Knowledge and Innovation:

A policy statement on research and research training

The Hon. Dr D. A. Kemp MP
Minister for Education, Training and Youth Affairs

December 1999
Foreword

Six months ago, I released a discussion paper on research and research training titled *New Knowledge, New Opportunities*. This paper outlined the Government’s vision for the future of higher education research in Australia, a future in which strong economic and jobs growth, cultural development, and a capacity to solve social problems, is underpinned by a strong and vibrant research base. The discussion paper noted that we are in the midst of two great research-based technological revolutions— in biotechnology and communications and information technology.

We must ensure that Australia keeps pace with the global revolution in knowledge production and its use; is an attractive site for research and development investment; and provides opportunities for our best and brightest researchers and innovators. Universities and their researchers will play a crucial role in achieving this goal. Not only will they be the leaders in producing fundamental knowledge, they will also be instrumental in disseminating new knowledge to the community, and provide training for the researchers of tomorrow.

To enable university research to maximise its potential, the discussion paper was built around a number of themes: the need to support and reward research excellence; to build critical mass in areas of opportunity; to capitalise on the returns on our investment in research; and to promote the role of universities in regional economic, social and cultural development. The discussion paper proposed a policy and funding framework for research and research training with the following features:

- an invigorated national competitive grants system to be administered by a restructured, strengthened and independent Australian Research Council;
- an enhanced strategic and priority setting role for institutions in relation to research and research training;
- research scholarships designed to provide research students with greater choice and influence in relation to their research training environment; and
- incentives to reward institutional diversity, strong strategic focus, enhanced collaboration with other participants in the research and innovation systems, and research training environments that are responsive to the needs of students and employers.

Since the release of the discussion paper, the Government has announced further initiatives to enhance our nation’s research capabilities. The response to the report of the Ralph Committee on business taxation represents a fundamental and far-reaching shift in the nation’s capacity to support knowledge-based and emerging enterprises. The decisions to halve the rate of capital gains tax and to exempt overseas pension funds from tax on gains made from venture capital projects will provide enormous opportunities to boost emerging enterprises at all stages in their development and facilitate growth in knowledge-based jobs.
This policy statement also complements the Government’s initiatives arising from the Wills report on health and medical research, and provides the foundation to support further Government action, including in relation to the Review of the Science Base, currently being undertaken by the Chief Scientist, and the National Innovation Summit scheduled for February 2000.

There has been an extensive process of consultation with universities, researchers, industry groups, and Commonwealth and State agencies in relation to the discussion paper. I thank the many individuals and organisations who participated in this process and have thereby contributed to the development of this policy statement. It has been enhanced by their input.

This statement announces major changes to the current arrangements for funding of higher education research in Australia with the aim of achieving the objectives outlined in the discussion paper. These changes make the best use of available resources to ensure that the research and research training undertaken in Australian universities continues to be world class and that the new knowledge it generates is effectively linked to innovation in Australian industry. The Government’s measures have been informed by the consultation process. The new framework provides for:

- a strengthened Australian Research Council and an invigorated national competitive grants system;
- performance-based funding for research student places and research activity in universities, with allocative formulae and transitional arrangements designed to ensure that all universities are able to compete effectively under the new arrangements;
- the establishment of a broad quality verification framework supported by Research and Research Training Management Plans; and
- a collaborative research programme to address the needs of rural and regional communities.

The Prime Minister has outlined his vision of Australia as a ‘Can Do’ country that can turn ideas and invention into income and jobs in Australia, for Australians. He has highlighted that it is important to encourage our bright young people to consider science as a career and to create better career opportunities in Australia for our best researchers. This will enhance Australia’s capacity to build new knowledge and convert endowments and ideas to our national advantage, to the benefit of all Australians.

In this policy statement, the Government has delivered the foundations that underpin the realisation of this vision.

DAVID KEMP
# Contents

Foreword ................................................................................................................................. iii

1. Research and research training: a national investment .................................................. 1  
   1.1 Introduction .......................................................................................................................... 1  
   1.2 The need for reform .......................................................................................................... 1  
   1.3 Research in the higher education system ........................................................................... 2  
   1.4 A vision for Australian university research ...................................................................... 3  
   1.5 A direction for change ....................................................................................................... 4  
   1.6 Principles of public funding .............................................................................................. 6  
   1.7 Conclusion ......................................................................................................................... 7

2. Competitive Research Schemes ......................................................................................... 9  
   2.1 An appropriate policy framework ..................................................................................... 9  
   2.2 The role of the Australian Research Council .................................................................. 10  
   2.3 A National Competitive Grants Programme .................................................................. 12  
   2.4 National and international facilities .................................................................................. 12  
   2.5 Transparency and accountability mechanisms ................................................................... 13  
   2.6 A balanced approach ...................................................................................................... 13

3. Performance-based funding .............................................................................................. 15  
   3.1 Performance-based funding schemes .............................................................................. 15  
   3.2 Institutional Grants Scheme ............................................................................................. 15  
   3.3 Funding for research training ......................................................................................... 17  
   3.4 Research Infrastructure Block Grants ............................................................................ 20  
   3.5 Contestability of funding for the Institute of Advanced Studies of The Australian National University .................................................................................................................. 20

4. Regional support ............................................................................................................... 21  
   4.1 Overview ............................................................................................................................ 21  
   4.2 Regional package .............................................................................................................. 21  
   4.3 Response to incentives .................................................................................................... 22  
   4.4 Regional fund .................................................................................................................. 22  
   4.5 Regional outcomes .......................................................................................................... 24

5. Accountability and quality assurance ............................................................................. 25  
   5.1 Overview .......................................................................................................................... 25  
   5.2 Institutional planning and reporting ................................................................................ 25  
   5.3 External quality verification ............................................................................................. 26

6. Conclusion .......................................................................................................................... 29
1. Research and research training: a national investment

1.1 Introduction
This policy statement sets out the Commonwealth Government's framework for Australia's higher education research and research training capability. It reflects the significant investment in research and research training the Government provides through our higher education institutions, with $1.3 billion of direct funding for research available in 2000. This funding sustains much of Australia's basic research effort, provides for the training of our postgraduate research students and for specific research grants funded on the recommendation of the Australian Research Council (ARC), as well as providing institutions with the infrastructure to carry out research and research training activities.

The release of the public discussion paper New Knowledge, New Opportunities in June 1999 provided the basis for extensive community debate about the framework for university research and research training. This statement is the Government's response to that consultative process. It announces major changes to current arrangements for funding of higher education research in Australia. At a time of budgetary restraints, these changes make best use of the available resources to ensure that our research and research training undertaken in Australian universities can aim at and achieve excellence.

1.2 The need for reform
The discussion paper identified significant strengths in Australia's research capacity. Submissions, consultations and other evidence gathered during the consultative process highlighted the considerable and diverse research strengths of our higher education institutions. Of particular note is the growth in research collaboration among universities and with industry, both within Australia and with our international counterparts.

Most contributors to the consultation process agreed that Australia cannot afford to be complacent in relying on our past and present research achievements. Competition is strengthening on a global basis and Australia's competitiveness and attractiveness to investors is increasingly determined by our relative knowledge capabilities. Research as a key source of knowledge and new ideas is central to success in the global knowledge economy.

However, the discussion paper identified several deficiencies in the current structure and performance of higher education research and research training:
• government funding incentives do not sufficiently encourage diversity and excellence;
• research in our universities is too often disconnected from the national innovation system;
• there is too little concentration by institutions on areas of relative strength;
• research degree graduates are often inadequately prepared for employment; and
• there is unacceptable wastage of private and public resources associated with long completion times and low completion rates for research degree students.

Nothing in the process of public consultation diminished these concerns. Higher education institutions generally welcomed a shift in the structure of incentives that would promote and reward a greater diversity of approaches to research. Most supported incentives that would encourage increased collaboration with enterprises in the design, conduct and application of research and related training of research students, while maintaining a strong commitment to basic research.

Consultations on the concept of the national innovation system and the contribution which higher education research institutions can make to it gave rise to a wide appreciation of the possibilities. There was a strong interest in the commercialisation of scientific research findings through equity shares, patents and other mechanisms for realising returns on intellectual property. The social value of research in the humanities and social sciences was also strongly argued.

Significantly, there was agreement that perceptions of student and employer dissatisfaction with the quality of research training ought to be specifically addressed, together with a willingness to work with industry to achieve improvements in this area. There was general acceptance of the need to improve student completion rates and times to graduation, whilst recognising the Government's responsibility to provide information on completions, to encourage such a focus.

1.3 Research in the higher education system

Our universities have a crucial role in the national research and innovation system. They are major contributors to the generation and transmission of knowledge in Australia. Many of our leading researchers have world standing in their fields of research, enhancing Australia's reputation as a serious and credible contributor to the global development of knowledge. Our universities are the key providers of training and professional development for our future researchers.

The focus of this policy statement is on the conduct of research and research training as an integral part of our higher education system, whose objectives are to:

• inspire and enable individuals to develop their capabilities to the highest potential throughout their lives (for personal growth and fulfilment, for effective participation in the workforce and for constructive contributions to society);
• advance knowledge and understanding;
• aid the application of knowledge and understanding to the benefit of the economy and society;
• enable individuals to adapt and learn, consistent with the needs of an adaptable knowledge-based economy at local, regional and national levels; and
• enable individuals to contribute to a democratic, civilised society and promote the tolerance and debate which underpins it.

Within this system the challenge is to ensure that our university research and research training system is appropriate to our social, economic and cultural goals as we move into the 21st century.

1.4 A vision for Australian university research

The Government appreciates that the return on investment from research is long-term. The social and technological progress of humanity is underpinned by the discovery and dissemination of knowledge, critical scrutiny of argument and evidence, creative design, clever application and an entrepreneurial culture. A vigorous research base makes an essential contribution to a democratic, learning society. This same research base is vitally important to the economic development of the country. The producers of knowledge are critical players in our national innovation system, providing the ideas and techniques which can be transformed into economic advancement.

Central to the Government's reforms to the higher education research system is a concern to ensure that Australia has a higher education research system that will allow it to enhance its global role as a creator and transmitter of knowledge while being able to respond to the rapid changes taking place in the way knowledge is being generated and applied. This will only occur in an environment which values a commitment to the pursuit of truth and the rigorous analysis of argument and evidence; where open debate and critical questioning are valued along with a willingness to consider alternative views on their merits; and where those within it appreciate their mutual responsibility for the sharing of knowledge and the value it brings to the wider community.

The Government's reforms will ensure that universities will continue to be places where discovery and creativity are fostered and encouraged, and places where ideas are discussed freely and critically in a spirit of openness and tolerance. They will be places where Australian and overseas enterprises will seek to locate their research and development investments and which will attract the best quality Australian and international students. The nation's young researchers and researchers-in-training will be nurtured in an environment which provides relevant experience, delivers high quality learning and values creativity and talent. Australia's research graduates will be sought after for their abilities to operate anywhere in the world at standards consistent with best practice.

The Government is therefore seeking to develop a research and research training system which will:
Knowledge and Innovation: A policy statement on research and research training

• ensure Australia is able to maintain and develop its research competence and international credibility across a wide range of fields of knowledge;
• facilitate the provision of diverse, high quality research training environments;
• encourage the expansion of the total national investment in research;
• expand opportunities and choice for research students;
• enable research organisations to respond flexibly to changes in the development of and demand for knowledge;
• secure and strengthen Australia’s internationally regarded basic research effort;
• support the development and dissemination of knowledge for its own sake as well as the social and cultural benefits it will bring to the wider community;
• extend the contributions of higher education research to the national innovation system through closer links with industry; and
• make more effective and visible the impact of research and research training on national economic competitiveness, social problem solving and community well-being.

1.5 A direction for change

Basic research, which is a keystone of innovation, has a strong foundation in Australia. Public investment in government and higher education R&D as a proportion of GDP is strong by international standards, with Australia ranked third of OECD countries. This investment has resulted in Australia producing 2.5 per cent of the world’s knowledge, well above our population base and share of world trade. This is an outstanding achievement by Australia’s institutions and their researchers. Much of this knowledge production is considered to be at the forefront of research in its field, producing outcomes which exert an influence internationally.

However, as well as contributing to the world’s stock of knowledge, Australian researchers also need to contribute this knowledge to the internationally competitive industries that will ensure sustainable economic growth and provide secure jobs and rising living standards for all Australians. The benefits of the information age cannot be realised fully unless Australia has access to the 97.5 per cent of knowledge that it does not produce.

Even though there has been a substantial increase in overseas science and technology linkages by the Australian higher education sector over the past fifteen years, these interactions are largely occurring within the academic community. To capitalise on the benefits that knowledge brings us, stronger connections need to be made between the producers of knowledge and the users of their research – both internationally and domestically.

Building on a strengthened effort in basic research, this exchange of knowledge between researchers and the users of research must be a defining characteristic of Australia’s higher education research system. This will involve greater participation...
of users in determining priorities for funding and performing research. Strong links to the innovation system will provide for greater movement of researchers across the various research settings, able to take advantage of specialist knowledge regardless of whether it exists within institutions or in commercial settings. The linkages should also extend to the provision of research training, where students will learn skills in both academic and industrial environments.

The culture of university research also needs to better recognise and reward the partnerships made with other members of the national innovation system. By doing so, it should become more entrepreneurial, seeking out opportunities in new and emerging fields of research that will provide social, cultural and economic benefit. Australia’s researchers are well used to producing truly excellent work. An entrepreneurial approach is needed to harness the full cycle of benefits from their endeavours through commercialisation, where appropriate. This culture of entrepreneurship needs to be the context for the training of our research students, and indeed all students.

Changes are therefore needed to the way research is funded and organised across the sector and within institutions. The Government expects to see greater diversity across the system as some universities focus on achieving international excellence across a wide range of fields, while others focus on excellence in particular strengths, including by building on their links with their regions, and assisting their local economies to grow through strategically targeted research.

By being alert to emerging opportunities, more entrepreneurial in their focus, flexible in their organisation and more responsive to business needs, institutions should attract more private investment. Their ability to develop new ideas and move quickly to apply them would then create a reinforcing cycle of opportunities, investment and rewards which can be shared by individual researchers and research teams. Through more strategic use of intellectual property rights, institutions would have scope to access revenue streams, royalty benefits, or equity shares for themselves and their researchers.

The Government recognises that there is a need to attract greater venture capital to enable commercialisation to operate successfully. In proportion to GDP, our business expenditure on R&D (BERD) is below the ratios for large industrialised countries, ranking 11th out of 17 OECD countries. Following the recommendations of the Ralph Review of Business Taxation, the Government is addressing the lack of venture capital available to finance commercialisation through reforming the taxation system. Overseas pension funds and domestic superannuation funds managed through a pooled development fund are to be exempted from capital gains tax on investment in venture capital projects. These measures, in conjunction with decisions to reduce capital gains tax and a lowering of the rate of corporate taxation, should boost the funding available for emerging enterprises at all stages of their development. This should reduce the need for Australian ideas to be taken overseas to be realised and facilitate growth in knowledge-based jobs.

At the same time, the Government wishes to maintain Australia’s performance in basic research and to ensure our universities remain places where creativity and discovery are fostered, and knowledge is valued for its own sake. To do other than this would not only undermine the fabric of our institutions, but may result in
research graduates who are lacking in the vision necessary for knowledge breakthroughs in all fields of endeavour. Australia needs talented researchers who can be the ideas powerhouses for the nation.

Public funding for research will reflect the critical role that governments play in supporting basic research and nurturing a research culture. Public funding will encourage and support excellence across the breadth of the research enterprise, especially through the competitive allocation of grants for individual investigator-initiated projects on the basis of peer review and through mechanisms which encourage and support collaboration when necessary.

1.6 Principles of public funding

The Government has adopted the following principles for the funding of higher education research and research training:

Excellence

Arrangements for allocating public funds should focus on the achievement of world-class research and research training to ensure that Australia develops and maintains high quality and innovative research which is respected in a global context. Flexible and responsive programmes should support the varied needs and opportunities of research. Institutions should be encouraged to concentrate their resources so as to build a critical mass in their areas of particular strength, thus providing the optimal conditions for maintaining research excellence over the long term. Individual researchers and research teams should have access to an environment that fosters excellent research.

Institutional autonomy and responsiveness

Institutions should be free to determine how they function and contribute to the generation, preservation, transmission and application of knowledge. They should be able to set their own priorities in terms of the research they choose to conduct and how it is conducted, as well as selecting those best suited to undertake research and research training. The research base should be diverse in terms of the fields in which research is undertaken, the settings in which it takes place and the perspectives that inform its conduct. Institutions should be able to increase their responsiveness to global market opportunities.

Student choice

Institutions should be responsive to the varying needs, interests and circumstances of students. Students should be able to make choices about where they undertake their research training, with whom they work and obtain supervision, what research they do while training, and the ways by which they undertake their research. They should be able to make informed decisions on the basis of publicly available
information on the range of institutional research environments available to them and be assured about their quality.

**Linkage and collaboration**

The policy framework should encourage and reward the development of an appropriately entrepreneurial culture in which researchers and the various institutions collaborate among themselves, across the world and with other players in the innovation system. Collaboration should encompass the sharing of knowledge, technique, expertise and research infrastructure and take varying forms, including cooperative projects and student and staff exchanges. Universities should have policies and structures in place to facilitate the commercialisation of discoveries, with particular regard to regional spin offs. Key among these is the development of an entrepreneurial culture among researchers.

**Transparency, contestability and accountability**

The processes for allocating funds for research and research training should be competitive in nature, as simple as possible to administer, and be readily intelligible to researchers, institutions, students and the wider community. All funding allocation decisions should be free from conflict of interest. The claims made by researchers and institutions regarding their performance should be open to scrutiny and verification. Taxpayers should be able to identify how public funds have been used and to what effect. The true costs of research and responsibility for meeting those costs should be apparent.

### 1.7 Conclusion

Clearly, there are many challenges ahead in achieving such a vision for research. This statement sets out the mechanisms by which this can be achieved, and sets the direction for higher education research and research training for the 21st century.
2. Competitive Research Schemes

2.1 An appropriate policy framework

*New Knowledge, New Opportunities* highlighted the need for a coherent policy framework for maximising the national returns to investment in research in Australian higher education. A basic premise of the discussion paper was that the research undertaken in Australian universities provides both private benefit and public good. Our universities and the researchers working within them should see themselves as active participants in national and regional development through the advancement of knowledge and its application to meet social needs through commercial means or public policy measures. The discussion paper proposed putting in place arrangements that would retain the strength of the higher education system in basic research while improving its contribution to the wider innovation system.

The Government confirms its commitment to the broad approach outlined in the discussion paper for sustaining national capability in basic research, strengthening the linkages between the different parts of the national innovation system, improving the management of research within higher education institutions and assuring the quality and effectiveness of the research training system. Changed arrangements for funding of research are designed to encourage a more strategic focus and to enable greater diversity of approach within the system. The Government believes this approach will ensure that Australia performs outstandingly in its chosen areas of research, and that the research effort is directed to areas where there are specific needs requiring attention at the national and/or regional level. This wider policy framework involves a broadening of public expectations of research with the potential for expanding the total national investment in research.

How the Government chooses to allocate the available resources, and to whom, becomes a critical factor in achieving the outcomes sought. The discussion paper proposed a dual system of funding for higher education research both to encourage institutions to be more flexible and responsive in developing a strategic portfolio of research activities and research training programmes, and to secure the benefits to be derived from the endeavours and achievements of individual researchers and teams.

Responses to the discussion paper endorsed this approach. There was strong support for a streamlined, comprehensive programme of peer-reviewed competitive grants administered by a restructured Australian Research Council (ARC), and a performance based system for block funding of universities for their research activities and to support the training of our next generation of researchers.
2.2 The role of the Australian Research Council

The Government is committed to the establishment of an independent and responsive ARC that is able to play a more strategic role in providing advice on the allocation of funding to researchers in the higher education sector and in other eligible research organisations to support the advancement of knowledge and maximise its contribution to the national innovation system. The Government wants to see the ARC further develop as a prestigious, nationally focused agency working effectively with members of the broad research community. In addition to its current advisory functions the Government sees the ARC contributing to national innovation by:

• helping to form and maintain effective linkages between the research sector and the business community, government organisations and the international community;

• developing and improving public understanding and appreciation of the contribution that research makes to the community; and

• reporting on the comparative performance of Australia with other research active countries and assessments of the national return on investment in research.

To this end the Government will establish the new ARC as an independent body within the Education Training and Youth Affairs (ETYA) portfolio supported by an Australian Research Council Act. The broad role and functions of the ARC proposed in the discussion paper were endorsed and will be incorporated in the new Act:

• an enhanced role in the provision of strategic advice to Government regarding research in the university sector;

• increased responsibility for the administration of research funding programmes for which funds will be appropriated under the new Act;

• a reformed governance and organisation structure reflecting the need to link university research with the innovation system;

• an enhanced capacity to identify and respond to emerging areas of research excellence; and

• an accountability framework emphasising transparency and performance.

The research community has largely welcomed the proposed reforms to the structure of the ARC and the administration of its new programmes. It was clear from the consultations on the discussion paper that Australian researchers are looking to the ARC for leadership. If it is to be effective in this role it is crucial that the ARC better reflect the diverse range of interests and perspectives necessary for a vibrant research system and internationally-competitive knowledge economy.

The Act will provide for a prominent member of the Australian community as a part-time chair of the Council. The person appointed to this position will be highly regarded in the research community.
The Chair will be supported by a Council membership which recognises that the research undertaken in our universities and other publicly-funded research institutions is an investment in the future economic and social well-being of the nation. The Act will therefore specify that the membership of the Council should reflect the breadth of academic, industry and community interests in the outcomes of research, including the Government perspective able to be brought by ex-officio participation of the Secretaries of the ETYA and Industry Science and Resources (ISR) portfolios.

The Council needs to be assisted by a well-qualified, professional secretariat able to support the Council’s strategic advisory and programme management functions. The appointment of the chief executive officer (CEO) will be critical to the success of the new ARC. The Act will set out the criteria for the Government’s appointment to this position to be filled by a person with a distinguished record in research and research management.

The CEO will be responsible to the Council, including for the day-to-day management of the ARC, the development of strategic policy advice for the consideration of the Council and proper and efficient administration of its programmes. The person appointed will therefore be required to have a demonstrated track record of policy development skills and management at a senior level, able to balance the potential conflicts of interest latent in the dual responsibilities of policy development and programme administration.

Another important reform to the ARC will be the appointment of programme managers. Programme managers, working with a part-time expert advisory committee, would be visiting researchers with experience in research management, appointed for up to three years and with responsibility for:

- overseeing the conduct of the peer review process;
- integrating the views of external reviewers with the views of the advisory committee;
- liaising and communicating with the research community and users of research;
- identifying emerging disciplinary and cross-disciplinary developments and innovative approaches to research; and
- conducting forums and reviews of the state of Australian research in an international context.

However, because of their central role in the assessment processes for the allocation of grants, a number of submissions noted the need for more detail to be provided on the criteria for selecting the programme managers. The ARC Act will require that the programme managers will be selected on the basis of the excellence of their own research track record and their international reputation as well as their administrative capabilities.

The programme managers will be supported by their own expert readership base, which will give recognition to and support for outstanding researchers individually and in teams. The readers will be selected from leading researchers in their field, including international experts. This will ensure that there is a stronger international
perspective in the judgments made and will go a long way to addressing long-held concerns in the sector about selection processes that, could sometimes, appear to be arbitrary.

2.3 A National Competitive Grants Programme

As part of the development of a new ARC, the Government will put in place a better focused, more coherent and flexible competitive grants programme that will avoid the duplication and fragmentation of effort that is characteristic of the current arrangements. The new National Competitive Grants Programme (NCGP) will have two elements, *Discovery* and *Linkage*. It will provide grants to individuals, teams and centres for investigator-initiated proposals through an open national competitive process. A *Centres of Excellence* scheme, modelled on the Canadian experience, will span the *Discovery* and *Linkage* elements to support research requiring significant national and international collaboration.

Properly developed and managed, the new NCGP will ensure that researchers in Australian universities are equally recognised for their contribution to basic research as to outcome or applied research, and for the close links that they establish between these approaches.

The *Discovery* element of the NCGP recognises the importance of Australia’s universities as major sources of fundamental research, dedicated to the creation of knowledge, within a wider framework that encourages links with users of the research.

The *Linkage* element of the NCGP addresses many of the current impediments to national and international collaboration necessary for Australian research to contribute to a strong and vibrant knowledge economy. It should ensure better collaboration with researchers in other universities and across the innovation system. The *Linkage* element should create opportunities for complementarity and synergies with related programmes across other Commonwealth portfolios, including the Cooperative Research Centres (CRC) and R&D Start programmes, the Rural Research and Development Corporations and National Health and Medical Research Council development grants. It should also include scope to facilitate international linkages both with universities and industry.

2.4 National and international facilities

For Australia’s research base to continue to meet our needs in a rapidly changing world, a framework is required that provides support for investment in research infrastructure of national or international significance. These facilities are generally of such a scale and cost that they are too expensive to be provided by any single research organisation and, in the case of very expensive facilities, by a single country. However, many different researchers and research organisations need access to them.

The Government believes that these facilities are most appropriately supported through collaboration involving consortia of research organisations, including
overseas collaborators in the case of major international facilities. It accepts the view put to it during the consultations that it is therefore important to retain an identifiable component of the Linkage element of the NCGP to encourage individual universities to share infrastructure and facilities.

2.5 Transparency and accountability mechanisms

Enhanced strategic and management responsibilities for the ARC require an enhanced and transparent planning and accountability framework. Accountability of the Council to Government, through the Minister, is paramount.

The Council will bring forward each year, for Ministerial approval, a three-year rolling plan that outlines the objectives to be achieved over the triennium. Within the context of this plan, the Council will continue to make recommendations to the Minister on the allocation of funding across and within the schemes referred to the ARC. The Minister will consult other portfolio Ministers regarding whole of Government perspectives on the objectives for these schemes and mechanisms for enhancing their integration with Government priorities.

The ARC will publish an Annual Report to be tabled in the Parliament. The Council will also publish regular reports on the comparative performance of Australia with other research active countries, emerging developments within and across fields of research, and measures of the national return on investment in research. The ARC will also develop and implement a communications strategy to increase community awareness of the importance of research and the benefits derived from it.

The ARC and the Department of Education, Training & Youth Affairs (DETYA) will regularly evaluate and review programme parameters to ensure they reflect the most cost-effective way of using resources and research capability in the national interest. In programme management it will apply new technology and will adjust programmes from time to time to meet new and emerging needs.

The Government expects that a reformed and restructured ARC will serve as a peak forum for a diverse range of interested parties, make policy and funding recommendations to the Minister and ensure that accountabilities and external links are being well served. In framing its advice, the Council will have regard to guidance provided by the Minister on the Government’s overall economic, social and cultural objectives.

2.6 A balanced approach

Much of the discussion in the consultations and in submissions focused on the mechanisms for ensuring a balance of research activities under the new NCGP. In particular, debate focused on four allied areas: the need to ensure that the proposed programme management structure in the ARC adequately reflects the importance of the humanities and social sciences, as well as basic and emerging (frequently cross-disciplinary) areas of research; the criteria and processes to be adopted for the assessment of grant applications and the conditions to be applied to grants; the
need to ensure the continued strength of basic research while encouraging more application-oriented research, in line with the greater emphasis placed on external linkages and collaboration; and the need to ensure smaller institutions would not be disadvantaged in a competition for a smaller number of larger value grants.

The Government believes that basic research serves as the foundation and catalyst to much commercial research and is a fundamental driver of innovation. The Government also recognises that our universities are the principal sites for basic research and that support for fundamental research must be sustained. At the same time, governments have responsibilities to address social needs in cost-effective ways. It is a legitimate expectation that public investment in research will pay social dividends through contributions to problem-solving as well as providing commercial opportunities.

Clearly there are tensions in the establishment of priorities for research. These are more acute in a context of budgetary restraint. We need to strike an appropriate balance in research funding among national needs, institutional capacities and individual interests. In doing this, the Government is establishing a dual funding system of competitive research grants for individuals and their teams, awarded on merit, and block funding to institutions to give them flexibility to adapt to new opportunities and to set their own priorities. There remains an ongoing need for dialogue between all players in the research system, informed by strategic advice from the research granting councils, on the capability of the sector and emerging research needs. Through this process, the Government will, at times, signal matters for priority attention.

Within this framework, the new ARC Act will provide the Minister with the power to give guidance to the ARC on the broad direction of its research activities within the context of the strategic planning process, including determining the balance between the elements of the NCGP in the allocation of grants. This will also address concerns that budgetary constraints could see the funding of basic research decline. Furthermore, it will ensure that the processes for competition for grants are transparent, and allow for participation by all institutions. The current balance between basic and applied research would be maintained for the time being.

The Government seeks to establish a streamlined process for assessment of ARC grants. This is necessary to ensure that grants go to applicants and projects of the highest quality cognisant of the international credibility of the Australian grants system. The programme management structure and the procedural reforms outlined in the discussion paper to the assessment processes for ARC grants will take time to develop and refine. The Government is keen to provide researchers as soon as possible with the advantages of funding predictability as a result of more frequent grant rounds, and the increased stability provided by five-year grants. The Government would like to see these approaches developed along with the new NCGP being introduced in 2001. This will ensure adequate time for the ARC to recruit high-calibre candidates to its programme manager positions and to restructure its operations in light of its more strategic role.

Meanwhile, the Government intends to proceed with the transfer of responsibilities for administration of the existing peer reviewed programmes from DETYA to the ARC with effect from the beginning of 2000.
3. Performance-based funding

3.1 Performance-based funding schemes

Performance-based block funding was proposed in the discussion paper to support institutional research and research training and received widespread support. The Government believes that this approach will best recognise and reward those institutions that provide high-quality research training environments and support excellent and diverse research activities.

Two new performance-based funding schemes will be introduced: an institutional grants scheme providing block funds for general research and research training infrastructure, and a scheme providing grants to institutions for research training scholarships.

3.2 Institutional Grants Scheme

The Government believes that institutions need the flexibility and autonomy to manage their own research activities and set their own priorities, and that this can best be provided through block grants. The Institutional Grants Scheme (IGS) will support the general fabric of institutions’ research and research training activities, and assist institutions in responding flexibly to their environment in accordance with their own strategic judgements. The new scheme will absorb the funding previously allocated for the Research Quantum and the Small Grants Scheme.

Funding under the IGS will be allocated on the basis of a formula that takes account of each institution’s success in attracting research students, in attracting research income from a diversity of sources, and in the quality and output of its research publications. The measures of research income and publications for each institution will be averaged over a two-year period to moderate the impact of variability between years.

The weights assigned to each element of the formula will be set at 60 per cent for research income, 30 per cent for research student numbers and 10 per cent for research output, in the form of a revised measure of publications and publication equivalents. The elements of the formula and their weights will be reviewed periodically, in consultation with the sector, on the basis of evaluations of their impact.

Research income

Research income reflects the capacity of an institution to undertake research. By including research income in the formula, recognition is given to the fact that institutions incur additional costs in undertaking research beyond the specific costs
of research projects. Under the current arrangements, income from the ARC and other national competitive grants attract a double weighting in the funding formulae. This feature provides institutions with a strong incentive to seek research income from competitive grants rather than other sources, such as industry.

The Government considers that the single best mechanism to encourage institutions to be more outwardly focused in their research— in regional, national and international terms—and more effective and active participants in the national innovation system, is to weight equally research income from all sources. While some individuals have suggested that this approach may devalue fundamental research, the Government believes that funding levels for fundamental research are better able to be preserved through the Government’s decision to provide guidance to the ARC on the balance between fundamental and more applied research.

For the purposes of the allocative formula, the following OECD definition will be used for research:

> Research and experimental development comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.¹

The current three categories for reporting research income will be retained, mainly. National Competitive Research Grants, Other Public Sector Competitive and Non-competitive Research Funding, and Industry and Other Funding for Research. The existing guidelines relating to those categories are retained. There will be no adjustments to include research-related activities leading to innovation, as this proposal in the discussion paper was not supported.

Donations and bequests dedicated for research will be included in sources of income.

**Research student numbers**

The inclusion of research student numbers in the formula recognises the general costs of sustaining quality research training environments beyond the specific tuition costs involved in student supervision. The formula will be sensitive to the size and composition of the research student body of an institution, weighted to reflect cost differentials associated with broad fields of research.

**Quality of research output**

The formula will also reward institutions on the basis of their quality of research outputs through the inclusion of an amended publications measure put forward by the Australian Vice-Chancellors’ Committee. The new measure will ensure that those in the arts, humanities and social science fields will receive equal recognition as those areas that can more readily attract research income from external sources.

A research output index will be developed for inclusion in the formula. This will include quality publications (refereed journal articles, books, book chapters and refereed conference papers), refereed designs, patents, and exhibited original works. The composition of the output index will be reviewed periodically in consultation with the sector.

Previous experience with research publications measures and associated audits of these has demonstrated the need to include a diversity of outputs while avoiding undue proliferation, and to verify their quality using academic rather than accounting criteria. The Government recognises both the importance of assuring quality in measures of research output and the complexity of such a task. A valid and reliable approach requires transparency and the exercise of informed judgement. The responsibility for verifying the quality of research outputs is best given to the academic community itself. Participating institutions will be asked to agree on the standards and criteria to be applied and to arrange appropriate verification processes.

The research outputs of each institution will be published annually as an appendix to its Research and Research Training Management Plan.

**Eligibility**

All institutions undertaking research and research training, including Bond University and the University of Notre Dame Australia, will be eligible to receive block funding from the IGS on the condition that they furnish an acceptable Research and Research Training Management Plan and are listed on the register of bodies for the Australian Qualifications Framework.

### 3.3 Funding for research training

Research training represents one of the most significant areas of national investment in research, and the provision of research training is an important distinguishing feature of universities. Research students are a major resource, underpinning much of the leading edge research conducted around the world, providing on-going renewal of the research and academic workforces and aiding in the transmission of knowledge and skills within and between the research and wider communities as a result of interpersonal networks.

The discussion paper identified some persistent concerns identified by students, research institutions and employers regarding the quality and breadth of research training including:

- research programmes that are too narrow, too specialised and too theoretical leading to graduates whose communication, interpersonal, and leadership skills require further development;
- a research training environment associated with poor supervision, inadequate levels of departmental support and limited access to quality infrastructure;
• a mismatch between the research priorities of the institution and the interests of students;
• limited opportunities for students to gain experience in appropriate research environments, which tends to promulgate a cultural gap between academic researchers and staff in industry; and
• high attrition rates and slow rates of completion for research students.

The discussion paper noted that much of the responsibility for reform of postgraduate training rests with institutions, particularly in relation to the design, relevance and quality of research training programmes.

The Government has decided that funding for research training will be allocated to higher education institutions through HECS-exempt scholarships on a performance basis. Institutions will allocate the scholarships to students undertaking PhDs or Research Masters courses. In recognition of the important contribution of research students to the national research and innovation system, students occupying a Commonwealth-funded place will not incur fees or be liable for HECS. The new arrangements will provide incentives to enhance the quality of research training provision in Australia, to improve the responsiveness of institutions to the needs of their students, to ensure the relevance of research degree programmes to labour market requirements and to improve the efficiency and effectiveness of research training.

As a further step in nurturing the development of the next generation of Australian researchers, the Government is committed to the expansion of opportunities at the postdoctoral level. The Government will seek advice from the ARC on the most effective mechanisms for achieving this.

Eligibility

The Government will allocate funds for research scholarships to institutions that are accredited and quality assured. Institutions will determine their student admissions and the internal allocation of research scholarships. Scholarships will be available for students who enrol in accredited courses of study leading towards a research higher degree. Such courses will include a minimum of two-thirds of their assessable content by research and the assessment processes will involve qualified examiners external to the institution.

Students admitted to doctoral programmes may occupy a scholarship for a maximum of four years of full-time equivalent study. For Masters students, the maximum period will be for two years full-time equivalent study. The time limit has received broad support from within the sector and recognises that the public requires a reasonable return on their investment in research training, through the timely completion of our research students. Once students complete or withdraw from their studies, those places will be available for reallocation to institutions through a performance-based funding formula. This will enable new students to take up research opportunities.

The number and composition of scholarships allocated to an institution will be determined with reference to the amount of funding allocated through the
performance-based formula, the institution’s plans (as of 1998) for research training places in 2000 and its plan for focusing its research and research training effort. Over time, this will enable institutions to vary their research training profile and offer research scholarships available on a field of study basis, in response to shifts in their strategic focus, research capacity and levels of student demand.

The value of research scholarships will reflect the relative costs of research supervision across broad fields of study. A review of the relative costs of teaching across fields and levels of study has been commissioned and the outcomes of the review will inform the relative value of research places from 2001.

The total number of research scholarships to be supported under the new policy framework attracted considerable comment during the consultation period. This issue has arisen because of a gap between the number of Commonwealth-funded research places (approximately 25,000) and the number of HECS-exempt research scholarships (21,500). Institutions have grown their research places above the number of scholarships they have been able to win. They have been able to attract additional postgraduate students by diverting funds from undergraduate places and offering research places on a HECS-liable basis, with the HECS costs absorbed by either the institution or the student.

Under the new framework, all Commonwealth-funded research places will be HECS-exempt. At the outset, the Government will maintain the current level of funding for total student places for each institution and, within that level, negotiate the number of research places with each institution. Institutions will be expected to meet that part of the cost of offering any gap research places on a HECS-exempt basis to all students they retain so that all students enrolled in 2000 and previous years can complete their courses on a HECS-exempt basis. All Commonwealth funded commencing students from 2001 will be offered HECS-exempt scholarships.

Performance-based allocative formula

In accordance with the views expressed during the consultation process, the Government has agreed that the formula for allocating funding for research scholarships should comprise three elements: numbers of all research students completing their degree; research capacity; and research output. The consultation process revealed general support for adopting research income as the most appropriate measure of research capacity and a modified publications index for research outputs. The definitions of these elements will be the same as those for the formula in the Institutional Grants Scheme.

The weights for each element will be set at 50 per cent for completions, 40 per cent for research income and 10 per cent for publications. All measures will be the average of each institution’s performance for the preceding two years.

The formula will be applied twice a year to adjust funding levels in response to the number of research students at an institution. This will mean that the maximum time that any institution may need to support a research student without a scholarship will be six months.
### 3.4 Research Infrastructure Block Grants

The Government has decided to retain the current Research Infrastructure Block Grants (RIBG) Scheme as a second block grant scheme, to fund research infrastructure. RIBG funding will remain allocated through performance-based block grants, rather than through individual research projects as suggested in the discussion paper. This approach will ensure that universities have the flexibility and capacity to manage their infrastructure requirements at the institutional level across all disciplines.

While the Government has agreed that research income from all sources should be equally weighted in the case of the IGS, it has decided to retain income from national competitive grants as the basis for allocating funds under the RIBG, recognising the significance of winning nationally competitive grants.

### 3.5 Contestability of funding for the Institute of Advanced Studies of The Australian National University

The Institute of Advanced Studies (IAS) of The Australian National University (ANU) has produced excellent research outcomes over a long period of time under a block-funding regime which is unique in the Australian setting. With the exception of Australian Postgraduate Awards and the Research Infrastructure Equipment and Facilities Programme, the IAS does not currently have access to other research funding programmes, and research input from the IAS is not counted for the purposes of the allocative formulae which drives the Research Quantum. These restrictions limit access by research students to an excellent research training environment, while the isolation of the IAS researchers from the competitive system increasingly operates to the detriment of the research sector as a whole.

After consultation with the ANU, the Government and the University have agreed that the IAS should have access to both the new competitive and formula driven research and research training schemes, in exchange for making a portion of the IAS block grant contestable. This will ensure that postgraduate research students will have full access to the excellent research and research training environment at the IAS. It will also enable researchers at the IAS to collaborate more fully with the national innovation system and sustain long-term basic research.

In order to enable the IAS to gain access to the new research schemes, the ANU will contribute approximately 20 per cent of the IAS block grant for research, according to an agreed formula, to the ARC’s National Competitive Grants Programme and to the Institutional Grants Scheme. In order to enable the higher education research system as a whole to adjust to the entry of the IAS the Government will phase in these arrangements over a four-year period.
4. Regional support

4.1 Overview

The discussion paper acknowledged that higher education institutions play a vital economic, social and cultural role in their local communities, generating a wide range of employment options and contributing to the development of regional Australia. It also acknowledged that, in responding to the new policy and funding framework, many institutions may need to reassess and refocus their research activities. In recognition that the proposed framework would impact on institutions in different ways, an adjustment package was foreshadowed in the discussion paper to assist the transition.

Consultations also highlighted the opportunities for regional institutions, and indeed universities generally, to make a stronger contribution to sustainable regional development. By focusing on their areas of research strength and improving their linkages with industry in the regions, as well as their local communities, universities are in a unique position to transfer knowledge and skills into initiatives for economic growth, environmental improvement and community development. The Government is keen to facilitate this outcome.

During the consultations, some regional institutions in particular indicated that they would benefit from an on-going programme targeted to address regional issues, based on competitive application.

The allocative formulae proposed in this statement will ensure that any initial adverse impacts on institutions are minimised. In addition, winners have been capped at five per cent. Whilst future funding will be determined on the basis of each institution's performance, the Government will ensure a heightened attention to research of benefit to regional Australia, and will also ensure that no regional institution will suffer a deterioration in its research funding, from its starting position, in the first three years of the new arrangements. To achieve this, a comprehensive package of support for regional institutions has been developed.

4.2 Regional package

The regional package will assist universities to develop regional connections, foster a shift towards a more entrepreneurial framework, concentrate research activity into areas of strength, and assist institutions to take advantage of opportunities presented through new fields of research. Key elements of the package are:

- $10 million for a collaborative research programme on issues of benefit to regional and rural communities; and
• $6 million over three years to ensure no regional institution suffers a deterioration in its research funding from its starting position.

This is further supported through the other elements of reform in this statement:

• maintenance of the balance between basic and applied research through the ARC’s competitive schemes in the interim period;
• allocation of student places through a block fund, according to a performance-based formula; and
• a quality verification framework to help all institutions demonstrate and focus their research activities.

Many universities are engaged closely in the social and economic development of their communities and a number of major metropolitan universities with regional campuses are also benefiting from initiatives that integrate their research strengths with their regional locations. This approach can assist in revitalising many rural and regional communities.

Within current budgetary restraints, it is proposed that the current balance between basic and applied research through the ARC’s competitive schemes be maintained, with the current average grant size also to be retained for the time being. The consultations demonstrated concern that any change to the programme balance, or to increase grant sizes without making further funding available, may impact adversely on smaller and regional institutions.

### 4.3 Response to incentives

The new structure of incentives will enable regional institutions to build up their capacity in particular fields and improve their contribution to the needs of regional communities. This is already taking place at a number of regional institutions. Some excellent examples are Southern Cross University, Charles Sturt University, Central Queensland University and The University of New England. These institutions have already begun the process of prioritising their research activity.

Some regional institutions, such as the University of Tasmania, have already put in place a strategy to capitalise on their research strengths and link to their regions. The University of New England is withdrawing from fields where their research performance has been declining to build up those areas where it will be competitive. Others will have particular strengths and circumstances that improve their performance; for instance, James Cook University’s addition of a medical school will significantly expand its research income and research training capacity.

### 4.4 Regional fund

As the first component of the regional package, a dedicated element of the ARC’s grants programme will operate as an on-going scheme to address issues of concern and direct benefit to regional and rural areas. It will form part of the current Strategic Partnerships with Industry Research and Training (SPIRT) scheme,
which assists institutions to link with industry in conducting research. Ten million dollars from this scheme (20 per cent of the current budget of $50 million) will be earmarked, on a competitive basis, to support research on issues of benefit to rural and regional communities. Amended SPIRT guidelines will be issued shortly to enable applications in 2000 for funding allocations to be made in 2001.

Assessment would be peer-reviewed through the processes managed by the ARC. The initiative would be for access by institutions, individually or in collaboration with other institutions, to support research into rural and regional issues. Research projects funded under this scheme would need to be consistent with the Government’s regional priorities.

Institutions will be further supported by a $6 million fund to enable regional institutions in need of assistance to adapt to the new arrangements. The fund will ensure that no regional institution suffers a deterioration in its research funding, from its starting position, in the first three years of the new arrangements. The $6 million will be set aside to be available for a fund which could be drawn upon over the three-year transitional period 2000–2002. The fund will be available to the following universities:

- Charles Sturt University
- Southern Cross University
- The University of New England
- The 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
- Northern Territory University

This assistance would be negotiated as required as part of the annual profiles process with institutions on their student places and funding levels. Regional institutions would receive a top up each year of the transition period as required, to the level of Government funding for research they would otherwise have received under the existing arrangements. The funds are intended to be used by institutions in strengthening their research focus. The funds would provide funding stability to regional institutions, and link research activity to the needs of regional communities.
4.5 Regional outcomes

It is anticipated that this package will assist universities to further enhance their research strengths and develop new strengths. It will enable institutions to integrate their existing strengths into a broader regional research strategy, as well as fostering collaboration between universities, industry and regional bodies.

Through these mechanisms, universities will complement and enhance their existing initiatives in supporting regional and rural Australia, develop new research strengths, integrate their existing research activities into a broader regional research strategy and increase collaboration with other institutions, industry and regional bodies.

Before the end of the three-year transitional funding period, the impact of the reforms on regional institutions and communities will be evaluated to assess how well the anticipated benefits have been realised. Further Government action will be influenced by the outcomes of the review. Consideration will be given to extending the availability of assistance beyond the initial three-year period if regional universities were to face difficulties if funding were to be discontinued.
5. Accountability and quality assurance

5.1 Overview
Enhanced accountability for the expenditure of public funds and quality assurance mechanisms will be important features of the Government's new framework. This approach is consistent with the Government's commitment to strengthening the international competitiveness of our higher education institutions while reducing regulation and intervention in universities' activities.

5.2 Institutional planning and reporting
The discussion paper identified the need for increased transparency in the setting and reporting of institutions' goals for research and research training and highlighted the importance of adopting a more strategic approach to the management of these activities. Universities currently do not have to report publicly on their plans for the use of public funding for research and research training, nor on the measures they use for assessing their success in achieving those goals.

The discussion paper sought to facilitate institutional planning and goal setting by requiring a Research and Research Training Management Plan from each institution seeking Government funding for its research activities. The plans would be published and provide a snapshot of the way each institution directs its research efforts, its areas of strength, and how it performs in those areas. They would provide an overview of each institution's distinctive contribution to the national research and innovation systems and inform prospective students, collaborative research partners and industry, as to the way each institution has chosen to direct its research and research training activities.

There has been universal support for this element of the reforms, and indeed, many institutions already have research plans along the lines envisaged in the discussion paper. Those institutions which have already chosen to focus their research activities in line with institutional goals, and already have them clearly articulated, should be well placed under the new arrangements. Indeed, this process will help to give greater public disclosure to research strengths within institutions that are otherwise poorly recognised.

The process is not intended to be a prescriptive one, and the Government will not be seeking to conduct detailed audits of the Research and Research Training Management Plans. Rather, the process will provide for an on-going dialogue with institutions on accountability for public funds and provide a benchmark for the verification and assurance of the quality of research and research training at the
national level (see below). The emphasis will be on the strategies institutions propose to manage their research and research training activities, and their success against those strategies.

Core elements that institutions are expected to report on in their research plans include:

- the operating environment for research and research training, including the institution’s human and physical resources, and areas of research strength;
- proposed future directions for research and research training and how these link to the university’s strategic plan;
- arrangements for ensuring a quality research training experience for research students;
- collaboration with other institutions, industry and other bodies;
- management of commercialisation, intellectual property and contractual arrangements;
- quality assurance mechanisms for self-assessment;
- a review of recent past research performance;
- graduate outcomes both in terms of attributes and employment; and
- research active members of staff and their research outputs and achievements.

The last point will be important in ensuring institutions’ research claims have a strong grounding in the activities and performance of their staff. The outputs and achievements could include researchers’ top publications or exhibited works, success in attracting external funding, commercialisation activities, and recognition through winning prominent prizes, awards, or appointments. This approach will provide a transparent and accountable mechanism whereby institutions publicly identify the breadth and depth of their research strengths.

5.3 External quality verification

In a world in which geographic barriers to the provision of education and research are breaking down, the reputation and quality of universities, both individually, and collectively at the national level, becomes critical. Universities and governments around the globe have embraced a wide range of approaches to assure the quality of their teaching and research activities. In Australia, many institutions formally evaluate their programmes through external assessment involving academic peers and industry representatives. All institutions seek feedback through mechanisms such as the Course Experience Questionnaire and the Graduate Destination Survey. Many universities are benchmarking their research capabilities and outputs with those of comparable institutions and some are participating in national and international networks. At the national level, each university prepares an annual quality assurance and improvement plan covering their teaching, research and other activities. The Government publishes these plans annually.
The issue of verifying the quality of research and research training supported by the Institutional Grants and research-training schemes attracted considerable comment during the consultation period following the release of the discussion paper. After considering a range of alternative approaches designed to strengthen the research quality framework, the Government has developed a multi-faceted approach that draws on the best features of each model. In developing its framework for quality verification, the Government has been guided by the following principles:

- rigour, credibility and transparency;
- minimal intrusion in the activities of institutions;
- ability to treat all fields of research, including interdisciplinary, cross-disciplinary, collaborative and emerging fields of research, in a fair and consistent manner;
- responsiveness to the interests and concerns of the broader community, including the national innovation system;
- a high degree of efficiency for both the Government and universities; and
- consistency with the Government's broad framework for quality assurance in higher education.

The first element of the Government's approach to quality assurance is the inclusion of objective output measures in the mechanisms to allocate funds to institutions. A modified publications index will be incorporated in the formulae to allocate funds under the Institutional Block Grants and research training schemes. This will be supplemented by the decision to retain the Research Infrastructure Block Grants scheme as a separate programme, with funding allocations dependent upon institutions' success in attracting national competitive grants. Together, these measures ensure that each of the performance-based funding schemes will directly acknowledge and reward high quality research.

These objective measures will be backed up by an approach involving a more subjective verification of research quality under the new quality assurance framework being developed for higher education. The Government recently announced the establishment of, in cooperation with State and Territory governments, an independent Australian University Quality Agency to audit the quality of higher education institutions.

Under this framework, the new Agency will review claims made by universities concerning their teaching and research performance. The Agency will adopt a whole-of-institution focus in verifying such claims. Research and research training will be reviewed by the Agency as part of this process, which will verify the claims made by institutions in their Research and Research Training Management Plans. If the process were to highlight areas where an institution's claims could not be substantiated, a more in-depth assessment of its research and research training activity would be conducted. In this case the Agency will establish, as necessary, independent expert panels drawn from nominees of institutions, the ARC, the National Health and Medical Research Council, the Learned Academies, research users and Government.
The results of the verification process will be reported by the national Agency, which will publish the findings to aid transparency and accountability. It is not the Government's intention to directly link the outcomes of this process with funding levels. However, if in the course of this process an institution is found wanting and has failed to demonstrate that it can improve its performance in a reasonable time, the Government may determine that it forfeits its eligibility for public funding for teaching and/or research training activities. Research granting agencies may have regard to reports of the quality assessments but will retain the discretion to consider the merits of individual and team applications for grants.

The Government will consult widely to develop the processes for implementing this approach.
6. Conclusion

Australia’s higher education institutions have an important role to play in the knowledge economy of the 21st century. Through basic research, institutions provide the foundations which underpin the nation’s social, cultural and technological progress. As significant players in the innovation system, institutions collaborate with industry to find solutions to complex problems. Through the provision of research training, they prepare Australia’s future researchers, and transfer skills and knowledge for the benefit of the broader community.

By moving to a performance-based system of funding for research and research training, the Government will provide the incentives for institutions to best perform these functions. Institutions will be rewarded for performing research of an excellent quality, as well as being encouraged to increase their collaboration with industry. They will be rewarded for the quality of their research training environments and for ensuring that students complete their degrees.

These incentives will be provided in an environment that respects the autonomy of institutions to determine their areas of strength and the best way to manage their research.

The enhancements to the ARC will ensure that individual researchers and their teams will continue to have their excellent research proposals assessed by their peers, whilst giving the ARC a more strategic focus.

The introduction of an external quality verification framework and the publication of Research and Research Training Management Plans provide the platform for Australian institutions to demonstrate that the research and research training they do is of a high international standard.

The importance of our regional institutions in their local communities will continue to be supported by the Government and with the introduction of funding dedicated for rural and regional research, higher education institutions will strengthen the social and economic development of these communities. This ensures that all Australians will benefit from our interaction with the global knowledge economy.

Every institution has an important role to play within the national innovation system. Their expertise in different fields, their relationships with their regions and their interaction with industry are an integral part of Australia’s cultural, economic and social development. The Government believes that this new framework for research and research training, based on principles of excellence, autonomy, student choice, collaboration and accountability, will provide the tools for institutions to fulfil their role.