ability to generate ideas, undertake and accelerate research commercialisation, while developing and retaining skills.

As such a key focus for the Department is the ongoing implementation of *Backing Australia's Ability—Building Our Future through Science and Innovation* (2001-2011). The package is a ten-year strategy for research and innovation that continues the Australian Government's policy goal of pursuing excellence in research, science and technology.

The output groups to achieve Outcome 3 are described below.

AUSTRALIA'S SCIENCE, RESEARCH AND INNOVATION SYSTEM

Australia's science, research and innovation system is diverse, pluralistic and decentralised. It includes Australian Government departments, research agencies and organisations, universities, industry, private research organisations, health and medical research laboratories and organisations, industry research and development organisations and state research agencies. The Australian Government has established a number of whole of government or multi-portfolio decision making and coordination mechanisms; there is a strong emphasis on credible and consistent performance and it encourages collaboration. A key role is promoting the development of underpinning structures and infrastructure to support research.

The Department's outputs for the *Science, Research and Innovation System* are:

Output Group 3.1 - Research Infrastructure (2006-07 Resourcing: $641.594m)

Under this Output, the Department administers and funds, in whole or in part, a number of programmes, projects, and initiatives relating to research.

The Department seeks to strengthen national systems by promoting innovation and building Australia's research infrastructure and international research competitiveness, and to support the effective use of technology for the delivery of education and training.

Through the National Collaborative Research Infrastructure Strategy (NCRIS), the Department is implementing collaborative investments to meet strategic infrastructure needs in accordance with priorities for medium to large-scale research infrastructure investment for the next 10 years identified in the *NCRIS Roadmap* (2006). In 2006-07, NCRIS will develop investment plans for infrastructure in nine priority research capabilities, including evolving biomolecular platforms and informatics, optical and radio astronomy, integrated marine observing systems, and the structure and evolution of the Australian continent.

A focal point for the Department in 2006-07 is finalising the development of the Research Quality Framework (RQF) to identify and reward the quality and impact of research in universities. The RQF Development Advisory Group has been established to provide advice on the next phase of the RQF process. The Government has supported this process with $3 million to realise a world's best practice system for the evaluation and promotion of high quality research which also delivers real benefits to the wider community.

A key focus for the Department will be on the articulation and refinement of the Accessibility Framework for Publicly Funded Research, following initial consideration by the E-Research Coordinating Committee – jointly established by the Department of Communications, Information Technology and the Arts and DEST. The Accessibility Framework will be informed by the shape and direction of the Research Quality Framework.

Complementing the Accessibility Framework will be consideration of the E-Research Strategic Framework developed by the E-Research Coordinating Committee. The E-Research Strategic Framework will give impetus to consideration of a range of issues which will impact on Australia's ability to develop and broadly adopt capability.

The Department manages and delivers the Research Infrastructure Block Grants (RIBGs), the Institutional Grants Scheme (IGS), the Research Training Scheme (RTS), the Australian Post Graduate Awards Scheme (APA) and the Regional Protection Scheme (RPS).

The Department, through the RIBGs provides block research funding to eligible Higher Education Providers (HEPs) to enhance the development and maintenance of research infrastructure. Through the IGS the Department provides block research funding to eligible HEPs to support research and research training activities. The Department also provides block research funding to eligible HEPs through the Research Training Scheme to support research training for students undertaking Doctorate and Masters Degrees by research. The Department supports designated regional HEPs from losses incurred through the RPS in total RTS and IGS funds against a 2001 baseline. Designated regional HEPs are: Charles Sturt University; Southern Cross University; University of New England; University of Newcastle; University of Wollongong; Deakin University; La Trobe University; University of Ballarat; Central Queensland University; James Cook University; University of Southern Queensland; University of Tasmania; and Charles Darwin University.

Through the APA Scheme the Department provides financial support to Australian postgraduate students of exceptional research promise who undertake their higher degree by research at an Australian HEP.

The Department also coordinates the delivery of the National Research Priorities and facilitates and improves data and information on research commercialisation.

Through funding the Learned Academies and National Academies Forum the Department promotes research and scholarship in the natural and applied sciences, technological development and applied technology, the social science and the humanities.

The Department strengthens national systems by increasing access across sectors through supporting Framework for Open Learning projects to catalyse information and communication technology (ICT) developments for the whole of the education and training sector, foster collaboration and innovation in the use of ICT, and promote national and international engagement in such innovation in accordance with *Building a Knowledge Economy*, the MCEETYA education and training action plan for the information economy for 2005-07.

The Department seeks to raise the quality of outcomes by increasing accountability for publicly funded research through undertaking research and analysis in order to maintain an assessment of Australia's science and innovation performance, and report annually through the Australian Government's Innovation Report.

Key focuses for the Department in 2006-07 also include promoting innovation by continuing to support Australian scientist engagement in national programmes including those which advance space, biotechnology and nanotechnology and foster world class astronomy through:

- working to promote the attractiveness of Australia as the site for the Square Kilometre Array radio telescope;

- support for the Review of the Anglo Australian Observatory; and

- engagement with the National Committee for Astronomy to help ensure that their other priorities in the optical/infrared domain are appropriately advanced.

Output Group 3.2 – Assistance for Collaboration and Innovation (2006-07 Resourcing: $225.529m)

The Department will strengthen national systems in 2006-07 by developing workforce skills and participation through monitoring agreements for Cooperative Research Centres to deliver on agreed education and training strategies. One of the key elements of the CRCs is to produce industry ready PhDs and masters as well as developing and delivering other industry-relevant training programmes, where appropriate.

The Department will strengthen national systems in 2006-07 by promoting innovation through encouraging collaboration between industry and researchers through the Australian Government's premier innovation programme, the Cooperative Research Centres programme. Key activities for 2006-07 are:

- supporting the Cooperative Research Centre Committee in the selection of new centres to commence operation on 1 July 2007;

- developing contracts to support the commencement of new CRCs; and

- overseeing third year reviews of those CRCs which commenced operation in 2003-04.

The Department provides funding to support the ability of universities and other Publicly Funded Research Agencies (PFRAs), to engage in world-leading research. Investment by the Australian Government in research is significant, including around $1 billion of funding allocated by the Department in support of research and research training in Australia's universities.

A Commonwealth Radioactive Waste Management Facility will be established in the Northern Territory to manage both low and intermediate level radioactive waste generated by Australian Government agencies. In accordance with the current project schedule the site investigations required to determine a preferred site will be completed during 2006-07.

The Science Connections Programme provides support for a range of activities promoting awareness of science and innovation and its importance to the Australian community, particularly amongst young people.

The Department will raise the quality of outcomes in 2006-07 by increasing accountability through monitoring the performance of CRCs against the agreed deliverables set out in their agreements.

The Department will extend international influence in 2006-07 by enhancing international relations with a strong international programme of science and technology engagement through:

- enhancement of the Australia-China Special Fund for Science and Technology cooperation. Additional funding of $6 million over four years has been allocated to this arrangement;

- delivery of the International Science Linkages Programme to support collaboration between Australian and leading international scientists in areas within the National Research Priorities;

- key science and technology meetings with Japan, China, the European Union, South Africa, Mexico, France, Indonesia and India;

- concluding formal science and technology cooperation agreements with Indonesia, South Africa and the United States; and

- engaging in key science and technology work of the Organisation for Economic Co-operation and Development (OECD), and Asia-Pacific Economic Co-operation (APEC).

The Department will engage with stakeholders through regular engagement and discussions with those organisations that support the activities of Cooperative Research Centres, such as universities and industry. Key activities for 2006-07 will be meetings with industry partners, including industry associations, to better understand their requirements of the Programme.

The Department will engage with our stakeholders in 2006-07 by adopting Whole of Government approaches by providing effective support to the Prime Minister's Science, Engineering and Innovation Council and its working groups by liaising with other agencies to ensure a Whole of Government perspective.

Output Group 3.3 – Support for the Australian education and training export industry and international relationships (2006-07 Resourcing: $82.886m)

The Department's aim in supporting the Australian education and training export industry and international relationships is to encourage and facilitate international education and training engagement in line with Australia's national interest to realise intellectual, social, cultural, economic and security benefits to Australia from internationalisation. This will be achieved by creating the environment for a successful sector by underpinning the quality of education and training services delivered to

international students, and through government-to-government cooperation in partnership with the Australian education and training industry.

The Department's outputs for Outcome 3 contribute to creating the environment needed for a sustainable, diversified, quality Australian international education and training sector. These are:

- a quality international education experience for domestic and international students enhanced through scholarship programmes, consumer protection mechanisms and information services;

- Australia's bilateral, regional and multilateral international government relations meet the portfolio's global and domestic objectives;

- a sustainable and competitive Australian international education and training export sector supported through strategic partnerships, regulation, capacity building, timely market analysis and intelligence, and forward looking policy advice; and

- Australia is acknowledged internationally as a world leader in the provision of education and training, and Australia's excellence and innovation in the sciences and research is perceived internationally as being of a very high standard.

The Department will also extend international influence in 2006-07 by enhancing international relations through establishment of the Australia India Strategic Research Fund Programme (providing $20 million over five years) and the Australian Scholarships programme (providing $1.4 billion over five years) in conjunction with AusAID.

Output Group 3.4 – National leadership in engaging people in science and technology (Questacon) (2006-07 Resourcing: $17.797m)

Questacon, the National Science and Technology Centre, increases awareness and understanding of science and innovation through imaginative and inspirational learning experiences.

Questacon's innovative programmes and exhibitions are developed in response to the Government's strategic priorities, its innovation agenda and stakeholder feedback. Interactive exhibits, travelling programmes run by skilled science communicators, on-line content and science theatre are delivered at the Centre in Canberra and extensively across Australia and overseas, with particular emphasis on rural, regional and remote locations.

In developing its national role in communicating science, Questacon builds partnerships in science communication with the broader science community, industry and education providers. It works to deliver programmes aimed at supporting science

learning in schools and encouraging life long learning in the wider community. Questacon will receive $15.3 million over four years to undertake essential upgrades.

Goals and Strategies

The Department's Goals and Strategies for Australia's *Science, Research and Innovation System* for Outcome 3 are to:

- **Extend international influence** by enhancing international relationships; and increasing Australia's international competitiveness.

- **Engage with our stakeholders** by adopting Whole of Government approaches; listening and responding to stakeholders; and fostering understanding through analysis.

- **Strengthen our business practices** by improving business processes; and strategically investing in technology infrastructure and systems.

- **Strengthen National Systems** by promoting innovation; strengthening partnerships; developing workforce skills and participation; and increasing access across sectors.

- **Raise the Quality of outcomes** by improving quality and performance standards, increasing accountability; and recognising, rewarding and promoting quality results.

- **Engage with our Stakeholders** by listening and responding to stakeholders.

Outcome 3 resourcing

Table 3.1 shows how the 2006-07 Budget appropriations translate to total resourcing for outcome 3, including administered expenses, revenue from government (appropriation), revenue from other sources, and the total price of outputs.

Table 3.1.3: Total resources for Outcome 3 ($'000)

	Estimated Actual 2005-06 $'000	**Budget Estimate 2006-07 $'000**
Administered appropriations		
Output Group 3.1 – Research infrastructure	585,137	**635,286**
Output Group 3.2 – Assistance for collaboration and innovation	266,545	**208,492**
Output Group 3.3 – Support for the Australian education and training export industry and international relationships	24,511	**33,338**
Total administered appropriations	876,193	**877,116**
Total administered revenues	611	**611**
Departmental appropriations		
Output Group 3.1 - Research infrastructure	3,623	**6,183**
Output Group 3.2 - Assistance for collaboration and innovation	18,890	**16,702**
Output Group 3.3 - Support for the Australian education and training export industry and international relationships	37,710	**33,341**
Output Group 3.4 – National leadership in engaging people in science and technology	10,281	**11,887**
Total revenue from government (appropriations) contributing to price of departmental outputs	70,504	**68,113**
Revenue from other sources		
Departmental	22,714	**22,577**
Total price of departmental outputs (Total revenue from government and from other sources)	93,218	**90,690**
Total estimated resourcing for Outcome 3 (Total price of outputs and administered appropriations)	969,411	**967,806**
Average staffing level (number)	603	**625**

Administered Expenses by Item – Outcome 3

	Estimated Actual 2005-06 $'000	Budget Estimate 2006-07 $'000
Output 3.1		
Higher Education Support Act 2003	564,539	**529,461**
Anglo-Australian Telescope Board	4,594	**4,701**
National Collaborative Research Infrastructure Strategy	13,151	**98,196**
Framework for Open Learning	2,853	**2,928**
Total 3.1	*585,137*	***635,286***
Output 3.2		
Co-operative Research Centres	208,197	**189,382**
Major National Research Facilities	42,308	**0**
National Radioactive Waste Management	4,714	**3,480**
Defence of Common Law - Atomic Tests (RRWM)	543	**543**
International Science Linkages	10,190	**11,071**
Science Connections Programme	593	**4,016**
Total 3.2	*266,545*	***208,492***
Output 3.3		
International Education and Training	23,810	**32,625**
Assessment Fee Subsidy for Overseas Trained Australian Residents (ASDOT)	701	**713**
Total 3.3	*24,511*	***33,338***
TOTAL OUTCOME 3	876,193	**877,116**

Measures affecting Outcome 3

Research outreach and collaboration - continued support
Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	0.2	0.4	0.4	0.4

Research Quality Framework model - finalising development
Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	3.0	-	-	-

Australia-China Fund for Scientific and Technological Cooperation - increasing collaboration
Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	1.5	1.5	1.5	1.5

Australian Scholarships - establishment
Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	-	-	-	-

Assessment Subsidy for Overseas Trained Professionals - continuation
Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	-	-	-	-

National Science and Technology Centre (Questacon) - capital works and exhibition refurbishment

Capital ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	1.6	3.7	3.2	5.3
Related Expense ($m)				
	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	0.4	0.4	0.4	0.4

National Science and Technology Centre (Questacon) – scoping study into accommodation needs

Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	1.0	-	-	-

Information and Communication Technologies – national consistency

Expense ($m)

	2006-07	2007-08	2008-09	2009-10
Department of Education, Science and Training	7.6	7.6	7.7	-

Performance information for Outcome 3

Table 3.2.3A: Effectiveness Indicators for Outcome 3

	Effectiveness Indicator
Research publications	• Australian research publications per million Australian population. • Number of research publications in the higher education sector.
Patents	• Patents granted to Australian residents in Australia.
Industry contributing to research	• Universities' research income from industry and other sources.
National Economic Benefit	• The level of national income derived from international education and training. • The level of employment associated with education exports. • The number of overseas student enrolments in Australia. • The extent to which greater diversification is generated within the international education and training market in terms of countries of origin and fields of study.

Table 3.2.3B: Performance in delivery of Administered Outputs

Output Group	Performance Indicator	2005-06 Estimated Actual[1]	2006-07 Estimate[2]
3.1 Research infrastructure			
Quantity	Percentage of ARC and NHMRC grants won by universities*	>75%	>75%
3.2 Assistance for science collaboration and innovation			
Quantity	Number of grant recipients:		
	Cooperative Research Centres	70	54
	Major National Research Facilities *	15	-
	International Science Linkages:		
	Number of grant recipients for collaborative research	235	247
	Number of workshops and bilateral meetings	45	53
	Number of showcasing events	10	5
	Science Connections:**		
	Number of National Science Week Events	-	500
	Number of media articles on National Science Week	-	1200
Quality	Establishment of Australian Government radioactive waste management facility	Substantial progress in field investigation of sites	Site investigation to determine a preferred site completed
	Ministers' satisfaction with the annual Science Prize event		Ministers' satisfied
3.3 Support for the Australian education and training export industry and international relationships			
Quantity	Number of OS-Help loans, international scholarships, fellowships and exchange opportunities delivered compared to allocated numbers	3,020 (OS-Help) 470 (Endeavour)	3,088 (OS-HELP) 2,058 (Australian Scholarships-Endeavour)
	Number of ASDOT assessment subsides provided	500	500

[1] Where Performance Measure is * indicates Calendar Year 2005

[2] Where Performance Measure is * indicates Calendar Year 2006

*The Major National Research Facilities Programme will terminate at the end of the 2005-06 financial year.

**National Science Week was founded through Departmental allocations in the 2005-06 financial year. From 2006-07 it will be funded through the Science Connections administrative Programme.

Table 3.2.3B: Performance in delivery of Administered Outputs (cont)

Quality	The extend to which International Centres of Excellence are seen as world leaders in their field The impact of Regional Links projects on meeting Australia's bilateral, regional and multilateral education and training objectives	5 Centres reviewed and assessed as making due progress Number of projects undertaken and at least 90% assessed as effective	5 Centres assessed against funding agreements Number of projects undertaken and at least 90% assessed as effective
3.4 National leadership in engaging people in science and technology			
There are no Administered Outputs in Output Group 3.4			

Table 3.2.3C: Performance in delivery of Departmental Outputs

Performance Indicator	2006-07 Estimate
Administration	
Accurate and timely approval, payment and acquittal of grants in accordance with legislation and guidelines	At least 90% compliance in relation to Quality Assurance exercises
Progress of bilateral science and technology agreements	Milestones met
Effective management of the International Science Linkages programme	Funds targeted to priority areas
Implementation of changes to administration of University Block funds	Satisfactory delivery of administrative changes
Improved provision of key infrastructure, particularly information access and bandwidth to increase the accessibility of Australian research	Increased access and utilisation
Facilitating improved access to electronic repositories	Effective project outcomes achieved
Enhanced bilateral, regional, multilateral and industry relationships which augment Australia's international engagement in education and training.	450 Fee-for Service Contracts valued at $0.8m. 320 Market Opportunities issued through AEI market alerts 80% client satisfaction rating 2 Joint Working Group meetings 30 active memoranda of understanding
The effective protection of Australia's quality reputation through a legislative framework	120 compliance actions
Promotional activity and bilateral engagement convey relevant messages about Australia's quality	Measured increase in awareness of Australia as a quality education destination
Impact of 2007 Industry Seminars	800 registrants 80% satisfaction rating by participants
AEI websites and publications provide impartial, up-to-date, timely and relevant information	95% of materials on AEI Online and SIA Website up-to-date 80% client satisfaction with AEI information CEP Online updated as planned
Policy Advising	
The Minister will be satisfied with the timeliness and quality of briefs provided by the department	Satisfaction (at least 90%)
Facilitation of Government representation	Successful OECD and APEC meetings
Ministerial and Parliamentary Services	
Parliamentary reports will be provided within timelines set by the Parliament and its Committees and, where this is not possible or resources do not permit, interim response will be supplied within set timelines	Satisfaction (at least 90%)
The Minister will be satisfied with the timeliness and quality of Ministerials provided by the Department	Satisfaction (at least 90%)
Prime Minister's and Ministers satisfaction with the timeliness and usefulness of independent and external advice received from the Chief Scientist and PMSEIC	Satisfaction achieved
Research, Analysis and Evaluation	
Research activities are completed according to plan	At least 90%
Research and evaluation reports rated as satisfactory by the Minister	Satisfaction (at least 90%)

Table 3.2.3D: Performance in delivery of Departmental Outputs - Questacon

Performance Indicator	2005-06 Estimated Actual	2006-07 Estimate
Number of Questacon visitors that rate satisfaction as good or very good	>90%	>90%
Questacon visitor and audience reach	>1,200,000	>1,200,000
Reasonable cost per visitor as benchmarked against the international science and technology industry	$14.00	$14.80
Evaluation of Questacon's programmes and activities demonstrating Questacon is making a difference	Evaluations confirm programme efficacy	Evaluations confirm programme efficacy