Chapter Twenty-four

Science and Technology

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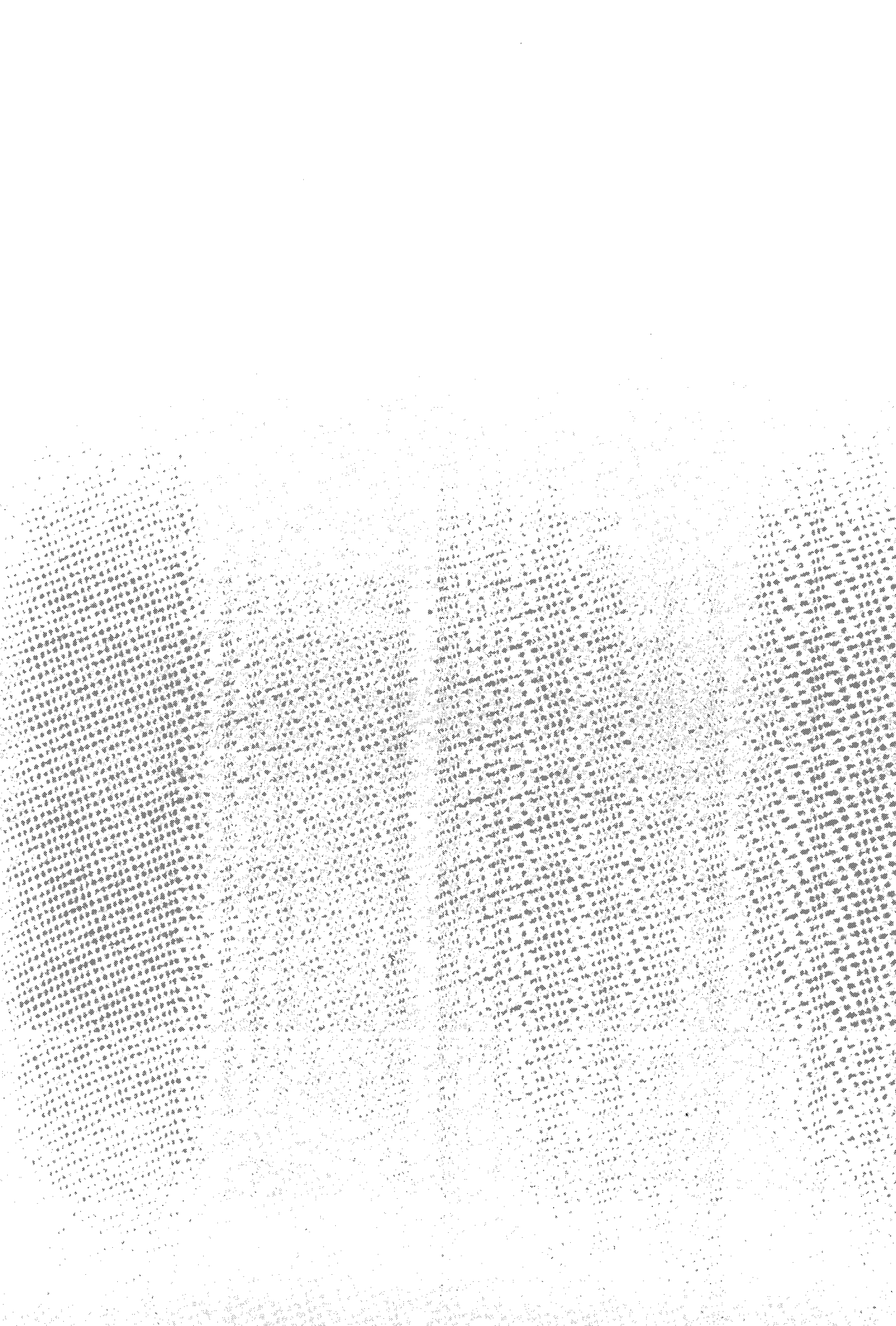

Science and technology directly influence the strength and competitiveness of industry by providing a basis for technological change and thereby encouraging economic growth and development. They can be seen as making major contributions to the achievement of many of Australia's social, economic and industrial goals.

OFFICIAL ORGANISATIONS AND ADMINISTRATION

The Department of Industry, Technology and Commerce (DITAC)

There are many organisations in Australia concerned in some way with the development of science and technology in Australia.

The Commonwealth Government's conviction of the importance of science and technology is reflected in the functions of the Department of Industry, Technology and Commerce. Apart from having general responsibility for science and technology, the Department is concerned with the development and maintenance of Australia's scientific and technological capability.

The main scientific and technological bodies and activities of the portfolio include the Commonwealth Scientific and Industrial Research Organisation, the Australian Nuclear Science and Technology Organisation, and the 150 per cent tax concession for research and development (R&D), which are described below. Details of others, such as R&D grants and assistance schemes; the Patent, Trade Marks and Design Office; the Snowy Mountains Engineering Corporation; the Commission for the Future; The Australian Space Office; and the National Standards Commission, were contained in *Year Book Australia 1991*.

A number of other Commonwealth government organisations either support or carry out scientific and technological activities. State Governments are also involved in science and technology via State government departments, science and technology councils and other organisations. Non-government organisations participating in scientific and technological activities include higher education institutions, professional and learned bodies, private organisations and industry groups. *See Year Book Australia 1991*.

The Commonwealth Scientific and Industrial Research Organisation (CSIRO)

CSIRO was established as an independent statutory authority by the *Science and Industry Research Act 1949*. The Act has been amended on a number of occasions since then, including in 1978, following the government-instigated 'Birch Committee of Inquiry' and in November 1986, following the 'Review of Public Investment in Research and Development in Australia', specifically including CSIRO, carried out by the Australian Science and Technology Council (ASTEC).

The 1986 amendments to the Act confirm that CSIRO's primary role is to continue as an applications-oriented research organisation in support of major industry sectors and selected areas of community interest, but with a stronger commitment to the effective transfer of its results to users. The most recent amendments have also included changes to the top management structure and the organisation's advisory mechanisms.

Briefly, CSIRO's primary statutory functions are to:

- carry out scientific research for the benefit of Australian industry, the community, national objectives, national or international responsibilities, or for any other purpose determined by the Minister; and
- encourage or facilitate the application or utilisation of the results of such research.

Other functions include dissemination and publication of scientific information, international liaison in scientific matters, and provision of services and facilities.

The research work of the organisation is carried out in Institutes, each headed by a Director and each specifically established to undertake work in support of industry or community interest sectors of the Australian economy. Institutes are composed of Divisions, which are individually responsible for broad programs of research in support of the objectives of the Institute.

Institute of Information, Science and Engineering: Divisions of Information Technology; Radiophysics; Mathematics and Statistics; CSIRO Office of Space Science and Applications; Australia Telescope.

Institute of Industrial Technologies: Divisions of Manufacturing Technology; Materials Science and Technology; Applied Physics; Chemicals and Polymers; Biomolecular Engineering.

Institute of Minerals, Energy and Construction: Divisions of Building, Construction and Energy (now incorporates National Building Technology Centre); Exploration Geoscience; Mineral and Process Engineering; Mineral Products; Coal and Energy Technology; Geomechanics.

Institute of Animal Production and Processing: Divisions of Animal Health; Animal Production; Wool Technology; Tropical Animal Production; Food Processing; Human Nutrition.

Institute of Plant Production and Processing: Divisions of Plant Industry; Tropical Crops and Pastures; Horticulture; Entomology; Soils; Forestry and Forest Products.

Institute of Natural Resources and Environment: Divisions of Water Resources; Fisheries; Oceanography; Atmospheric Research; Wildlife and Ecology; Centre for Environmental Mechanics.

CSIRO has a total staff of more than 7,000 in more than 100 locations throughout Australia. About one-third of the staff are professional scientists, with the others providing technical, administrative or other support. CSIRO's budget for 1989–90 was $571 million.

The Australian Nuclear Science and Technology Organisation (ANSTO)

ANSTO was established as a statutory authority under the *Australian Nuclear Science and Technology Organisation Act Number 3 of 1987*, and replaced the Australian Atomic Energy Commission. Its mission is to benefit the Australian community by the development and peaceful application of nuclear science and technology in industry, medicine, agriculture, science and other fields.

Tax Concession for Research and Development

The 150 per cent tax concession for Research and Development (R&D) which commenced from July 1985 is the major program in the Government's package of measures to encourage R&D in Australia. The concession is broad based, being available to the majority of companies undertaking R&D in Australia. The concession is market driven, being structured in a manner which is neither industry nor product oriented, allowing individual companies to determine both the specific area of innovation and direction of their R&D activities.

The Prime Minister's March 1991 Industry Statement announced the Government's decision to retain an R&D tax concession as a permanent feature of the taxation system. The program will continue at 150 per cent until 30 June 1993 after which it will remain at 125 per cent.

At present the concession allows companies incorporated in Australia, public trading trusts and partnerships of eligible companies to deduct up to 150 per cent of eligible expenditure incurred on R&D activities when lodging their corporate tax return. This effectively reduces the after tax cost of R&D to about 41.5 cents in the dollar at the 39 per cent corporate tax rate.

Expenditure eligible under the concession at 150 per cent include: salaries, wages and other overhead costs which are directly related to the company's Australian R&D activities; contract expenditure; and capital expenditure on R&D plant and equipment (over three years). Expenditure on acquiring, or acquiring the right to use, technology for the purposes of the company's own R&D activities is 100 per cent deductible.

The concession is only available for R&D projects carried out in Australia or an external Territory and must meet exploitation and adequate Australian content requirements.

To attract the full 150 per cent deduction, annual eligible R&D expenditure must exceed $50,000, with a sliding scale operating from 100 to 150 per cent where annual eligible R&D expenditures range from $20,000 to $50,000. Where R&D is contracted to an approved Registered Research Agency this

expenditure threshold is waived and the R&D expenditure can be deducted at 150 per cent.

RESEARCH AND DEVELOPMENT — EXPENDITURE AND HUMAN RESOURCES

The estimated gross expenditure on R&D (GERD) carried out in Australia in 1988–89, was $4,187 million. This represents a 14 per cent increase compared with 1987–88. At average 1984–85 prices, GERD increased by nine per cent over the same period. The total estimate of human resources devoted to R&D during 1988–89 in Australia was 64,951 person years; this represented a five per cent increase compared with 1987–88.

These and the statistics which follow are based on the definitions described by the OECD for national R&D surveys. The OECD defines R&D as comprising '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'.

R&D statistics for 1985–86 to 1989–90 are presented below for the general government, higher education and private non-profit sectors. For the business enterprise sector, data for 1989–90 is also included where available.

HUMAN RESOURCE EFFORT DEVOTED TO RESEARCH AND EXPERIMENTAL DEVELOPMENT
(person years)

Sector	*1985–86*	*1986–87*	*1987–88*	*1988–89r*	*1989–90*
Business enterprises					
Private sector	13,431	16,070	r16,655	18,488	17,975
Public sector	1,353	1,395	1,327	1,352	1,491
General government					
Commonwealth	11,182	11,518	11,491	11,498	n.a.
State	6,337	6,627	7,125	7,643	n.a.
Higher education					
Universities	20,143	21,690	22,435	22,939	
CAEs	(a)	1,529	1,888	1,963	n.a.
Private non-profit	812	997	1,023	1,068	n.a.
Total	**53,258**	**59,826**	**61,944**	**64,951**	**n.a.**

(a) Estimates for Colleges of Advanced Education were not collected this year.
Source: Research and Experimental Development: All Sector Summary, Australia (8112.0).

GROSS EXPENDITURE ON RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT IN AUSTRALIA AT CURRENT AND AVERAGE 1984–85 PRICES
($ million)

Sector	*1985–86*	*1986–87*	*1987–88*	*1988–89r*	*1989–90*
			AT CURRENT PRICES		
Business enterprises					
Private sector	852.2	1,147.0	1,317.5	1,604.7	1,729.2
Public sector	95.7	r123.6	r111.6	137.0	176.8
General government					
Commonwealth	729.0	785.9	797.0	862.0	n.a.
State	315.8	357.9	394.6	453.2	n.a.
Higher education					
Universities	707.6	844.9	929.8	1,018.4	
CAEs	(a)	36.7	53.8	54.5	n.a.
Private non-profit	47.1	52.8	54.2	56.7	n.a.
Total	**2,747.4**	**3,348.9**	**3,658.5**	**4,186.5**	**n.a.**
			AT AVERAGE 1984–85 PRICES		
Business enterprises					
Private sector	r793.7	983.8	r1,051.5	1,215.6	1,204.6
Public sector	89.2	r106.7	r92.1	108.8	131.0
General government					
Commonwealth	688.3	693.2	654.2	672.8	n.a.
State	297.1	312.6	323.6	354.2	n.a.
Higher education					
Universities	700.7	750.8	788.7	816.5	
CAEs	(a)	32.2	40.3	41.0	n.a.
Private non-profit	44.2	48.7	47.4	47.3	n.a.
Total	**2,613.4**	**2,928.0**	**2,997.8**	**3,256.2**	**n.a.**

(a) Estimates for Colleges of Advanced Education were not collected this year.

Source: Research and Experimental Development: All Sector Summary, Australia (8112.0).

GROSS EXPENDITURE ON RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT IN AUSTRALIA BY SECTOR BY SOURCE OF FUNDS ($'000)

	Source of funds						
Sector	*Common-wealth government*	*State government*	*Business enterprises*	*Higher education*	*Private non-profit and other Australian*	*Overseas*	*Total*
			1986–87				
Business enterprises							
Private sector	53,370	} 3,924	1,077,040	} 269	} 459	12,903	1,146,970
Public sector	8,664		r113,986			—	r123,646
General government							
Commonwealth	754,378	3,833	22,881	108	347	4,374	785,920
State	30,487	294,573	17,968	413	13,641	802	357,884
Higher education							
Universities	788,970	9,010	9,659	8,943	22,121	6,245	844,949
CAEs	6,305	2,975	8,806	17,300	1,167	180	36,732
Private non-profit	20,042	6,712	2,472	411	18,703	4,468	52,809
Total	**1,662,216**	**321,027**	**1,252,811**	**27,444**	**56,439**	**28,973**	**3,348,909**
			1988–89r				
Business enterprises							
Private sector	57,943	2,709	1,498,040	} 168	} 5,712	40,676	1,604,698
Public sector	2,900	1,642	131,926			—	137,017
General government							
Commonwealth	809,305	3,862	40,617	—	2,651	5,563	861,998
State	42,859	368,340	22,092	228	18,513	1,162	453,193
Higher education							
Universities	940,066	11,856	18,676	—	40,961	6,824	1,018,383
CAEs	11,228	4,779	8,906	28,057	1,180	369	54,518
Private non-profit	19,741	5,660	4,834	632	23,628	2,193	56,688
Total	**1,884,042**	**398,848**	**1,725,091**	**29,084**	**92,645**	**56,787**	**4,186,495**
			1989–90(a)				
Business enterprises							
Private sector	42,622	3,785	n.p.	636	n.p.	33,361	1,729,170
Public sector	4,514	5,739	n.p.	—	n.p.	—	176,785
Total	**47,136**	**9,524**	**1,804,771**	**636**	**10,527**	**33,361**	**1,905,955**

(a) Data for only the Business enterprise sector was collected in 1989–90.

Source: Research and Experimental Development: All Sector Summary, Australia (8112.0).

Business sector

The estimate of expenditure on R&D carried out in Australia by private and public business enterprises during 1986–87, 1988–89 and 1989–90 are shown in the next table at current prices. At average 1984–85 prices, R&D expenditure is estimated to have increased by 22.5 per cent and one per cent over 1986–87 and 1988–89 respectively.

RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT BY BUSINESS ENTERPRISES(a) RESOURCES DEVOTED TO R&D BY INDUSTRY OF ENTERPRISE

Industry of enterprise		*Number of enterprises*		*Expenditure on R&D ($m)*			*Person years of effort on R&D*		
ASIC Code	*Description*	*1986–87*	*1988–89r*	*1986–87*	*1988–89r*	*1989–90(b)*	*1986–87*	*1988–89r*	*1989–90(b)*
11–15	Mining (excluding services to mining)	39	47	55.6	68.7	(c)	524	589	(c)
	Manufacturing—								
21	Food, beverages and tobacco	106	103	56.7	83.3	(d)	815	836	(d)
23–24	Textiles, clothing and footwear	35	45	12.9	9.1	(d)	119	118	(d)
25	Wood, wood products and furniture	47	46	6.4	10.3	(d)	118	119	(d)
26	Paper, paper products, printing and publishing	32	30	10.0	24.3	(d)	158	237	(d)
27	Chemical, petroleum and coal products	270	256	120.1	146.0	148.4	1,857	1,647	1,625
28	Non-metallic mineral products	39	45	15.3	22.3	(d)	178	206	(d)
29	Basic metal products	47	53	63.7	92.1	132.9	865	962	985
31	Fabricated metal products	129	133	23.0	26.1	(d)	392	383	(d)
32	Transport equipment	98	125	127.9	160.2	153.3	1,562	1,764	1,424
334	Photographic, professional and scientific equipment	67	69	25.7	37.5	(d)	433	512	(d)
335	Appliances and electrical equipment	590	575	174.5	233.2	273.5	2,835	3,418	3,649
336	Industrial machinery and equipment	254	254	43.3	55.6	(d)	720	790	(d)
34	Miscellaneous manufacturing	102	114	21.6	26.8	(d)	329	394	(d)
C	**Total manufacturing**	**1,816**	**1,844**	**701.1**	**926.6**	**994.1**	**10,380**	**11,386**	**10,976**
	Other industries—								
F	Wholesale and retail trade	293	291	96.8	151.5	(c)	1,230	1,616	(c)
63	Property and business services	588	507	178.4	209.5	(c)	2,376	2,585	(c)
8461	Research and scientific institutions	80	97	45.3	128.1	(c)	640	1,109	(c)
(e)	Other n.e.c.	213	217	r193.4	257.3	(c)	2,315	2,554	(c)
16, D–L	**Total other industries**	**1,174**	**1,112**	**r514.0**	**746.4**	**911.9**	**6,561**	**7,864**	**8,490**
	Total all industries	**3,029**	**3,003**	**r1,270.6**	**1,741.7**	**1,906.0**	**17,465**	**19,840**	**19,467**
	Private sector contribution	2,967	2,949	1,147.0	1,604.7	1,729.2	16,070	18,488	17,975
	Public sector contribution	62	54	r123.6	137.0	176.8	1,395	1,352	1,491

(a) Excludes enterprises in ASIC Division 'A'. (b) Inter year estimates are not available for all industries listed. Details have been published where available. (c) Included in Total Other Industries. (d) Included in Total Manufacturing. (e) ASIC codes 16,D,E,G,H,61–62,J,8141–8306,8462–8495,L.

Source: Research and Experimental Development, Business Enterprises, Australia (8104.0).

General government sector

The estimate of R&D expenditure of the Commonwealth Government and State Governments, for the years 1986–87 and 1988–89 are shown in the next table at current prices. At average 1984–85 prices, R&D expenditure is estimated to have increased by 2.1 per cent over 1986–87.

RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT BY GENERAL GOVERNMENT ORGANISATIONS
RESOURCES DEVOTED TO R&D BY SOCIO-ECONOMIC OBJECTIVE

	Expenditure on R&D ($m)		*Person years of effort on R&D*	
Socio-economic objective	*1986–87r*	*1988–89r*	*1986–87r*	*1988–89r*
National security (Defence)	175.1	202.5	3,146	3,078
Economic development				
Agriculture	387.7	439.8	6,505	6,831
Forestry and fisheries	63.3	74.4	1,055	1,151
Mining (prospecting)				
Energy sources	14.3	14.2	179	139
Other	26.5	43.1	364	515
Mining (extraction)				
Energy sources	2.8	4.0	42	55
Other	7.6	8.3	127	111
Manufacturing	119.1	129.1	1,697	1,770
Construction	15.0	20.0	273	283
Energy	47.0	43.8	546	478
Transport	17.4	22.0	292	289
Communications	1.3	1.8	10	21
Economic services n.e.c.	18.2	23.0	412	418
Total economic development	**720.2**	**823.5**	**11,502**	**12,064**
Community welfare				
Urban and regional planning	1.7	1.0	40	20
Environment	60.9	86.2	702	965
Health	61.3	65.6	1,196	1,433
Education	6.7	17.3	151	201
Welfare	7.2	8.3	119	121
Community services n.e.c.	20.8	31.6	261	394
Total community welfare	**158.6**	**210.0**	**2,469**	**3,133**
Advancement of knowledge				
Earth, ocean and atmosphere n.e.c.	83.0	67.0	877	688
General advancement of knowledge	7.2	12.1	153	180
Total advancement of knowledge	**90.2**	**79.0**	**1,030**	**868**
Total	**1,143.8**	**1,315.2**	**18,145**	**19,141**

Source: Research and Experimental Development, General Government and Private Non-Profit Organisations, Australia (8109.0).

Higher education sector

The estimate of expenditure on R&D carried out in Australia by higher education organisations during 1986 and 1988 are shown in the next table at current prices. At average 1984–85 prices, R&D expenditure is estimated to have increased by 22 per cent over 1986.

RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT BY HIGHER EDUCATION ORGANISATIONS
R&D EXPENDITURE BY SOCIO-ECONOMIC OBJECTIVE

Expenditure on R&D ($m)

	1986r			*1988*		
Socio-economic objective	*CAEs*	*Univer-sities*	*Total*	*CAEs*	*Univer-sities*	*Total*
National security (Defence)	0.2	1.7	1.9	0.2	2.2	2.4
Economic development						
Agriculture	2.1	72.0	74.1	4.0	81.5	85.5
Forestry and fisheries	0.4	8.6	9.0	0.8	11.2	12.0
Mining (prospecting)						
Energy sources	0.3	3.7	4.0	0.4	3.3	3.7
Other	0.2	7.0	7.2	0.7	5.5	6.2
Mining (extraction)						
Energy sources	0.1	1.2	1.3	0.3	2.5	2.8
Other	1.2	5.6	6.8	1.5	6.8	8.3
Manufacturing	4.8	24.1	28.9	6.8	39.4	46.2
Construction	0.8	8.2	9.0	1.4	11.2	12.6
Energy	1.9	25.4	27.3	2.5	27.4	29.9
Transport	0.5	4.2	4.7	0.4	4.5	4.9
Communications	1.0	7.2	8.2	1.4	8.9	10.3
Economic services n.e.c.	2.8	33.3	36.1	3.3	46.4	49.7
Total economic development	**16.1**	**200.6**	**216.7**	**23.5**	**248.6**	**272.0**
Community welfare						
Urban and regional planning	0.4	5.6	6.0	0.8	6.2	7.0
Environment	1.4	15.7	17.1	2.6	25.8	28.4
Health	6.8	180.8	187.6	9.9	216.3	226.2
Education	3.8	32.9	36.7	6.8	35.1	41.9
Welfare	0.9	9.1	10.0	0.7	7.9	8.6
Community services n.e.c.	1.7	17.0	18.7	2.1	19.8	21.9
Total community welfare	**15.0**	**261.1**	**276.1**	**22.9**	**311.0**	**334.0**
Advancement of knowledge						
Earth, ocean and atmosphere n.e.c.	0.6	49.9	50.5	1.2	49.5	50.7
General advancement of knowledge	4.9	331.7	336.6	6.7	407.0	413.7
Total advancement of knowledge	**5.5**	**381.6**	**387.0**	**7.9**	**456.5**	**464.4**
Total	**36.7**	**844.9**	**881.6**	**54.5**	**1,018.4**	**1,072.9**

Source: Research and Experimental Development: Higher Education Organisations, Australia (8111.0).

RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT BY HIGHER EDUCATION ORGANISATIONS
HUMAN RESOURCES DEVOTED TO R&D BY SOCIO-ECONOMIC OBJECTIVE

Person years of effort on R&D

	1986r			*1988*		
Socio-economic objective	*CAEs*	*Univer-sities*	*Total*	*CAEs*	*Univer-sities*	*Total*
National security (Defence)	13	39	52	6	36	42
Economic development						
Agriculture	63	1,949	2,012	129	2,045	2,174
Forestry and fisheries	19	237	256	35	224	260
Mining (prospecting)						
Energy sources	17	95	112	20	85	105
Other	12	194	206	32	131	163
Mining (extraction)						
Energy sources	2	37	40	12	63	75
Other	38	156	194	51	163	213
Manufacturing	215	682	896	284	949	1,233
Construction	25	201	226	36	233	269
Energy	76	643	719	93	602	695
Transport	28	109	137	19	97	116
Communications	58	200	258	49	196	245
Economic services n.e.c.	105	700	805	136	853	989
Total economic development	**659**	**5,202**	**5,861**	**896**	**5,640**	**6,536**
Community welfare						
Urban and regional planning	16	134	150	25	119	144
Environment	66	427	493	92	554	646
Health	283	4,526	4,809	327	4,894	5,221
Education	140	843	984	239	824	1,062
Welfare	41	229	269	29	171	199
Community services n.e.c.	76	379	454	62	401	463
Total community welfare	**621**	**6,538**	**7,159**	**773**	**6,962**	**7,735**
Advancement of knowledge						
Earth, ocean and atmosphere n.e.c.	26	1,181	1,207	40	1,036	1,076
General advancement of knowledge	210	8,730	8,939	249	9,265	9,514
Total advancement of knowledge	**236**	**9,911**	**10,147**	**289**	**10,301**	**10,590**
Total	**1,529**	**21,690**	**23,218**	**1,963**	**22,939**	**24,902**

Source: Research and Experimental Development: Higher Education Organisations, Australia (8111.0).

Private non-profit sector

The estimate of expenditure on R&D carried out by private non-profit organisations during 1986–87 and 1988–89 are shown in the next table at current prices. At average 1984–85 prices, R&D expenditure is estimated to have dropped by 2.9 per cent over 1986–87.

RESEARCH AND EXPERIMENTAL DEVELOPMENT CARRIED OUT BY PRIVATE NON-PROFIT ORGANISATIONS
RESOURCES DEVOTED TO R&D BY SOCIO-ECONOMIC OBJECTIVE

	Expenditure ($'000)		*Person years of effort on R&D*	
Socio-economic objective	*1986–87r*	*1988–89r*	*1986–87r*	*1988–89r*
National security (Defence)	—	—	—	—
Economic development				
Agriculture	69	179	3	4
Forestry and fisheries	35	—	1	—
Mining (prospecting)				
Energy sources	—	—	—	—
Other	—	—	—	—
Mining (extraction)				
Energy sources	—	—	—	—
Other	—	—	—	—
Manufacturing	n.p.	5,053	n.p.	69
Construction	—	—	—	—
Energy	n.p.	288	n.p.	4
Transport	52	—	1	—
Communications	—	16	—	1
Economic services n.e.c.	1,683	2,554	31	30
Total economic development	**5,911**	**8,090**	**90**	**106**
Community welfare				
Urban and regional planning	38	38	—	1
Environment	564	411	16	8
Health				
Pre and para clinical health	n.p.	7,179	n.p.	132
Clinical health	36,348	36,078	691	723
Public health	275	1,401	10	37
Total health	*n.p.*	*n.p.*	*n.p.*	*891*
Education	1,200	1,302	20	22
Welfare	882	748	23	16
Community services n.e.c.	n.p.	787	n.p.	11
Total community welfare	**46,351**	**47,944**	**896**	**949**
Advancement of knowledge				
Earth, ocean and atmosphere n.e.c.	48	48	2	2
General advancement of knowledge	499	606	9	11
Total advancement of knowledge	**547**	**655**	**11**	**13**
Total	**52,809**	**56,688**	**997**	**1,068**

Source: Research and Experimental Development, General Government and Private Non-Profit Organisations, Australia (8109.0).

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DEPARTMENT OF INDUSTRY, TECHNOLOGY AND COMMERCE. Measures of Science and Innovation, Australian Science and Technology Indicators Report, 1987. Canberra, 1987

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Additional information

Additional information on topics presented in this chapter may be found in the annual reports of the organisations mentioned, particularly the Department of Industry, Technology and Commerce, the CSIRO, and in the annual *Science and Technology Statements*. Statistical information on R&D for the years 1968–69, 1973–74 and 1976–77 may be found in the reports on Project SCORE published by the (then) Department of Science. Statistical information on R&D relating to 1978–79, 1981–82, and 1984–85 to 1989–90 may be obtained from the Australian Bureau of Statistics (ABS). Further statistical information on higher education is obtainable from the Department of Employment, Education and Training.

The Department of Industry, Technology and Commerce's *Australian Science and Technology Indicators Report*, published in 1988, uses Science and Technology (S&T) indicators to give a good overview and analysis of science and technology information in Australia. It presents information on R&D effort and expenditure; science and technology workforce; S&T information resources; scientific equipment and facilities; literature-based S&T measures; patent activity; technology training; financial support for technological development; industry operations and trade by level of technology; and transfer of technical knowledge.

FOR MORE INFORMATION

The ABS has a far wider range of information on Australia than that contained in the *Year Book*. Information is available in the form of regular publications, electronic data services, special tables and from investigations of published and unpublished data.

For further information contact ABS Information Services at one of the addresses listed on the page facing the Introduction to the *Year Book*.