

Industry, Science and Tourism

# Science a vision for excellence

**A Vision for Excellence** - commits the Coalition to strengthen Australia's scientific infrastructure, to build greater awareness of the importance of science and technology in our daily lives and to encourage improved links between science and industry.

## Science - A Vision for Excellence

### Table of Contents

Executive Summary [\\*](#)

Labor's Record [\\*](#)

Highlights of the Government's Achievements [\\*](#)

A A Commitment to Science [\\*](#)

B Encouraging Innovation [\\*](#)

C Promoting Awareness [\\*](#)

A Vision for Excellence [\\*](#)

## Part 1 – Investing in Innovation and Knowledge [\\*](#)

### A Setting the Agenda [\\*](#)

### B Responding to Technological Change [\\*](#)

#### (i) New Science Lectureships [\\*](#)

### C Strengthening links [\\*](#)

#### (i) Strategic Partnerships - Industry Research and Training [\\*](#)

#### (ii) Commonwealth Technology Park, Melbourne [\\*](#)

## Part 2 – Stronger Infrastructure [\\*](#)

### A Better Planning and Coordination [\\*](#)

### B Strengthening Our Research Capability [\\*](#)

#### (i) Research Infrastructure [\\*](#)

#### (ii) High Performance Computing [\\*](#)

#### (iii) Marine Science Centre [\\*](#)

#### (iv) Institute of Molecular Bioscience [\\*](#)

#### (v) National Centre for Tropical Wetland Research [\\*](#)

#### (vi) New Energy Technologies [\\*](#)

## Executive Summary

- The Coalition understands the importance of science and technology to Australia's future.
- We have established an environment in which Australian science, technology and engineering can flourish.
- The *Prime Minister's Science, Engineering and Innovation Council* has been established to provide advice at the highest level of Government on future directions for science policy.

- The Coalition will provide \$25 million over three years to establish new *Science Lectureships* in areas such as information technology and biotechnology.
- The Coalition will increase funding for university research infrastructure by \$90.5 million over three years.
- The Coalition will increase funding for the *Strategic Partnerships - Industry Research and Training Program* by \$58.1 million over three years.
- The Coalition will provide \$19.5 million to establish a *High Performance Computing* network to ensure that Australian research and industry can remain at the cutting edge of knowledge.
- Recognising the increasing importance of marine science for the management and use of marine resources, the Coalition will provide \$12 million to establish a new marine science research and teaching centre at Coffs Harbour.
- Australia's research capabilities in biotechnology will be strengthened through funding of \$15 million toward the establishment of an *Institute for Molecular Bioscience* at the University of Queensland.
- Australia's tropical wetlands are a unique heritage and an environmental resource. The Coalition will provide \$5 million toward the establishment of a *National Centre for Tropical Wetland Research* at the Northern Territory University.
- The Coalition will sponsor a *National Innovation Summit* in 1999 to strengthen Australia's national system of innovation.
- The Coalition will provide \$22.5 million to assist the establishment of the *Commonwealth Technology Park* in the Melbourne Docklands.

## **Labor's Record**

During its thirteen years in Government, Labor neglected Australian science and technology.

Labor was responsible for a run-down in our scientific infrastructure.

For example, the Boston Consulting Group in 1996 estimated that an

additional \$125 million per year would be required to restore our science infrastructure to an internationally competitive level.

Under Labor, the Commonwealth Scientific and Industrial Research Organisation's annual budget was cut by \$20 million.

Labor failed to develop a coherent science policy, and failed to integrate science, industry and economic policies to sustain scientific excellence and to benefit all Australians.

Labor's policies for innovation were not effective and did not target genuine research and development.

Labor failed to stamp out rorting of its research and development Syndication scheme.

**Australian science can't afford a return to Labor's failed policies of the past.**

## **Highlights of the Government's Achievements**

### **A A Commitment to Science**

- The Coalition believes that a strong investment in science and technology is vital to achieve higher living standards for all Australians.
- The Coalition has developed an integrated framework for science and technology policy to provide increased priority and recognition for Australian science.
- The Coalition has committed more than \$3.7 billion for science and technology this financial year, an increase of \$90 million.
- The Coalition has restored \$20 million to the base funding for the Commonwealth Scientific and Industrial Research Organisation.
- The Coalition has provided \$11.5 million for a major refurbishment of the Australian Institute of Marine Science, improving facilities and upgrading its research fleet.
- The Coalition has supported a \$306 million replacement for the Australian Nuclear Science and Technology Organisation's research reactor.
- Funding for Higher Education Research through the Australian

Research Council and related programs was \$450 million last year, a 20 per cent real increase on funding under Labor.

- The Coalition has increased funding for the Australian Antarctic Division by 6 per cent to \$63 million.
- The Coalition has provided funding of \$160 million in 1998-99 to the rural research councils and the Bureau of Resource Sciences.
- The Coalition has boosted funding for medical and health research, increasing the National Health and Medical Research Council budget by 10 per cent to \$175 million and expanding other health R&D by almost 40 per cent.
- The Coalition has provided \$13.5 million to support Australian involvement in a major new international astronomy project. Australian astronomers will join with partner agencies in the US, UK, Canada, Chile, Argentina and Brazil to build two new generation telescopes - one in Chile and one in Hawaii.
- The new headquarters for the Australian Geological Survey Office, the largest geoscience organisation in Australia, has been opened at a cost of \$110 million. The new world class facility includes 30 laboratories and houses 500 staff.
- The National Greenhouse Research Program provides the national level focus and direction for greenhouse research. The Coalition Government has provided \$13.7 million over 1996-2000 to support the work of this program.

## **B Encouraging Innovation**

- Cooperative Research Centres have become a driving force for innovation and change in Australian research. The Coalition has maintained funding for Cooperative Research Centres, refocussing the program to improve science and industry links and achieve greater levels of commercialisation.
- The Coalition has funded 50 additional Australian Postgraduate Awards (Industry) to enhance opportunities for research students to undertake projects in collaboration with Australian companies.
- We have provided funding of \$739 million over four years through the *R&D Start* program to encourage leading edge research and

development. The expanded *R&D Start* program complements the 125 per cent research and development tax concession, already one of the most generous such concessions in the OECD.

- Technology diffusion enhances access by Australian industry to new technologies developed in Australia and overseas. The Coalition Government launched a new Technology Diffusion Program with funding of \$72 million over four years.
- The Coalition has established the Renewable Energy Industry Program and provided \$30 million to the Renewable Energy Commercialisation Grants Program.

## **C Promoting Awareness**

- The Prime Minister's Science, Engineering and Innovation Council was established to ensure science matters receive attention at the highest levels of the Government.
- The Coalition provided almost \$8 million to the National Science and Technology Centre this year to stimulate public awareness, understanding and interest in science and technology.
- The Science and Technology Awareness Program has been revitalised with \$12 million of funding over the next three years. Through this program the Government provides support to the Australia Prize and a range of other initiatives.

# **A Vision for Excellence**

## **Part 1 – Investing in Innovation and Knowledge**

### **A Setting the Agenda**

There is a strong linkage between advances in living standards and the ability of an economy to harness advances in knowledge.

The extent to which this occurs in Australia is governed by our *national system of innovation*. This encompasses the linkages between individual firms, research and educational institutions, government support mechanisms and industry.

Australia has strengths in many of the elements of an effective national system of innovation.

Australia's education system is internationally renowned.

We have a strong research base underpinned by world-class tertiary institutions and public sector research agencies like the Commonwealth Scientific and Industrial Research Organisation.

Australia has a strong and effective intellectual property system.

Despite these strengths, there are a number of areas where an increased focus is required, including:

- the level of spending on research and development by business;
- the ability of smaller companies to commercialise research outputs is often constrained by lack of capital and necessary expertise; and
- the rate of uptake of leading-edge technology by Australian firms, particularly small and medium sized enterprises, is less rapid than in many other leading industrialised nations.

A detailed stocktake and evaluation of Australia's national system of innovation is required if we are to set the agenda for the future and develop policies to promote stronger science and innovation and higher living standards.

- The Coalition will jointly sponsor a *National Innovation Summit* to be conducted in the first half of 1999.
- The summit will bring together representatives from Government, industry, academia and public sector research institutions to develop a strategy to strengthen Australia's national system of innovation.

## **B Responding to Technological Change**

Australia is increasingly a knowledge-based economy. The level and quality of our investments in research and education and the effectiveness of our institutions for developing, transferring and applying knowledge will become increasingly vital for sustained economic growth.

New technologies such as information technology and biotechnology

are having major impacts throughout the economy. New industries and new technologies create the need for new knowledge and new skills.

The Coalition has strongly supported the expansion of industry - linked postgraduate training opportunities in our universities, through the extension of the Cooperative Research Centres Program and the expansion of the Australian Postgraduate (Industry) awards.

### **(i) New Science Lectureships**

The Coalition will provide \$25 million over three years to enable universities to respond quickly and effectively to the changing demand for new under-graduate and post-graduate courses. We will establish new lectureships in vital areas of science, engineering, technology and management. The program will encourage close cooperation between universities and industry in the design and delivery of courses.

## **C Strengthening links**

The Coalition has led long overdue change in the research system to build cooperation between research organisations and users. The reform of the Cooperative Research Centres Program and the development of CSIRO's Sectoral Advisory Committees strengthened links between research and industry.

The Coalition will continue these important reforms. We will convene a Forum on Research Commercialisation within the first 6 months of Government. The Coalition will also continue to support initiatives that strengthen research-industry links in Australia.

### **(i) Strategic Partnerships - Industry Research and Training**

Collaboration between universities and industry expands Australia's knowledge base and generates wealth. The Strategic Partnerships - Industry Research and Training scheme aims to improve collaboration by supporting combined university-industry projects and providing awards and fellowships for training and research to occur in industry. Industry provides matching grants. Funding for this program will be increased by \$58.1 million over the next three years.

### **(ii) Commonwealth Technology Park, Melbourne**

The Coalition Government will provide \$22.5 million to fund the development of a world class science and technology park in the



Melbourne Docklands. The park will be a major focus for industrial research and is likely to generate \$400 million in new investment over the next 10 years.

## **Part 2 – Stronger Infrastructure**

### **A Better Planning and Coordination**

- The Coalition has established the Prime Minister’s Science Engineering and Innovation Council to provide advice at the most senior levels of Government on issues affecting science, engineering and innovation. The Council has responsibility to provide advice on future needs and directions for Australia’s science and technology infrastructure.
- In particular, the Council has been evaluating opportunities for Australian participation in key new international scientific research facilities, including:
  - The proposed \$1 billion One Kilometre Square Radio-telescope to open new frontiers of astronomy, and for which Australia would provide an ideal location.
  - The Global Biodiversity Information Facility to provide the core for international storage and exchange of biodiversity and genome information.
- The Coalition will draw on the advice of the Council to ensure effective planning and coordination in developing priorities for investment in science infrastructure.

### **B Strengthening Our Research Capability**

The Coalition will strengthen the research capacities of our universities and institutes.

#### **(i) Research Infrastructure**

Research infrastructure underpins Australia's strong research performance. Under Labor the ratio of project-related infrastructure grants to direct research funding was inadequate. The Coalition has strengthened our research infrastructure doubling this ratio.

In our next term we will build on this achievement, boosting infrastructure spending by \$90.5 million over the next three years.

## **(ii) High Performance Computing**

- Access to high performance computing is necessary for a number of important areas of research.

The Coalition will establish an Australian Partnership for Advanced Computing. This Partnership will comprise higher education institutions and representatives of industry. The Partnership will acquire the peak capacity needed for high performance computing infrastructure. It will conduct three broad programs in education, industry diffusion and research. Its goal will be to get Australia into the top ten countries in the use of high performance computing technology.

- The Coalition will spend \$19.5 million to establish a unified national high performance computing infrastructure.

## **(iii) Marine Science Centre**

Australia has vast maritime resources. New technologies and markets open increasing opportunities for the commercial development of these resources.

The Coalition will continue to improve our understanding of the oceans and our capacities to use and manage our maritime resources responsibly.

The Coalition will provide \$12 million to establish a new marine science research and teaching centre at Coffs Harbour, NSW.

The University of New England and the Southern Cross University will jointly manage the new centre.

This world class centre will support marine environment, fisheries and tourism research and education in this area of diverse tropical and temperate marine environments.

## **(iv) Institute of Molecular Bioscience**

Advances occurring in biotechnology will make it a key source of economic growth and employment. Biotechnology will have major impacts on agriculture, medicine, the pharmaceutical industry, food processing and environmental management.

The Coalition will provide \$15 million for the establishment of a new

Institute of Molecular Bioscience at the University of Queensland.

The Institute will enhance opportunities for major new discoveries and commercial ventures in the biomedical, agricultural and other biotechnology fields. It will combine five existing research facilities and enable close cooperation between the University and CSIRO.

The Institute will house the Queensland node of the new Australian National Genome Research Facility.

It will also include incubator facilities for commercial 'spin off' ventures arising from its research.

### **(v) National Centre for Tropical Wetland Research**

Australia's tropical wetlands are a unique heritage and an environmental resource. Their effective management is vital.

The Coalition Government will provide a grant of \$5 million to support the establishment of a National Centre for Tropical Wetland Research at the Northern Territory University in Darwin.

The Coalition will also explore the option of establishing, jointly with the Northern Territory Government, a Northern Australian Agriculture and Horticulture Research Centre to support the rapid growth of high value crop production in the region.

### **(vi) New Energy Technologies**

The Coalition has provided \$30 million funding for renewable energy development and also funded the Cooperative Research Centre for Renewable Energy.

The Coalition supports CSIRO's plans to establish a new energy research centre to assist in implementation of the Kyoto Agreement on Greenhouse Gases.

The Centre will focus on reducing the environmental impact of the use of fossil fuels. It will also undertake major work in the field of renewable energy technology development.