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# Foreword

The aim of the Australian infrastructure statistics yearbook is to provide a single, comprehensive annual source of infrastructure statistics for use by policymakers, industry leaders, transport analysts and the wider Australian community.

The publication is primarily a source of long-term, aggregate time series infrastructure statistics. In most cases the time series extend to 2011–12. A brief introduction is provided to explain the structure of the publication and areas identified for further development. Most statistics included in the publication are currently collected by BITRE or other Australian, state or territory government agencies.

The tables are presented within a logical framework to assist the comparison and analysis of statistics across the various forms of infrastructure. This framework also identifies areas where further statistics may provide a more complete statistical picture of Australian infrastructure.

The Yearbook is presented in five Parts:

- Part I: Infrastructure and the economy,
- Part T: Transport,
- Part E: Energy,
- Part C: Communications, and
- Part W: Water.

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Jeremy Dornan at the Bureau of Infrastructure, Transport and Regional Economics managed and coordinated the project.

Gary Dolman  
Head of Bureau  
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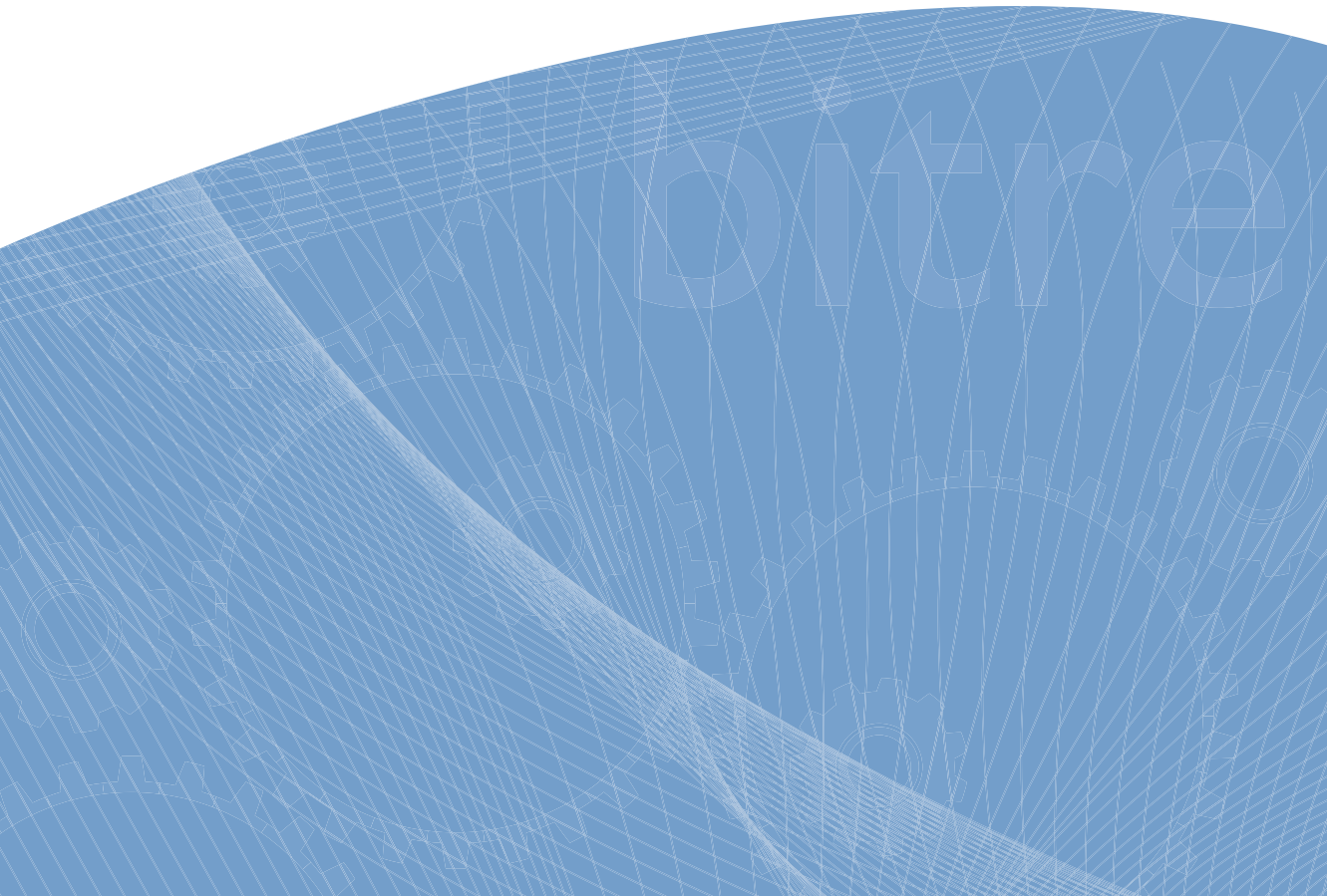
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## Introduction







# Introduction

The goal of the Australian Infrastructure Statistics Yearbook is to provide a comprehensive, coherent summary of major economic infrastructure in Australia and its use. A framework of time series statistics was developed with this end in mind. A range of datasets of varying quality are available. Datasets that meet BITRE requirements for accuracy and reliability are included; however, there are a number of areas of the framework where suitable datasets are not currently compiled. These areas of unmet statistical demand are highlighted in the section headed For Further Development, at the end of this introductory chapter.

## The framework

Part I of the Yearbook provides a summary of major economic infrastructure and several statistical measures likely to influence investment in, and use of infrastructure. The rest of the Yearbook is divided into four sections, focussing on each of the four themes of major economic infrastructure:

- Part T, for transport infrastructure;
- Part E, for energy infrastructure;
- Part C, for communications infrastructure; and
- Part W, for water infrastructure.

To enable comparison and aggregation across infrastructure types, the Yearbook uses a common statistical framework across each of the main infrastructure parts. Where data are available, statistics are provided using common measures.

The statistical framework covers several key areas:

- Physical infrastructure. Measures include the value and capacity of infrastructure at a given time ('stock' measures); additions to the amount of infrastructure (construction) and reductions (depreciation) that take place during the year ('flow' measures); and measures of the quality of the infrastructure.
- Inputs. Measures of non-capital inputs to activities that rely on infrastructure.
- Activity. Measures of activities associated with infrastructure. These activities may be grouped into themes. For example, for Part T (transport), these themes include freight, passengers, road, rail, aviation and maritime.
- Impacts. Measures of the external impact of activities. These impacts include safety and security issues as well as greenhouse gas emissions and other pollution.

## *Part I Infrastructure and the economy*

Appropriately prioritised infrastructure projects should enhance economic efficiency and improve productivity.

Chapter I of Part I provides several key macroeconomic indicators that are likely to influence, or be influenced by, activity associated with infrastructure. Where available, the contribution of

detailed infrastructure industries to the key macroeconomic indicator is provided. This chapter provides estimates of production, employment, wages and salaries, prices, international trade, interest rates, the Australian currency exchange rate and the Australian resident population.

Chapter 2 of Part I summarises infrastructure construction activity across the four forms of major economic infrastructure covered in the Yearbook.

## **Part T Transport**

Chapter 1: Transport infrastructure. This chapter provides a number of measures of the construction of transport infrastructure as well as measures of the length of roads available for public use and road construction price indexes.

Chapter 2: Freight. In its broadest sense, freight transport describes the movement of physical items between locations. A summary of freight statistics is provided, classified by mode of transport. Freight is further classified into bulk and non-bulk segments. Two measures of freight transport are currently provided in the framework: the weight of freight moved in Australia (measured in millions of tonnes) and freight by weight and distance moved (measured in tonne kilometres—the transport task performed in moving one tonne of freight one kilometre).

Chapter 3: Passengers. In a similar fashion, passenger transport describes the movement of people between locations. This definition of passengers does not include drivers of freight vehicles when they are employed for freight purposes but does include drivers of freight vehicles when they are being used to transport passengers (e.g. private use of light commercial vehicles). The framework provides a summary of passenger statistics, classified by mode of transport (some measures of walking and cycling to work are available in Table T 3.4, but estimates for recreational boating are not currently provided in this publication). Two measures of passenger transport are currently provided in the framework: the number of people transported and the number of passenger kilometres travelled (a measure of the transport task performed in moving one passenger one kilometre).

Chapters 4–7: Road, Rail, Aviation, Shipping. These chapters focus on the four main motorised modes of transport: road, rail, aviation and shipping. Where possible, data are classified by location in terms of state or territory (interstate, intrastate, intercapital) or level of urbanisation.

Price data are included in the framework to provide an indication of the costs of each mode of transport. Price estimates for shipping and rail are not readily available.

The framework also includes estimates for the size and characteristics of the various modal vehicle fleets.

Chapters 8 (Safety) and Chapter 9 (Energy and the Environment) complete the statistical framework for transport infrastructure with a summary of some key impacts of transport activity.

Chapter 8 presents statistics for transport accidents and casualties with comparisons by mode of transport; state or territory of accident; and severity of injuries.

Chapter 9 provides direct energy consumption and emissions data by transport activity. This includes estimates for fuel sales, fuel prices and the production and international trade of

transport fuels, classified by petroleum fuel type, as well as estimates of transport emissions, classified by transport mode and emission type.

## Part E Energy

Chapter 1: Energy infrastructure. This chapter provides a number of measures of energy infrastructure construction as well as measures of the length of electricity networks, capacity of electricity generation plants and reliability of electricity supply.

Chapter 2: Energy inputs. Chapter 2 provides a summary of inputs to energy infrastructure; including measures of mineral energy reserves, and energy used in the generation of electricity and natural gas distribution.

Chapter 3: Energy production and trade. The first few tables in Chapter 3 provide a summary of energy production in Australia of all main primary fuels and energy imports and exports. The remaining tables provide energy usage details for key specific energy types:

- For electricity, detailed usage statistics are provided by state/territory and industry, with further detail provided for the number of customers and electricity prices facing residential consumers in each capital city.
- For gas, detailed usage statistics are provided by state/territory and industry, as well as gas prices facing residential consumers in each capital city.
- For black coal, detailed usage statistics are provided by state/territory and industry, as well as time series statistics for export prices for black coal.
- For brown coal, detailed usage statistics are provided, classified by industry for New South Wales and Victoria.
- For petroleum fuels, detailed usage statistics are provided by state/territory and industry, as well as time series statistics for a range of international measures of crude oil prices.

Chapter 4: Energy impacts. Measures of the external impacts of energy usage are provided for serious injuries and greenhouse gas emissions. The electricity generation industry plays a unique role in greenhouse gas statistics within the Kyoto framework: Greenhouse gas emissions from the electricity generation industry represent all 'scope 2' ('upstream' or indirect) emissions for other industries (see Table E 4.2).

## Part C Communication

The Yearbook focuses on key networks that enable economic activity. Telecommunications networks are a vital part of Australian infrastructure; however, the telecommunications industry is becoming increasingly integrated with the radiocommunications and broadcasting industries. At the same time, rapid advances in technology have enabled a dramatic expansion in the capacity of existing physical infrastructure in the communications industry.

To provide a meaningful summary of Australian communications infrastructure, Part C includes measures of both physical infrastructure (see Chapter 1) and technology investments that enhance infrastructure capacity (see Chapter 2). Chapter 3 provides estimates for fixed and mobile telephone and internet subscribers and internet service providers.

Chapter 4: Communications usage. This chapter provides estimates of internet usage and internet commerce, as well as telecommunication prices facing residential customers in each capital city, indicative broadband subscription prices and domain name registration statistics.

Chapter 5: Communication security provides statistics for the number of telephone numbers registered on the do not call register and the number of emergency calls to 000 and 112.

## Part W Water

A significant number of tables presented in Part W: Water were compiled by BITRE using data published by the National Water Commission (NWC) and their state and territory partners in two annual National Performance Reports (NPR); one for urban utilities and the other for rural water service providers.

The urban and rural NPRs provide comprehensive data on water supply and wastewater treatment activity for each major water utility in Australia using a common set of measures. While the data provided in the NPRs are comprehensive, records for a number of utilities are incomplete, so simply aggregating the published data to create Yearbook tables would underestimate state and national totals. To address this issue, prior to aggregating NPR data BITRE filled in missing records by researching utilities' annual reports, council reports, state health authorities' water records or used statistical imputation techniques.

Chapter 1: Water infrastructure. This chapter provides measures of the construction of water infrastructure that are consistent with construction measures used in earlier parts of the Yearbook. In addition, there are several stock measures (including the current value of water infrastructure assets, the capacity of major water storage dams, the current holdings of major water storage dams, and the length of water distribution networks) and infrastructure quality measures for water supply, wastewater treatment and rural water supply networks.

Chapter 2: Inputs to water supply. Table 2.1 provides volume estimates for total Australian rainfall each calendar year. The remaining tables in Chapter 2 provide measures of:

- sources of water used in urban and rural water distribution networks and sources of wastewater for wastewater treatment networks
- water supply prices facing residential customers in each capital city
- power consumed to provide rural water distribution
- trading activity in rural water markets.

Chapter 3: Water usage. Chapter 3 provides a summary of annual water usage in Australia. Statistics are provided for the services provided by major water utilities (urban water, urban wastewater and rural water) in terms of the population that their networks serve, the number of customer connections to the network and the volume and nature of water supplied. In addition, Chapter 3 provides a summary of water consumed by agriculture, including water sourced from rural water supply networks as well as other sources.

Chapter 4: Water health and emissions. Chapter 4 provides measures of water quality for urban water supply, sewer overflows to the environment and greenhouse gas emissions from urban and rural water supply and wastewater treatment.

## For further development

The preparation of a publication such as this highlights the differences between the conceptual framework and the reality of the infrastructure statistics that are currently available. There are several areas of the framework where current statistical coverage is sparse and further compilation work is required to present a complete statistical picture of Australian infrastructure activity.

Figures at the beginning of each Part highlight data gaps. Figure W 1 illustrates numerous gaps in water data—specifically the amount of surface water used by homes and businesses as well as ground water used for agriculture. Similarly, Figure T 1a highlights shortcomings in regional road and rail data.

## Publication layout

Diagrams are provided at the commencement of each Part which summarise statistics presented in the tables that follow. These diagrams highlight the areas of the conceptual framework where statistics are unknown or not available.

Throughout this publication, End Notes are numbered consecutively within each Part. References provided at the bottom of tables relate to the most recent issue of the statistical publication. Where a complete time series is not available from the most recent issue, earlier issues were used.



PART I: Infrastructure and the economy

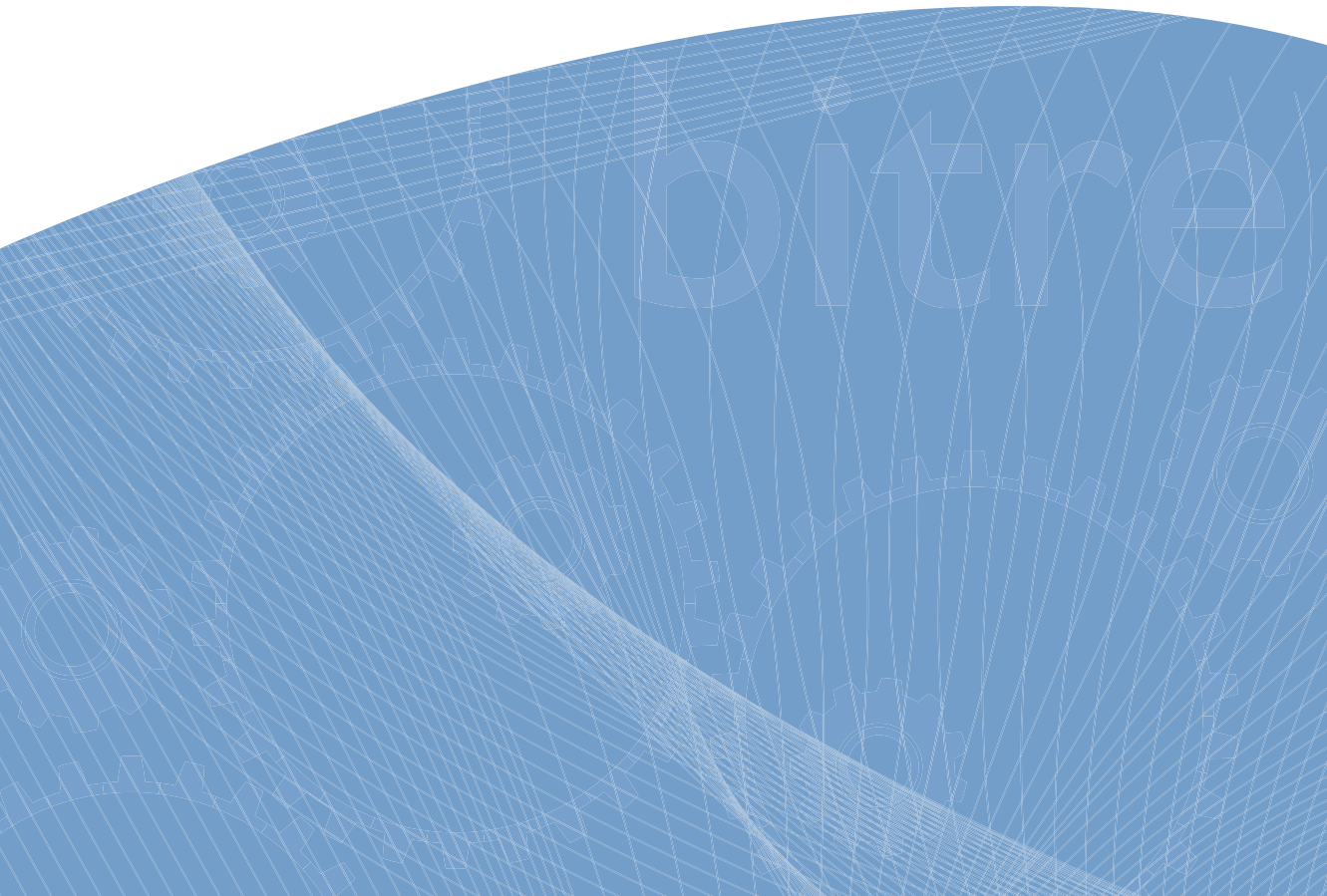
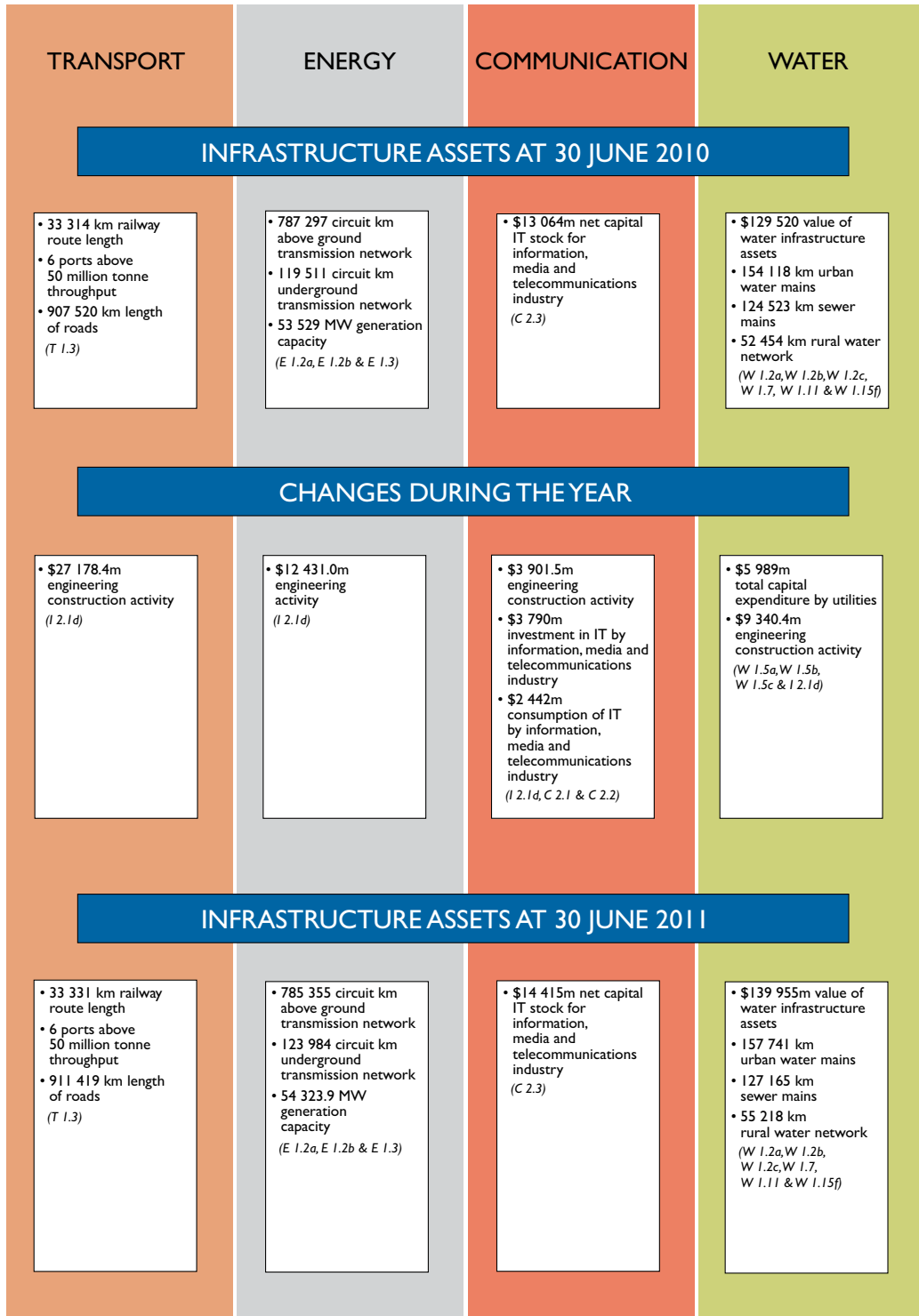


Figure I I Australia's key economic infrastructure at 30 June 2010 and 30 June 2011



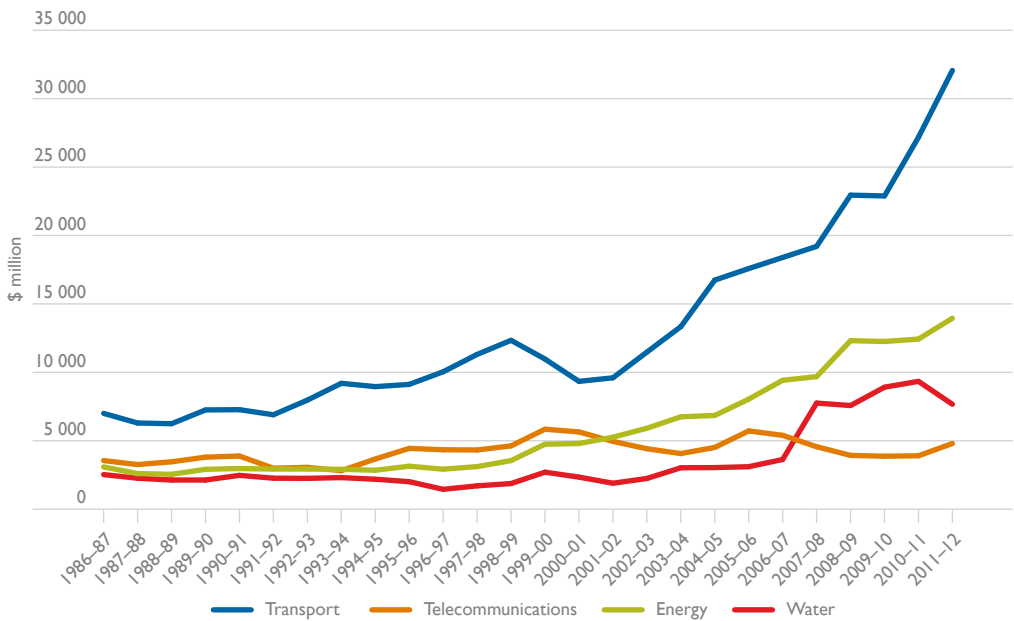


# PART I:

## Infrastructure and the economy

The main source of infrastructure statistics used by BITRE is the ABS publication, Engineering Construction Activity, Australia (ABS cat. no. 8762.0). This publication provides measures of non-building construction, classified by major form of infrastructure: transport (roads, rail, ports, etc), energy (electricity and gas transmission networks, etc), telecommunications networks, and water supply and distribution networks.

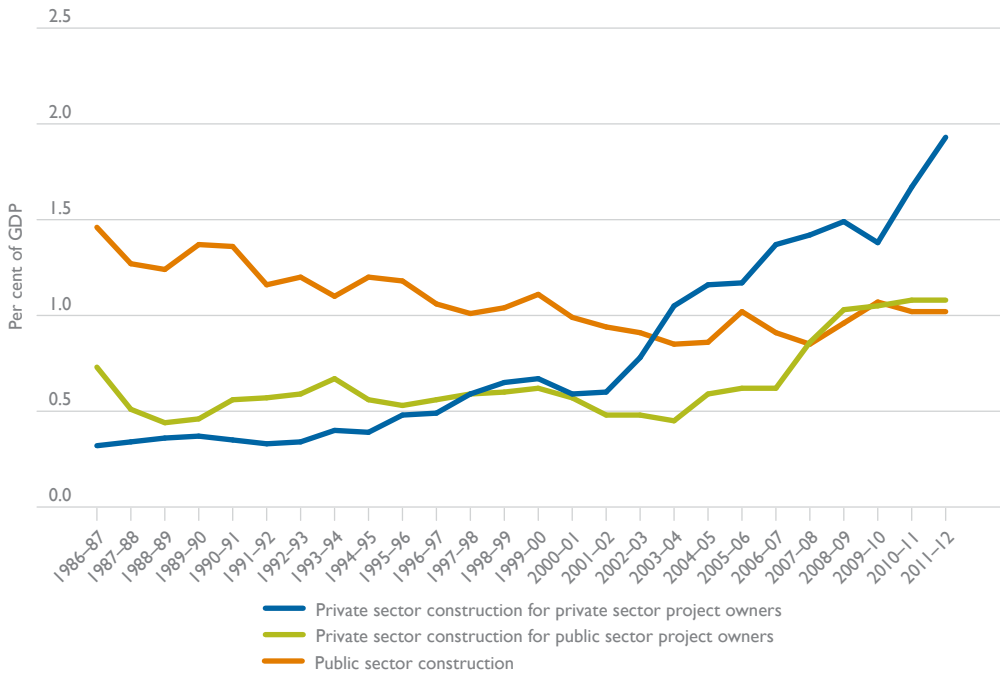
**Figure I 2** Infrastructure construction activity, adjusted by chain volume index



Since 2001, Australian real infrastructure construction activity has increased strongly, mainly due to sharp increases in the construction of transport, water and energy infrastructure. Growth in transport infrastructure construction slowed in 2008–09 to 2009–10. However, the value of construction activity increased again in 2010–11 and 2011–12.

Water infrastructure construction expenditure increased sharply in 2007–08 and again in 2009–10, reflecting work conducted on the South East Queensland Water Grid and the recent Victorian desalination plant. With the completion of these projects, expenditure on water infrastructure is decreasing.

**Figure 1 3** Infrastructure construction activity, by sector, adjusted by chain volume index



Since 2000, private sector involvement in the construction of infrastructure has increased sharply: initially in the form of private sector-owned projects, then from 2005 in the form of private sector construction of public sector projects. Public sector construction activity gradually decreased between 1987 and 2007, stabilising at approximately 1 per cent of GDP.

# CHAPTER I

## The economy

**Table I 1.1a** Australian gross domestic product, major infrastructure industries

Financial year	Chain volume measures 1						Gross Domestic Product	Major infrastructure industries as percentage of GDP
	Gross value added, at basic prices 2							
	Transport, postal and warehousing	Energy		Information media and telecommunications	Water Supply and waste services			
		Electricity	Gas					
\$ million								
1974-75	17 979	6 166	71	4 970	7 326	453 202	8.1	
1975-76	17 885	6 396	117	4 686	7 440	465 110	7.9	
1976-77	19 367	6 921	168	4 899	7 692	481 731	8.1	
1977-78	21 813	7 307	207	5 204	7 125	486 005	8.6	
1978-79	22 163	7 743	242	5 626	7 326	506 089	8.5	
1979-80	22 823	8 161	293	6 046	7 936	521 561	8.7	
1980-81	24 221	8 696	307	6 693	7 971	539 300	8.9	
1981-82	24 589	9 067	468	7 223	8 046	556 762	8.9	
1982-83	23 693	9 214	466	7 543	8 521	543 877	9.1	
1983-84	24 888	9 738	513	7 992	8 510	569 688	9.1	
1984-85	26 910	10 336	573	8 612	8 946	598 543	9.3	
1985-86	28 541	10 865	564	9 345	9 094	625 997	9.3	
1986-87	29 071	11 326	553	10 054	9 042	642 471	9.3	
1987-88	30 351	12 003	593	10 938	9 271	678 762	9.3	
1988-89	31 732	12 651	634	11 838	9 498	705 368	9.4	
1989-90	32 531	13 293	679	13 232	9 952	730 662	9.5	
1990-91	32 753	13 541	644	13 960	10 410	728 098	9.8	
1991-92	33 473	13 854	632	14 968	10 294	731 216	10.0	
1992-93	33 699	14 275	639	16 717	10 210	761 275	9.9	
1993-94	35 535	14 779	675	18 261	10 519	792 095	10.1	
1994-95	37 682	15 111	722	20 420	10 851	823 697	10.3	
1995-96	40 678	15 351	729	21 583	10 820	856 592	10.4	
1996-97	42 345	15 305	733	23 149	10 749	890 004	10.4	
1997-98	43 280	15 909	763	25 029	11 103	930 269	10.3	
1998-99	44 473	16 184	813	26 826	11 363	976 358	10.2	
1999-00	46 056	16 676	847	27 608	11 334	1 013 909	10.1	
2000-01	47 827	16 915	873	28 589	11 627	1 033 168	10.2	
2001-02	49 363	16 819	879	29 386	12 124	1 073 597	10.1	
2002-03	52 353	17 040	905	31 210	12 239	1 107 425	10.3	
2003-04	54 031	17 370	922	32 619	11 871	1 153 355	10.1	
2004-05	57 188	17 560	913	33 417	11 839	1 190 111	10.2	
2005-06	58 952	18 174	917	34 793	11 660	1 226 323	10.2	
2006-07	62 342	18 278	972	36 958	11 777	1 272 776	10.2	
2007-08	65 743	18 763	1 005	39 260	11 233	1 320 746	10.3	
2008-09	65 239	19 693	1 009	39 710	11 603	1 342 514	10.2	
2009-10	66 439	19 970	1 032	40 289	12 197	1 370 540	10.2	
2010-11	68 542	20 229	1 102	41 581	12 479	1 403 888	10.3	
2011-12	70 902	19 696	1 106	41 335	12 554	1 452 890	10.0	

1,2 See end notes.  
Source: ABS (2012b).

**Table I 1.1b** Australian gross domestic product, transport industry

Financial year	Chain volume measures 1						Gross Domestic Product	Transport industry as percentage of GDP	
	Gross value added, at basic prices 2								
	Road	Transport Air and space	Rail, pipeline and other transport 3	Transport, postal and storage services	Total transport, postal and warehousing				
								\$ million	%
1974–75	4 612	1 067	4 000	10 304	17 979	453 202	4.0		
1975–76	4 541	1 118	4 010	9 941	17 885	465 110	3.8		
1976–77	5 119	1 133	4 166	10 409	19 367	481 731	4.0		
1977–78	6 043	1 240	4 267	10 869	21 813	486 005	4.5		
1978–79	5 992	1 374	4 218	11 204	22 163	506 089	4.4		
1979–80	5 891	1 512	4 646	12 082	22 823	521 561	4.4		
1980–81	6 605	1 485	4 717	11 942	24 221	539 300	4.5		
1981–82	6 752	1 524	4 778	11 702	24 589	556 762	4.4		
1982–83	6 608	1 447	4 479	10 927	23 693	543 877	4.4		
1983–84	6 781	1 523	4 857	12 241	24 888	569 688	4.4		
1984–85	7 285	1 643	5 470	13 351	26 910	598 543	4.5		
1985–86	7 693	1 786	5 846	13 679	28 541	625 997	4.6		
1986–87	7 636	1 973	5 830	14 019	29 071	642 471	4.5		
1987–88	8 092	2 208	5 941	14 420	30 351	678 762	4.5		
1988–89	8 699	2 343	6 035	14 846	31 732	705 368	4.5		
1989–90	9 106	2 030	6 411	15 226	32 531	730 662	4.5		
1990–91	8 857	2 359	6 407	15 365	32 753	728 098	4.5		
1991–92	9 143	2 749	6 423	15 284	33 473	731 216	4.6		
1992–93	8 940	3 035	6 620	15 288	33 699	761 275	4.4		
1993–94	9 378	3 322	6 893	16 122	35 535	792 095	4.5		
1994–95	10 290	3 611	6 866	17 038	37 682	823 697	4.6		
1995–96	11 397	3 862	7 339	18 238	40 678	856 592	4.7		
1996–97	11 909	4 106	7 543	18 910	42 345	890 004	4.8		
1997–98	12 382	4 094	7 520	19 418	43 280	930 269	4.7		
1998–99	12 808	4 168	7 625	20 000	44 473	976 358	4.6		
1999–00	13 398	4 390	7 866	20 517	46 056	1 013 909	4.5		
2000–01	13 794	4 736	7 944	21 338	47 827	1 033 168	4.6		
2001–02	14 574	4 447	8 285	22 180	49 363	1 073 597	4.6		
2002–03	15 613	5 031	8 727	23 026	52 353	1 107 425	4.7		
2003–04	16 692	5 332	8 885	23 207	54 031	1 153 355	4.7		
2004–05	17 692	5 891	9 090	24 506	57 188	1 190 111	4.8		
2005–06	18 569	6 225	9 192	24 960	58 952	1 226 323	4.8		
2006–07	20 496	6 764	9 175	25 989	62 342	1 272 776	4.9		
2007–08	21 770	6 985	9 845	27 290	65 743	1 320 746	5.0		
2008–09	20 293	6 727	10 171	28 101	65 239	1 342 514	4.9		
2009–10	20 777	6 711	10 218	28 784	66 439	1 370 540	4.8		
2010–11	20 365	7 220	10 614	30 343	68 542	1 403 888	4.9		
2011–12	20 202	7 526	11 007	32 166	70 902	1 452 890	4.9		

1, 2, 3 See end notes.

Source: ABS (2012b).

**Table I 1.2a** Australian employment, major infrastructure industries—transport and storage

August reference month	Transport and Storage Total Employment									Total Aust employment	Transport and storage as % of total employment
	Transport					Postal and courier services	Transport support services	Wharehousing and storage services	Total		
	Road	Rail	Water	Air and space	Other						
	<i>thousands</i>										%
1985	159.1	74.1	5.6	33.1	14.0	73.4	49.4	8.6	417.2	6 675.5	6.2
1986 <sup>4</sup>	171.8	73.3	6.1	35.1	14.9	74.4	49.5	11.2	436.2	6 918.5	6.3
1987	170.0	65.7	5.7	32.5	12.7	69.5	44.6	7.8	408.6	7 092.3	5.8
1988	171.8	60.5	5.2	34.4	13.6	68.5	46.1	9.1	409.1	7 353.3	5.6
1989	185.5	59.2	6.3	43.9	12.6	71.2	48.3	11.5	438.6	7 715.3	5.7
1990	193.4	48.7	6.6	40.0	10.9	73.9	42.6	17.0	433.2	7 808.0	5.5
1991	186.3	54.6	7.7	38.8	10.8	67.9	41.8	14.5	422.4	7 629.3	5.5
1992	185.5	42.4	5.4	35.9	10.1	60.5	37.5	13.8	391.0	7 617.5	5.1
1993	172.2	48.1	<sup>a</sup> 3.7	35.7	9.1	60.0	40.5	16.5	385.8	7 620.9	5.1
1994	177.0	44.0	7.1	36.5	14.4	56.4	41.1	19.2	395.7	7 885.7	5.0
1995	185.5	39.9	7.3	40.5	13.5	63.5	41.1	15.2	406.5	8 218.7	4.9
1996	186.4	40.9	10.2	48.1	17.2	69.0	36.8	21.0	429.7	8 310.3	5.2
1997	196.3	38.4	7.5	46.5	14.5	74.5	38.6	15.9	432.1	8 306.6	5.2
1998	192.9	30.4	8.0	46.9	12.4	79.1	36.9	20.0	426.6	8 555.6	5.0
1999	207.8	27.8	8.5	45.1	11.4	73.9	45.7	25.4	445.6	8 692.1	5.1
2000	207.2	30.4	9.7	56.7	8.2	82.7	35.7	30.6	463.8	8 990.3	5.2
2001	216.0	28.8	11.2	53.8	8.2	81.9	38.0	27.1	466.8	9 043.9	5.2
2002	205.9	28.4	8.4	46.0	7.1	79.4	36.7	28.0	442.4	9 230.0	4.8
2003	219.4	32.9	8.7	48.7	8.3	78.8	39.9	27.3	464.8	9 415.2	4.9
2004	222.0	29.9	13.7	40.9	9.3	82.9	40.1	36.8	493.9	9 564.3	5.2
2005	217.0	30.5	8.8	50.8	7.5	87.3	42.7	41.7	501.1	9 990.1	5.0
2006	232.9	33.3	12.4	45.9	7.8	76.1	45.8	43.9	508.6	10 242.6	5.0
2007	236.7	30.8	12.9	47.1	14.1	88.9	45.2	48.7	541.6	10 547.3	5.1
2008	230.4	49.0	9.4	49.3	9.0	98.0	56.6	57.3	571.0	10 848.7	5.3
2009	235.0	53.1	8.4	50.7	11.8	99.2	71.6	25.2	578.7	10 858.0	5.3
2010	219.0	47.3	7.2	51.9	9.4	93.9	79.6	43.3	567.5	11 137.1	5.1
2011	237.7	46.6	8.9	56.3	10.8	91.1	67.9	47.9	581.8	11 305.5	5.1
2012	226.5	46.6	8.3	49.0	9.6	76.3	65.3	53.2	553.3	11 411.3	4.8

<sup>a</sup> Subject to sampling variability too high for most practical purposes.

<sup>4</sup> See end notes.

Source: ABS (2012i).

**Table I 1.2b** Australian employment, major infrastructure industries—energy

August reference month	Energy Total Employment						Total	Total Aust employment	Energy as % of total employment
	Mining		Petroleum and coal product manufacturing	Electricity supply	Gas supply				
	Coal mining	Oil and gas extraction							
<i>thousands</i>									
1985	37.2	<sup>a</sup> 2.3	6.7	81.4	10.5	138.0	6 675.5	2.1	
1986 <b>4</b>	32.2	<sup>a</sup> 1.5	6.0	84.2	9.6	133.5	6 918.5	1.9	
1987	39.2	<sup>a</sup> 1.7	6.2	72.8	11.2	131.0	7 092.3	1.8	
1988	33.2	<sup>a</sup> 3.8	5.1	73.8	8.4	124.3	7 353.3	1.7	
1989	28.8	<sup>a</sup> 3.4	7.5	66.9	10.4	117.2	7 715.3	1.5	
1990	28.2	4.5	9.5	62.3	5.2	109.6	7 808.0	1.4	
1991	33.2	5.2	6.6	62.8	7.2	115.1	7 629.3	1.5	
1992	26.2	6.7	9.1	62.3	8.3	112.7	7 617.5	1.5	
1993	29.5	<sup>a</sup> 3.1	6.4	54.9	7.8	101.7	7 620.9	1.3	
1994	22.6	<sup>a</sup> 2.7	7.6	55.6	8.1	96.7	7 885.7	1.2	
1995	24.1	4.0	5.2	49.3	7.6	90.1	8 218.7	1.1	
1996	20.6	<sup>a</sup> 2.6	7.4	38.8	7.6	77.0	8 310.3	0.9	
1997	22.8	<sup>a</sup> 3.5	8.9	37.6	6.4	79.3	8 306.6	1.0	
1998	19.6	5.9	6.6	37.6	6.0	75.8	8 555.6	0.9	
1999	18.6	<sup>a</sup> 4.0	6.3	38.3	5.6	72.7	8 692.1	0.8	
2000	16.4	6.0	9.9	36.5	<sup>a</sup> 2.9	71.6	8 990.3	0.8	
2001	22.1	<sup>a</sup> 4.0	13.8	44.9	5.0	89.8	9 043.9	1.0	
2002	17.5	<sup>a</sup> 4.8	13.2	37.4	6.0	78.9	9 230.0	0.9	
2003	20.3	5.4	6.2	58.0	5.1	95.0	9 415.2	1.0	
2004	18.5	5.5	8.2	41.2	<sup>a</sup> 4.0	77.3	9 564.3	0.8	
2005	28.0	7.3	7.8	45.9	7.2	96.3	9 990.1	1.0	
2006	29.2	8.7	10.0	36.5	6.7	91.1	10 242.6	0.9	
2007	25.0	10.6	7.0	40.6	10.3	93.5	10 547.3	0.9	
2008	35.7	14.3	<sup>a</sup> 5.7	46.4	10.6	112.7	10 848.7	1.0	
2009	41.6	11.7	<sup>a</sup> 6.0	61.1	9.9	130.3	10 858.0	1.2	
2010	44.7	15.6	6.6	68.8	7.4	143.1	11 137.1	1.3	
2011	54.6	14.5	11.2	61.7	10.3	152.4	11 305.5	1.3	
2012	49.3	17.0	11.9	72.0	10.5	160.7	11 411.3	1.4	

**a** Subject to sampling variability too high for most practical purposes.

**4** See end notes.

Source: ABS (2012).

**Table I 1.2c** Australian employment, major infrastructure industries—  
communication

August reference month	Communication Total Employment			Total Aust employment	Communication services as % of total employment
	Telecommunication services	Internet service providers, web search portals and data processing services	Total		
	<i>thousands</i>				<i>%</i>
1985	79.0	7.6	86.6	6 675.5	1.3
1986 <sup>4</sup>	79.0	7.7	86.7	6 918.5	1.3
1987	73.8	7.5	81.4	7 092.3	1.1
1988	71.4	7.5	78.9	7 353.3	1.1
1989	73.8	7.9	81.7	7 715.3	1.1
1990	76.7	8.3	85.0	7 808.0	1.1
1991	69.8	7.8	77.6	7 629.3	1.0
1992	60.9	7.3	68.2	7 617.5	0.9
1993	60.5	7.3	67.9	7 620.9	0.9
1994	74.2	9.5	83.7	7 885.7	1.1
1995	79.8	11.0	90.9	8 218.7	1.1
1996	91.5	12.7	104.3	8 310.3	1.3
1997	75.3	13.0	88.3	8 306.6	1.1
1998	70.8	14.5	85.4	8 555.6	1.0
1999	73.3	14.2	87.5	8 692.1	1.0
2000	89.2	20.5	109.7	8 990.3	1.2
2001	86.4	19.5	106.0	9 043.9	1.2
2002	86.3	21.0	107.3	9 230.0	1.2
2003	93.6	20.7	114.3	9 415.2	1.2
2004	89.3	18.9	108.2	9 564.3	1.1
2005	96.8	20.0	116.8	9 990.1	1.2
2006	98.9	21.7	120.6	10 242.6	1.2
2007	97.4	23.4	120.8	10 547.3	1.1
2008	97.2	16.2	113.4	10 848.7	1.0
2009	85.5	<sup>a</sup> 7.6	93.1	10 858.0	0.9
2010	90.5	8.1	98.7	11 137.1	0.9
2011	92.0	8.7	100.7	11 305.5	0.9
2012	102.4	7.7	110.1	11 411.3	1.0

<sup>a</sup> Subject to sampling variability too high for most practical purposes.

<sup>4</sup> See end notes.

Source: ABS (2012i).

**Table I 1.2d** Australian employment, major infrastructure industries—water

August reference month	Water supply, sewerage and drainage services	Total Aust employment	Water supply, sewerage and drainage services as % of total employment
		<i>thousands</i>	<i>%</i>
1985	46.8	6 675.5	0.7
1986 <sup>4</sup>	43.7	6 918.5	0.6
1987	35.7	7 092.3	0.5
1988	31.8	7 353.3	0.4
1989	35.5	7 715.3	0.5
1990	36.5	7 808.0	0.5
1991	32.6	7 629.3	0.4
1992	33.7	7 617.5	0.4
1993	32.1	7 620.9	0.4
1994	28.5	7 885.7	0.4
1995	27.7	8 218.7	0.3
1996	21.8	8 310.3	0.3
1997	22.0	8 306.6	0.3
1998	25.7	8 555.6	0.3
1999	22.8	8 692.1	0.3
2000	25.1	8 990.3	0.3
2001	20.7	9 043.9	0.2
2002	23.4	9 230.0	0.3
2003	18.9	9 415.2	0.2
2004	24.0	9 564.3	0.3
2005	26.5	9 990.1	0.3
2006	30.2	10 242.6	0.3
2007	25.7	10 547.3	0.2
2008	36.7	10 848.7	0.3
2009	28.2	10 858.0	0.3
2010	38.8	11 137.1	0.3
2011	33.8	11 305.5	0.3
2012	38.7	11 411.3	0.3

<sup>4</sup> See end notes.

Source: ABS (2012).





**Table I 1.3d Australian average weekly earnings,<sup>5</sup> water industry**

May reference month	Water supply, sewerage and drainage services	All industries
	\$	\$
1996	732.4	573.7
1998	807.7	610.2
2000	806.4	652.8
2002	1 022.4	697.6
2004	1 020.7	756.5
2006 <b>6</b>	1 074.9	822.5
2008	1 130.7	915.3
2010	1 411.0	970.7
2012	1 584.6	1 080.0

**5, 6** See end notes.

Source: ABS (2012g) and unpublished data.

**Table I 1.4a Australian producer price indexes, transport industry**

Financial year	Transport					Water transport support services			Airport operations and other air transport support services	Customs agency services
	Road freight	Rail freight	Water freight	Pipeline transport	Postal and courier services	Stevedoring services	Port and water transport terminal operations	Other water transport support services		
<i>base of each index: 2011–12 = 100</i>										
1996–97		79.4				108.4				
1997–98	64.8	76.1				102.0				
1998–99	65.6	72.4	90.7			100.3		74.4	94.3	82.3
1999–00	66.2	68.3	94.2			100.3		69.6	91.7	82.3
2000–01	67.6	69.0	99.7	72.2		98.1		69.7	87.1	83.7
2001–02	68.8	68.6	99.3	73.0	77.6	95.9	62.8	69.7	86.3	84.1
2002–03	70.4	68.6	96.5	73.3	79.1	93.7	63.2	72.8	91.2	85.6
2003–04	72.3	69.2	95.5	72.1	80.5	92.1	63.1	73.8	90.7	86.6
2004–05	75.9	70.0	103.8	76.5	82.2	95.4	66.1	75.1	91.5	88.2
2005–06	80.6	70.9	101.0	76.2	84.1	94.6	67.5	75.0	95.1	90.1
2006–07	83.2	72.4	100.3	76.4	85.7	98.9	72.9	80.5	94.2	90.9
2007–08	86.4	73.8	98.5	79.4	86.6	97.2	75.9	80.1	96.9	91.7
2008–09	92.5	80.3	108.9	89.5	90.2	98.9	80.0	81.2	97.3	94.1
2009–10	92.0	86.8	99.3	92.5	91.5	100.4	89.9	88.3	98.6	95.0
2010–11	95.9	91.8	97.3	96.6	96.4	99.6	96.2	96.9	99.2	96.4
2011–12	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2012–13	104.2	101.9	107.8	103.1	101.6	102.4	108.6	103.8	102.7	100.3

Note: Data are not readily available for missing years.

Source: ABS (2012–13k).

**Table I 1.4b** Australian producer price indexes, communications industry

Financial year	Data processing and web hosting services	Electronic information storage services
	<i>base of each index 2011–12 = 100</i>	
1998–99		110.6
1999–00		109.6
2000–01		104.1
2001–02	83.7	103.8
2002–03	85.1	102.8
2003–04	86.1	105.3
2004–05	86.4	105.5
2005–06	91.8	107.4
2006–07	93.4	103.5
2007–08	94.2	102.1
2008–09	95.2	101.9
2009–10	95.7	99.9
2010–11	98.7	98.6
2011–12	100.0	100.0
2012–13	103.0	98.1

Note: Data are not readily available for missing years.

Source: ABS (2012–13k).

**Table I 1.5a** Australian population, by state/territory—capital city

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT 7,8
1970–71	2 977 300	2 515 400	891 100	850 700	711 800	153 100	37 100	160 800
1971–72	3 017 700	2 559 000	915 900	864 100	734 700	153 800	39 900	174 150
1972–73	3 040 800	2 597 200	941 800	877 800	751 700	155 500	42 800	185 100
1973–74	3 063 300	2 632 100	967 400	892 700	775 000	157 800	46 700	197 400
1974–75	3 082 500	2 658 800	979 000	905 100	799 600	160 600	25 700	209 900
1975–76	3 143 800	2 723 700	1 000 900	924 000	832 800	164 400	44 200	226 500
1976–77	3 168 100	2 740 800	1 012 200	934 200	851 800	165 800		232 600
1977–78	3 197 700	2 757 200	1 028 300	942 900	869 000	167 300		236 900
1978–79	3 226 800	2 771 000	1 046 400	944 800	882 900	168 400		239 700
1979–80	3 257 500	2 787 400	1 063 300	948 000	899 400	169 400		243 200
1980–81	3 279 500	2 806 300	1 096 200	953 700	922 000	171 100	56 400	246 500
1981–82	3 318 700	2 833 800	1 128 700	962 500	952 400	172 200	61 800	252 100
1982–83	3 350 700	2 861 700	1 148 300	973 400	976 800	173 400	65 100	258 400
1983–84	3 382 900	2 884 600	1 161 200	984 300	995 600	175 500	68 900	265 200
1984–85	3 425 200	2 909 100	1 176 500	994 000	1 018 200	177 500	72 200	272 300
1985–86	3 471 567	2 966 901	1 217 348	1 003 548	1 050 120	182 071	75 360	257 852
1986–87	3 528 486	3 003 582	1 238 378	1 011 904	1 079 603	183 321	77 047	264 405
1987–88	3 590 980	3 042 608	1 264 491	1 021 117	1 110 469	184 186	75 888	271 044
1988–89	3 622 859	3 085 580	1 300 218	1 033 471	1 147 375	185 938	76 025	275 334
1989–90	3 643 660	3 125 919	1 330 879	1 044 602	1 175 362	189 039	76 542	281 099
1990–91 9	3 672 855	3 155 576	1 357 993	1 056 561	1 188 762	190 739	86 415	288 195
1991–92	3 710 168	3 182 441	1 388 383	1 065 647	1 207 350	192 439	87 836	293 554
1992–93	3 734 809	3 197 927	1 422 783	1 068 616	1 225 552	193 627	89 908	298 222
1993–94	3 769 641	3 213 021	1 455 195	1 071 672	1 246 266	194 519	91 133	301 131
1994–95	3 821 233	3 243 707	1 486 730	1 074 679	1 271 738	195 026	93 238	304 463
1995–96 10	3 881 136	3 283 278	1 500 803	1 078 437	1 295 092	195 718	95 829	307 917
1996–97	3 928 658	3 309 601	1 524 315	1 083 906	1 316 274	195 976	98 891	308 700
1997–98	3 969 649	3 342 230	1 548 584	1 090 526	1 334 992	195 913	101 165	309 539
1998–99	4 019 954	3 379 714	1 572 204	1 096 934	1 355 373	196 011	103 064	311 967
1999–00	4 069 093	3 422 722	1 598 585	1 102 445	1 372 947	196 468	105 113	314 848
2000–01	4 128 272	3 471 625	1 663 120	1 107 986	1 393 002	197 282	106 842	318 939
2001–02	4 162 999	3 523 946	1 701 606	1 114 990	1 413 867	197 931	107 443	322 316
2002–03	4 190 874	3 577 411	1 744 111	1 121 742	1 435 907	199 853	107 440	325 340
2003–04	4 214 248	3 626 003	1 784 931	1 127 198	1 460 329	202 089	108 606	327 156
2004–05	4 245 045	3 680 609	1 822 074	1 134 513	1 485 823	203 467	111 258	329 865
2005–06	4 281 988	3 743 015	1 857 830	1 145 812	1 518 748	205 481	114 362	333 839
2006–07	4 344 675	3 817 806	1 902 235	1 159 131	1 559 178	207 330	117 333	340 766
2007–08	4 419 075	3 902 059	1 952 158	1 172 559	1 606 827	209 451	121 027	345 999
2008–09	4 499 888	3 998 022	2 004 225	1 188 139	1 658 520	212 019	124 909	351 964
2009–10	4 567 578	4 070 514	2 039 379	1 202 357	1 696 043	214 551	127 397	358 494
2010–11	4 605 992	4 169 103	2 146 577	1 262 940	1 832 114	216 276	129 062	367 752
2011–12 11	4 667 283	4 246 345	2 189 878	1 277 174	1 897 548	216 959	131 678	374 658

7,8,9,10,11 See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013d).

**Table I 1.5b** Australian population, by state/territory—rest of state<sup>12</sup>

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT 7,8
1970–71	1 748 203	1 085 952	960 385	349 414	342 034	244 973	48 635	
1971–72	1 777 406	1 102 254	982 578	350 528	347 317	246 508	52 181	
1972–73	1 801 098	1 110 453	1 010 151	350 675	349 341	247 587	54 327	
1973–74	1 830 753	1 123 626	1 040 940	348 838	352 598	248 351	56 224	
1974–75	1 849 516	1 128 641	1 072 362	360 164	355 348	249 488	67 169	
1975–76	1 815 788	1 086 726	1 091 475	350 070	345 542	247 914	54 028	
1976–77	1 833 788	1 096 564	1 117 639	351 919	352 566	249 232		
1977–78	1 856 090	1 106 559	1 143 747	353 305	358 851	250 342		
1978–79	1 884 330	1 115 406	1 168 371	356 309	363 711	252 356		
1979–80	1 914 027	1 126 903	1 202 635	360 397	369 668	254 190		
1980–81	1 955 389	1 140 617	1 249 008	365 069	378 056	256 124	66 216	
1981–82	1 984 880	1 159 070	1 295 886	368 608	386 499	257 645	68 514	
1982–83	2 002 259	1 174 002	1 333 982	372 375	392 250	259 405	70 816	
1983–84	2 019 829	1 191 892	1 362 659	375 748	395 637	262 260	73 254	
1984–85	2 039 312	1 210 968	1 394 718	377 197	400 364	265 328	76 336	
1985–86	2 059 959	1 193 955	1 407 247	379 002	408 899	264 402	79 061	
1986–87	2 088 250	1 206 529	1 436 729	380 860	416 645	265 905	81 158	
1987–88	2 116 329	1 219 961	1 475 416	383 792	424 698	266 962	83 138	
1988–89	2 153 424	1 234 584	1 527 419	385 558	431 059	269 320	85 154	
1989–90	2 190 361	1 252 673	1 568 404	387 454	437 687	273 149	87 186	
1990–91 <b>9</b>	2 225 876	1 264 797	1 602 958	389 738	447 305	276 063	79 078	1 125
1991–92	2 252 401	1 272 561	1 641 567	390 865	450 695	277 387	80 250	1 120
1992–93	2 270 071	1 274 460	1 687 005	392 058	452 117	278 032	80 826	1 080
1993–94	2 290 549	1 274 549	1 731 918	394 466	456 743	278 420	82 242	355
1994–95	2 305 748	1 273 680	1 778 379	394 750	462 049	278 647	84 314	342
1995–96 <b>10</b>	2 323 592	1 276 877	1 837 887	395 816	470 164	278 725	86 014	334
1996–97	2 348 303	1 287 600	1 870 356	397 451	478 718	277 629	88 021	342
1997–98	2 369 422	1 295 590	1 899 141	399 026	487 676	276 054	88 715	349
1998–99	2 391 416	1 306 688	1 929 217	400 885	494 360	275 419	89 671	359
1999–00	2 417 120	1 318 617	1 962 952	402 593	501 512	274 941	90 448	367
2000–01	2 446 945	1 333 101	1 965 826	403 742	508 157	274 513	90 926	378
2001–02	2 465 952	1 339 138	2 013 192	406 137	512 244	274 835	91 968	359
2002–03	2 481 703	1 346 074	2 065 103	409 536	517 163	277 793	92 606	321
2003–04	2 492 941	1 355 464	2 115 979	413 236	522 308	280 681	93 457	319
2004–05	2 511 412	1 367 993	2 172 784	418 001	531 265	282 860	95 115	299
2005–06	2 534 099	1 383 525	2 233 078	422 076	540 633	284 470	96 265	280
2006–07	2 560 267	1 403 504	2 293 746	426 663	553 789	285 874	97 471	288
2007–08	2 595 812	1 424 919	2 356 412	431 426	570 153	288 471	99 476	295
2008–09	2 627 280	1 448 590	2 420 542	436 373	585 916	291 273	101 298	321
2009–10	2 652 442	1 466 546	2 466 054	441 093	597 444	292 730	102 071	350
2010–11	2 605 476	1 365 423	2 327 521	375 292	520 101	294 919	102 269	0
2012–12 <b>11</b>	2 623 062	1 377 147	2 370 181	377 604	532 704	295 060	103 158	0

7, 8, 9, 10, 11, 12 See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013d).

**Table I 1.5c Australian population, by state/territory—total**

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT 7,8
1970–71	4 725 503	3 601 352	1 851 485	1 200 114	1 053 834	398 073	85 735	151 169
1971–72	4 795 106	3 661 254	1 898 478	1 214 628	1 082 017	400 308	92 081	159 792
1972–73	4 841 898	3 707 653	1 951 951	1 228 475	1 101 041	403 087	97 127	173 306
1973–74	4 894 053	3 755 726	2 008 340	1 241 538	1 127 598	406 151	102 924	186 241
1974–75	4 932 016	3 787 441	2 051 362	1 265 264	1 154 948	410 088	92 869	199 007
1975–76	4 959 588	3 810 426	2 092 375	1 274 070	1 178 342	412 314	98 228	207 740
1976–77	5 001 888	3 837 364	2 129 839	1 286 119	1 204 366	415 032	103 938	213 688
1977–78	5 053 790	3 863 759	2 172 047	1 296 205	1 227 851	417 642	109 980	217 981
1978–79	5 111 130	3 886 406	2 214 771	1 301 109	1 246 611	420 756	114 149	220 797
1979–80	5 171 527	3 914 303	2 265 935	1 308 397	1 269 068	423 590	118 245	224 291
1980–81	5 234 889	3 946 917	2 345 208	1 318 769	1 300 056	427 224	122 616	227 581
1981–82	5 303 580	3 992 870	2 424 586	1 331 108	1 338 899	429 845	130 314	233 045
1982–83	5 352 959	4 035 702	2 482 282	1 345 775	1 369 050	432 805	135 916	238 983
1983–84	5 402 729	4 076 492	2 523 859	1 360 048	1 391 237	437 760	142 154	245 112
1984–85	5 464 512	4 120 068	2 571 218	1 371 197	1 418 564	442 828	148 536	251 389
1985–86	5 531 526	4 160 856	2 624 595	1 382 550	1 459 019	446 473	154 421	258 910
1986–87	5 616 736	4 210 111	2 675 107	1 392 764	1 496 248	449 226	158 205	265 477
1987–88	5 707 309	4 262 569	2 739 907	1 404 909	1 535 167	451 148	159 026	272 129
1988–89	5 776 283	4 320 164	2 827 637	1 419 029	1 578 434	455 258	161 179	276 432
1989–90	5 834 021	4 378 592	2 899 283	1 432 056	1 613 049	462 188	163 728	282 211
1990–91	5 898 731	4 420 373	2 960 951	1 446 299	1 636 067	466 802	165 493	289 320
1991–92	5 962 569	4 455 002	3 029 950	1 456 512	1 658 045	469 826	168 086	294 674
1992–93	6 004 880	4 472 387	3 109 788	1 460 674	1 677 669	471 659	170 734	299 302
1993–94	6 060 190	4 487 570	3 187 113	1 466 138	1 703 009	472 939	173 375	301 486
1994–95	6 126 981	4 517 387	3 265 109	1 469 429	1 733 787	473 673	177 552	304 805
1995–96	6 204 728	4 560 155	3 338 690	1 474 253	1 765 256	474 443	181 843	308 251
1996–97	6 276 961	4 597 201	3 394 671	1 481 357	1 794 992	473 605	186 912	309 042
1997–98	6 339 071	4 637 820	3 447 725	1 489 552	1 822 668	471 967	189 880	309 888
1998–99	6 411 370	4 686 402	3 501 421	1 497 819	1 849 733	471 430	192 735	312 326
1999–00	6 486 213	4 741 339	3 561 537	1 505 038	1 874 459	471 409	195 561	315 215
2000–01	6 575 217	4 804 726	3 628 946	1 511 728	1 901 159	471 795	197 768	319 317
2001–02	6 628 951	4 863 084	3 714 798	1 521 127	1 926 111	472 766	199 411	322 675
2002–03	6 672 577	4 923 485	3 809 214	1 531 278	1 953 070	477 646	200 046	325 661
2003–04	6 707 189	4 981 467	3 900 910	1 540 434	1 982 637	482 770	202 063	327 475
2004–05	6 756 457	5 048 602	3 994 858	1 552 514	2 017 088	486 327	206 373	330 164
2005–06	6 816 087	5 126 540	4 090 908	1 567 888	2 059 381	489 951	210 627	334 119
2006–07	6 904 942	5 221 310	4 195 981	1 585 794	2 112 967	493 204	214 804	341 054
2007–08	7 014 887	5 326 978	4 308 570	1 603 985	2 176 980	497 922	220 503	346 294
2008–09	7 127 168	5 446 612	4 424 767	1 624 512	2 244 436	503 292	226 207	352 285
2009–10	7 220 020	5 537 060	4 505 433	1 643 450	2 293 487	507 281	229 468	358 844
2010–11	7 211 468	5 534 526	4 474 098	1 638 232	2 352 215	511 195	231 331	367 752
2011–12 <b>11</b>	7 290 345	5 623 492	4 560 059	1 654 778	2 430 252	512 019	234 836	374 658

7,8, 11 See end notes.

Source: ABS (2013d).

**Table I 1.6** Key indicators influencing Australian infrastructure

Financial year	Goods exports	Goods imports	Consumer Price Index, annual percentage change	Rate at close of financial year	
				Exchange rate 13	Interest rate 14
		\$ million	%	1\$A=\$US	%
1971–72	4 766	-3 814	7.0	1.2	5.8
1972–73	6 110	-3 831	6.1	1.4	6.4
1973–74	6 861	-5 795	12.7	1.5	18.8
1974–75	8 656	-7 728	17.0	1.3	8.8
1975–76	9 628	-7 999	12.8	1.2	10.3
1976–77	11 618	-10 428	13.7	1.1	11.0
1977–78	12 208	-11 242	9.7	1.1	10.6
1978–79	14 292	-13 506	8.0	1.1	10.3
1979–80	18 946	-16 066	10.3	1.2	13.8
1980–81	19 095	-19 486	9.2	1.1	15.6
1981–82	19 742	-22 662	10.5	1.0	18.6
1982–83	21 313	-22 006	11.5	0.9	14.2
1983–84	24 049	-23 731	6.9	0.9	12.8
1984–85	30 200	-30 358	4.3	0.7	15.8
1985–86	32 603	-35 986	8.4	0.7	14.7
1986–87	36 406	-37 251	9.3	0.7	13.7
1987–88	41 915	-40 564	7.4	0.8	13.1
1988–89	44 292	-47 199	7.3	0.8	18.4
1989–90	49 027	-51 245	8.1	0.8	15.0
1990–91	52 685	-49 625	5.3	0.8	10.4
1991–92	55 537	-51 413	1.9	0.7	6.4
1992–93	60 787	-59 848	1.0	0.7	5.2
1993–94	64 514	-64 801	1.8	0.7	5.1
1994–95	67 191	-75 239	3.2	0.7	7.6
1995–96	76 309	-77 911	4.3	0.8	7.6
1996–97	81 057	-79 449	1.3	0.7	5.4
1997–98	88 583	-92 034	-0.0	0.6	5.3
1998–99	85 636	-97 918	1.3	0.7	4.9
1999–00	97 685	-110 259	2.4	0.6	6.2
2000–01	120 201	-120 360	6.0	0.5	5.0
2001–02	121 067	-121 716	2.9	0.6	5.1
2002–03	115 895	-134 160	3.0	0.7	4.7
2003–04	109 418	-132 875	2.4	0.7	5.5
2004–05	127 811	-150 694	2.4	0.8	5.7
2005–06	154 044	-169 379	3.2	0.7	6.0
2006–07	169 620	-183 554	3.0	0.8	6.4
2007–08	182 922	-205 149	3.4	1.0	7.8
2008–09	231 615	-221 518	3.1	0.8	3.3
2009–10	201 777	-205 499	2.3	0.9	4.9
2010–11	246 979	-218 751	3.1	1.1	5.0
2011–12	265 222	-250 179	2.3	1.0	3.5
2012–13			2.3	0.9275	2.80

13, 14 See end notes.

Note: Data are not yet available for missing years.

Source: ABS (2012d), ABS (2012–13f) and RBA (2013).





## CHAPTER 2

# Infrastructure construction

**Table I 2.1a** Value of major infrastructure engineering construction work done by the private sector for the private sector, adjusted by chain volume index

Financial year	Transport	Energy	Telecommunications	Water	Total major infrastructure engineering construction work done
	<i>\$ million</i>				
1986–87	1 469.6	409.3	27.6	178.9	2 085.4
1987–88	1 658.2	397.7	13.9	234.8	2 304.6
1988–89	1 882.7	370.3	14.7	246.2	2 513.8
1989–90	2 197.1	285.4	11.7	239.2	2 733.4
1990–91	1 932.9	285.7	15.5	340.3	2 574.4
1991–92	1 889.5	337.9	11.6	197.6	2 436.6
1992–93	1 738.9	451.8	117.3	264.9	2 572.8
1993–94	2 135.2	493.3	139.9	429.3	3 197.7
1994–95	1 943.8	554.5	120.5	563.2	3 182.0
1995–96	1 995.2	1 162.9	316.1	652.5	4 126.6
1996–97	2 686.9	1 049.4	268.8	317.3	4 322.4
1997–98	3 586.7	1 434.5	107.1	384.6	5 513.0
1998–99	4 045.2	1 801.4	173.6	346.6	6 366.8
1999–00	3 080.6	2 657.8	526.4	483.2	6 748.0
2000–01	2 141.5	2 468.4	914.8	547.5	6 072.2
2001–02	2 804.2	2 659.2	521.0	426.7	6 411.3
2002–03	4 457.1	3 106.2	494.5	618.6	8 676.3
2003–04	6 139.2	3 865.5	1 040.1	1 045.0	12 089.7
2004–05	8 213.2	3 604.9	1 185.4	830.5	13 834.0
2005–06	8 440.2	3 504.2	1 473.2	933.2	14 350.8
2006–07	8 278.8	4 357.9	3 804.0	935.5	17 376.1
2007–08	8 032.6	4 473.7	4 530.9	1 693.8	18 731.1
2008–09	8 550.9	5 990.6	3 872.3	1 594.4	20 008.2
2009–10	7 719.7	5 292.3	3 684.6	2 272.0	18 968.7
2010–11	10 222.6	5 946.6	3 629.7	3 599.4	23 398.3
2011–12	14 063.4	6 985.9	4 295.4	2 665.3	28 010.1

Source: ABS (2013a), adjusted by chain volume index.

**Table 1 2.1b** Value of major infrastructure engineering construction work done by the private sector for the public sector, adjusted by chain volume index

Financial year	Transport	Energy	Telecommunications	Water	Total major infrastructure engineering construction work done
<i>\$ million</i>					
1986–87	2 554.8	1 329.3	71.8	748.8	4 704.8
1987–88	1 839.2	862.5	54.4	714.1	3 470.3
1988–89	1 677.4	849.0	12.4	578.9	3 117.7
1989–90	1 940.0	790.6	19.2	594.4	3 344.2
1990–91	2 160.0	1 151.6	36.2	751.9	4 099.8
1991–92	2 133.2	1 215.2	52.4	773.6	4 174.5
1992–93	2 675.5	1 041.9	38.5	762.6	4 518.5
1993–94	3 306.4	952.1	51.8	980.2	5 290.5
1994–95	3 082.4	778.8	19.8	743.8	4 624.8
1995–96	2 945.0	847.9	41.9	677.9	4 512.7
1996–97	3 433.3	947.4	11.3	609.7	5 001.7
1997–98	4 152.0	674.1	50.4	650.8	5 527.3
1998–99	4 710.3	409.9	33.9	751.3	5 905.5
1999–00	4 370.5	449.9	199.4	1 294.4	6 314.1
2000–01	3 993.1	405.5	382.2	1 079.1	5 859.8
2001–02	3 372.4	531.9	462.0	794.8	5 161.0
2002–03	3 442.9	614.9	390.7	842.2	5 290.7
2003–04	3 576.1	381.1	60.0	1 226.4	5 243.5
2004–05	4 797.1	646.2	206.6	1 387.6	7 037.5
2005–06	5 396.5	873.7	70.8	1 218.4	7 559.3
2006–07	5 946.4	563.9	43.2	1 385.9	7 939.4
2007–08	6 517.4	461.4	25.9	4 304.5	11 309.2
2008–09	8 863.2	664.7	49.7	4 266.7	13 844.2
2009–10	9 006.3	936.8	175.6	4 248.9	14 367.6
2010–11	10 751.7	981.5	265.8	3 108.2	15 107.1
2011–12	11 410.4	1 242.1	501.3	2 475.5	15 629.3

Source: ABS (2013a), adjusted by chain volume index.

**Table I 2.1c** Value of major infrastructure engineering construction work done by the public sector, adjusted by chain volume index

Financial year	Transport	Energy	Telecommunications	Water	Total major engineering construction work done
	<i>\$ million</i>				
1986–87	2 976.2	1 349.2	3 450.5	1 600.2	9 376.1
1987–88	2 800.1	1 340.6	3 192.2	1 312.8	8 645.7
1988–89	2 683.6	1 330.4	3 436.0	1 306.2	8 756.2
1989–90	3 116.0	1 837.7	3 770.0	1 296.7	10 020.4
1990–91	3 177.9	1 533.1	3 831.1	1 379.4	9 921.5
1991–92	2 877.4	1 379.2	2 928.9	1 292.4	8 477.9
1992–93	3 554.6	1 440.1	2 901.7	1 225.6	9 122.1
1993–94	3 755.5	1 468.5	2 620.1	897.3	8 741.5
1994–95	3 930.1	1 511.7	3 525.7	882.3	9 849.8
1995–96	4 178.4	1 129.7	4 084.9	680.1	10 073.2
1996–97	3 921.7	926.8	4 064.3	524.4	9 437.2
1997–98	3 569.3	1 001.6	4 169.1	668.7	9 408.8
1998–99	3 585.6	1 337.6	4 416.4	775.2	10 114.9
1999–00	3 519.1	1 639.6	5 120.3	927.1	11 206.2
2000–01	3 207.0	1 922.8	4 347.0	716.0	10 192.8
2001–02	3 422.9	2 068.5	3 970.5	675.0	10 136.9
2002–03	3 576.1	2 191.2	3 531.9	781.9	10 081.1
2003–04	3 623.5	2 504.2	2 963.7	754.8	9 846.2
2004–05	3 729.0	2 598.5	3 121.4	820.7	10 269.5
2005–06	3 746.7	3 662.1	4 174.8	953.3	12 536.8
2006–07	4 168.7	4 497.6	1 550.1	1 308.7	11 525.0
2007–08	4 653.6	4 750.9	7.1	1 756.3	11 168.1
2008–09	5 535.5	5 658.8	7.1	1 712.9	12 914.3
2009–10	6 165.6	6 027.1	10.0	2 393.8	14 596.5
2010–11	6 204.1	5 502.9	6.0	2 632.8	14 345.8
2011–12	6 590.6	5 725.4	4.6	2 527.0	14 847.6

Source: ABS (2013a), adjusted by chain volume index.

**Table 1 2.1d** Total value of major infrastructure engineering construction work done, adjusted by chain volume index

Financial year	Transport	Energy	Telecommunications	Water	Total major engineering construction work done
	<i>\$ million</i>				
1986–87	7 000.6	3 087.8	3 550.0	2 527.9	16 166.3
1987–88	6 297.6	2 600.8	3 260.6	2 261.7	14 420.7
1988–89	6 243.6	2 549.7	3 463.1	2 131.3	14 387.8
1989–90	7 253.1	2 913.8	3 800.9	2 130.2	16 098.0
1990–91	7 270.8	2 970.4	3 882.7	2 471.7	16 595.6
1991–92	6 900.1	2 932.3	2 992.9	2 263.6	15 088.9
1992–93	7 969.0	2 933.8	3 057.5	2 253.0	16 213.4
1993–94	9 197.1	2 913.9	2 811.8	2 306.9	17 229.8
1994–95	8 956.3	2 845.1	3 666.0	2 189.3	17 656.6
1995–96	9 118.5	3 140.4	4 443.0	2 010.5	18 712.5
1996–97	10 041.9	2 923.6	4 344.4	1 451.4	18 761.3
1997–98	11 308.1	3 110.2	4 326.6	1 704.1	20 449.0
1998–99	12 341.1	3 549.0	4 624.0	1 873.1	22 387.1
1999–00	10 970.2	4 747.3	5 846.1	2 704.7	24 268.3
2000–01	9 341.6	4 796.7	5 644.0	2 342.6	22 124.8
2001–02	9 599.5	5 259.7	4 953.5	1 896.5	21 709.2
2002–03	11 476.1	5 912.2	4 417.1	2 242.7	24 048.1
2003–04	13 338.7	6 750.9	4 063.8	3 026.1	27 179.5
2004–05	16 739.3	6 849.6	4 513.4	3 038.8	31 141.1
2005–06	17 583.4	8 040.0	5 718.7	3 104.9	34 447.0
2006–07	18 393.9	9 419.4	5 397.3	3 630.0	36 840.6
2007–08	19 203.7	9 686.1	4 563.9	7 754.7	41 208.3
2008–09	22 949.6	12 314.1	3 929.1	7 574.0	46 766.8
2009–10	22 891.6	12 256.3	3 870.2	8 914.8	47 932.8
2010–11	27 178.4	12 431.0	3 901.5	9 340.4	52 851.3
2011–12	32 064.4	13 953.4	4 801.3	7 667.9	58 486.9

Source: ABS (2013a), adjusted by chain volume index.

PART T: Transport

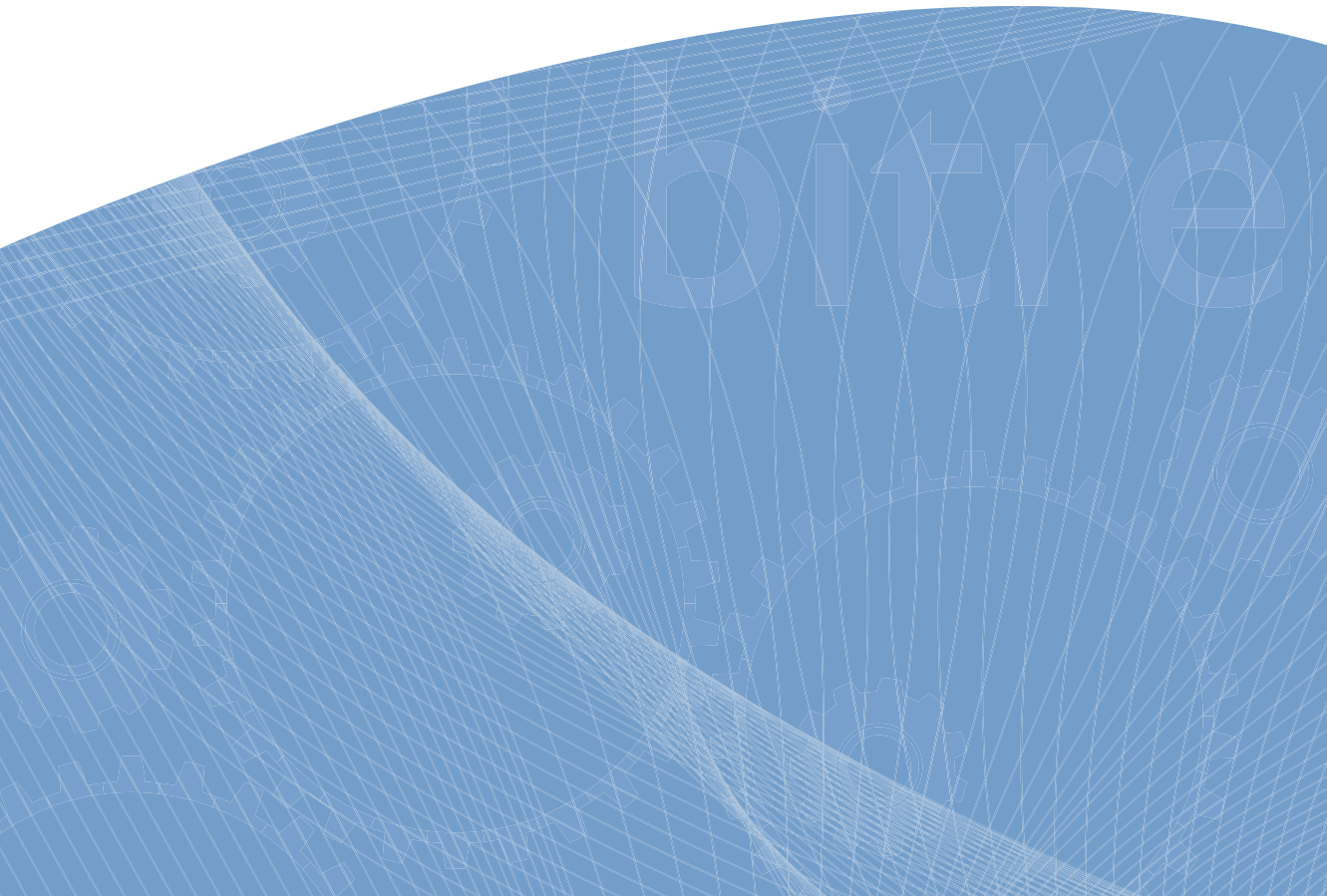
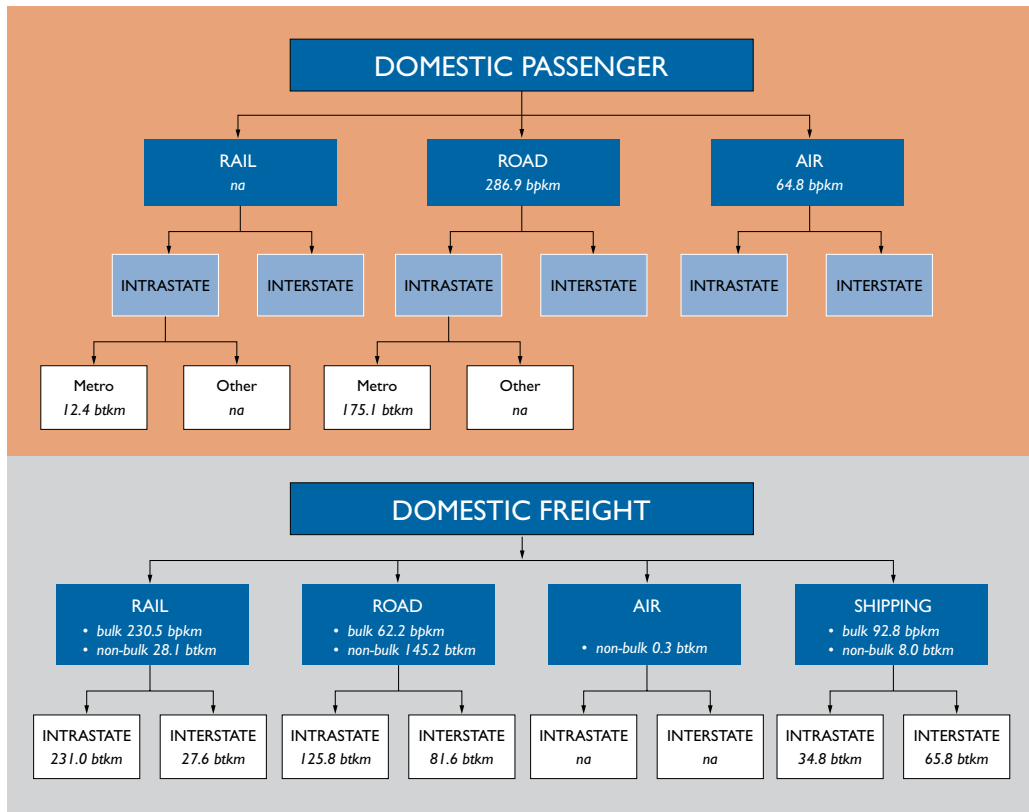


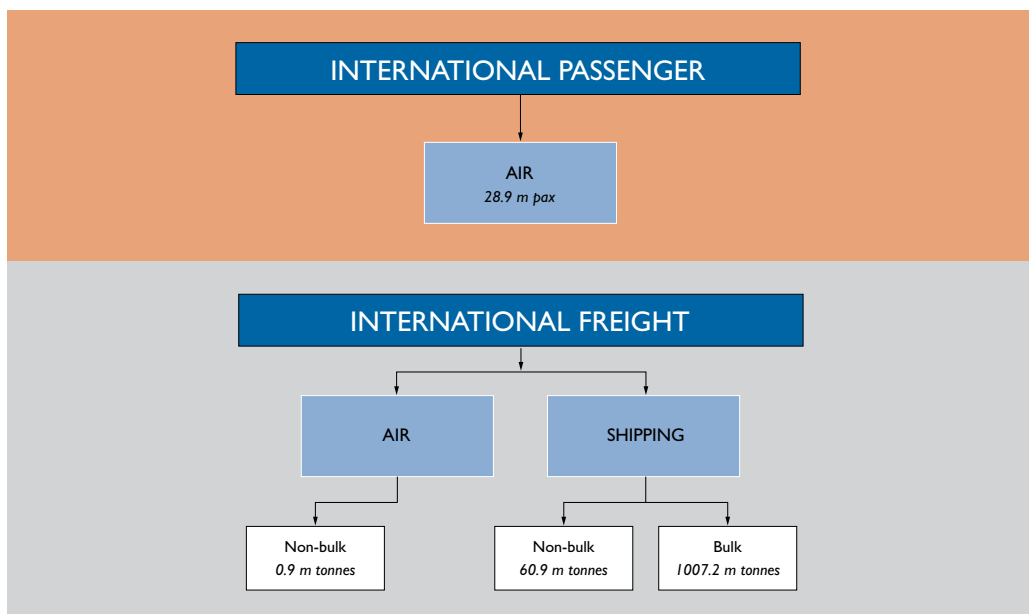
Figure T 1a Australia's domestic transport



Note: Metropolitan refers to the eight capital cities: Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Darwin and Canberra.

Note: Numbers are for 2011–12 except rail freight (2009–10).

Figure T 1b Australia's international transport

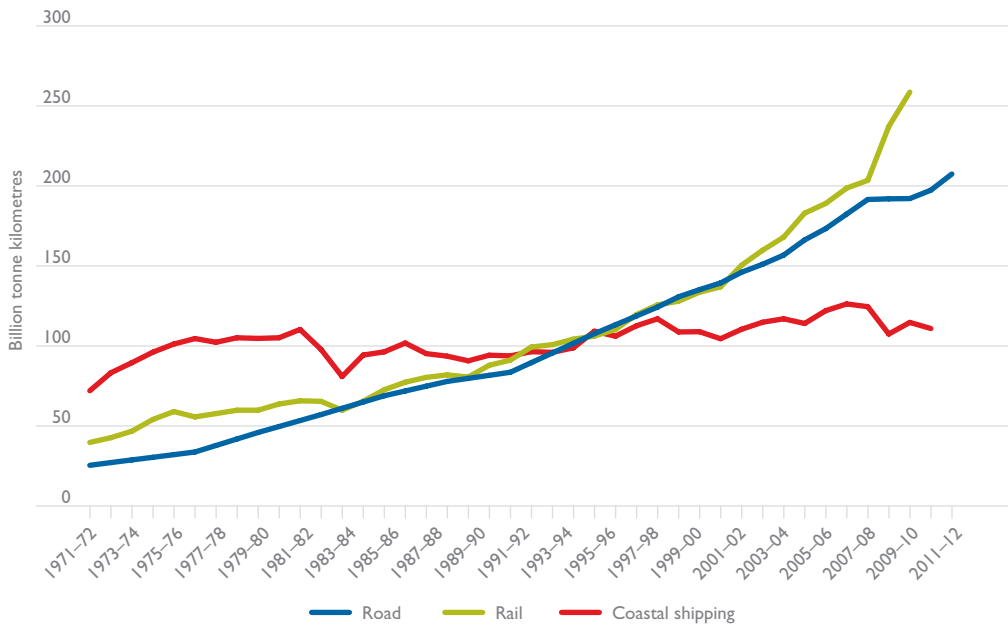


# PART T

## Transport

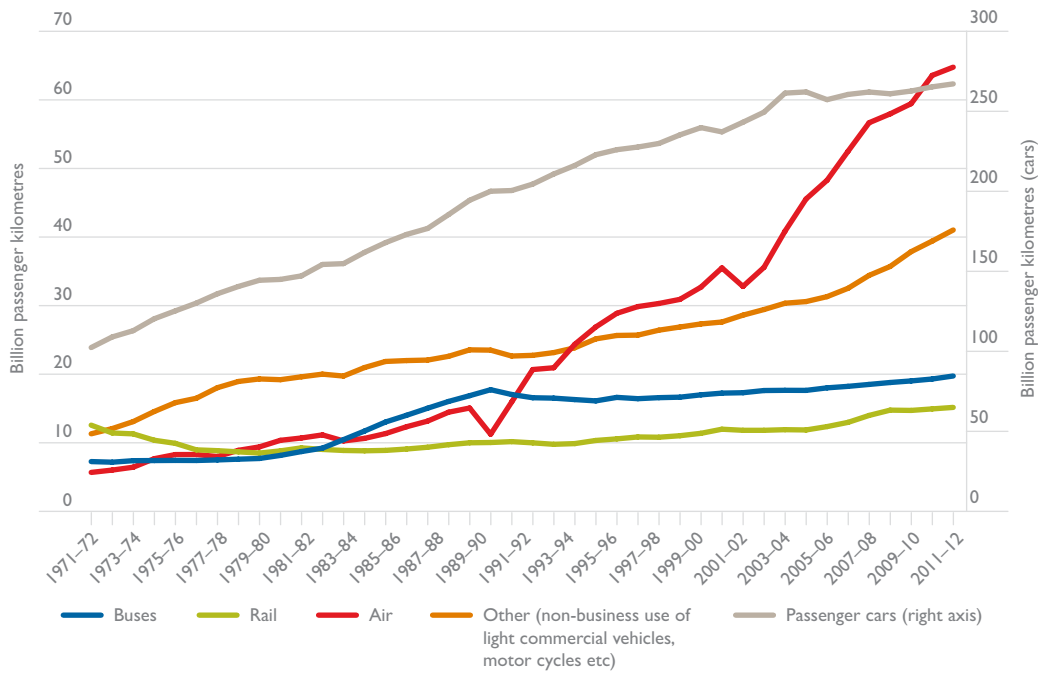
Statistics for Australian transport activity are provided from two perspectives: transportation activity measured in terms of what is being transported (freight or passengers), or transportation activity by mode (road, rail, aviation or shipping).

**Figure T 2** Australian domestic freight task, by mode of transport



Freight transport activity is measured in terms of tonne kilometres (the movement of one tonne of freight, one kilometre). The Australian domestic freight task has been increasing strongly for the last 40 years, with road and rail freight now dominating domestic freight activity. Coastal freight has grown at a slower rate.

**Figure T 3** Australian domestic passenger task, by mode of transport



Passenger transport activity is measured in terms of passenger kilometres (the movement of one passenger, one kilometre). The Australian domestic passenger task is dominated by road transport, mainly passenger cars (right axis), which remained relatively constant in the six years to 2009–10 but grew again in 2010–11 and 2011–12. Passenger travel on other modes increased in recent years, with travel by air increasing rapidly since 2001.



# CHAPTER I

## Transport infrastructure

**Table T 1.1a** Value of transport infrastructure engineering construction work done by the private sector for the private sector, adjusted by chain volume index

Financial year	Roads and bridges	Railways	Ports and harbours	Total major infrastructure engineering construction work done	Transport percentage of total
		<i>\$ million</i>			<i>per cent</i>
1986–87	935.7	185.3	348.6	2 085.4	70.47
1987–88	1 314.4	83.9	259.9	2 304.6	71.95
1988–89	1 791.0	40.9	50.7	2 513.8	74.89
1989–90	2 058.6	28.1	110.4	2 733.4	80.38
1990–91	1 816.0	30.9	86.0	2 574.4	75.08
1991–92	1 781.9	56.7	50.9	2 436.6	77.55
1992–93	1 662.1	21.3	55.5	2 572.8	67.59
1993–94	1 953.5	65.3	116.5	3 197.7	66.77
1994–95	1 854.3	47.2	42.3	3 182.0	61.09
1995–96	1 856.1	99.4	39.7	4 126.6	48.35
1996–97	2 429.2	128.8	128.9	4 322.4	62.16
1997–98	2 988.6	271.7	326.4	5 513.0	65.06
1998–99	3 496.3	247.0	301.9	6 366.8	63.54
1999–00	2 729.1	231.6	119.8	6 748.0	45.65
2000–01	1 879.3	132.6	129.7	6 072.2	35.27
2001–02	2 268.8	387.3	148.1	6 411.3	43.74
2002–03	3 532.3	732.3	192.6	8 676.3	51.37
2003–04	5 389.0	366.5	383.7	12 089.7	50.78
2004–05	6 618.1	621.9	973.2	13 834.0	59.37
2005–06	6 793.7	587.0	1 059.5	14 350.8	58.81
2006–07	6 051.4	1 104.2	1 123.2	17 376.1	47.64
2007–08	5 347.0	1 623.5	1 062.1	18 731.1	42.88
2008–09	6 134.8	1 196.3	1 219.8	20 008.2	42.74
2009–10	4 949.0	1 346.3	1 424.4	18 968.7	40.70
2010–11	5 301.5	2 120.2	2 800.8	23 398.3	43.69
2011–12	5 500.9	4 011.1	4 551.5	28 010.1	50.21

Source: ABS (2013a), adjusted by chain volume index.

**Table T I.1b** Value of transport infrastructure engineering construction work done by the private sector for the public sector, adjusted by chain volume index

Financial year	Roads and bridges	Railways	Ports and harbours	Total major infrastructure engineering construction work done	Transport percentage of total
		<i>\$ million</i>			<i>per cent</i>
1986–87	2 036.9	278.6	239.3	4 704.8	54.30
1987–88	1 494.4	253.3	91.6	3 470.3	53.00
1988–89	1 467.8	77.4	132.2	3 117.7	53.80
1989–90	1 779.6	90.9	69.6	3 344.2	58.01
1990–91	1 904.7	149.4	106.0	4 099.8	52.69
1991–92	1 904.3	161.8	67.2	4 174.5	51.10
1992–93	2 334.2	180.4	161.0	4 518.5	59.21
1993–94	2 766.5	365.5	174.5	5 290.5	62.50
1994–95	2 482.2	502.8	97.4	4 624.8	66.65
1995–96	2 533.7	309.1	102.2	4 512.7	65.26
1996–97	2 572.1	621.9	239.2	5 001.7	68.64
1997–98	3 347.4	672.4	132.3	5 527.3	75.12
1998–99	4 020.4	543.2	146.6	5 905.5	79.76
1999–00	4 013.0	248.7	108.8	6 314.1	69.22
2000–01	3 735.7	155.6	101.8	5 859.8	68.14
2001–02	3 061.2	91.5	219.7	5 161.0	65.34
2002–03	2 956.8	320.9	165.2	5 290.7	65.07
2003–04	2 531.2	879.6	165.3	5 243.5	68.20
2004–05	3 372.0	1 236.3	188.8	7 037.5	68.17
2005–06	3 989.4	1 250.7	156.4	7 559.3	71.39
2006–07	4 931.6	869.5	145.2	7 939.4	74.90
2007–08	5 666.2	635.9	215.4	11 309.2	57.63
2008–09	7 289.5	1 273.0	300.7	13 844.2	64.02
2009–10	7 032.7	1 442.3	531.2	14 367.6	62.68
2010–11	8 098.0	1 986.6	667.2	15 107.1	71.17
2011–12	8 775.9	2 335.0	299.4	15 629.3	73.01

Source: ABS (2013a), adjusted by chain volume index.

**Table T 1.1c** Value of transport infrastructure engineering construction work done by the public sector, adjusted by chain volume index

Financial year	Roads and bridges	Railways	Ports and harbours	Total major engineering construction work done	Transport percentage of total
		<i>\$ million</i>			<i>per cent</i>
1986–87	2 645.5	264.5	66.3	9 376.1	31.74
1987–88	2 470.7	288.4	41.0	8 645.7	32.39
1988–89	2 459.1	181.3	43.2	8 756.2	30.65
1989–90	2 572.0	489.9	54.0	10 020.4	31.10
1990–91	2 569.9	542.9	65.2	9 921.5	32.03
1991–92	2 274.3	575.0	28.1	8 477.9	33.94
1992–93	2 851.8	671.3	31.5	9 122.1	38.97
1993–94	2 929.4	780.4	45.7	8 741.5	42.96
1994–95	2 853.8	1 040.5	35.8	9 849.8	39.90
1995–96	2 890.0	1 259.3	29.1	10 073.2	41.48
1996–97	2 564.2	1 321.6	36.0	9 437.2	41.56
1997–98	2 692.8	833.0	43.6	9 408.8	37.94
1998–99	2 716.5	796.0	73.1	10 114.9	35.45
1999–00	2 814.0	681.0	24.2	11 206.2	31.40
2000–01	2 551.4	597.3	58.2	10 192.8	31.46
2001–02	2 569.6	761.2	92.2	10 136.9	33.77
2002–03	2 771.8	743.9	60.3	10 081.1	35.47
2003–04	2 764.1	795.8	63.6	9 846.2	36.80
2004–05	2 678.7	1 023.6	26.7	10 269.5	36.31
2005–06	2 838.1	892.8	15.8	12 536.8	29.89
2006–07	3 160.3	976.1	32.3	11 525.0	36.17
2007–08	3 443.9	909.6	300.2	11 168.1	41.67
2008–09	4 185.8	940.7	409.0	12 914.3	42.86
2009–10	3 983.4	1 978.4	203.7	14 596.5	42.24
2010–11	4 107.6	2 045.0	51.5	14 345.8	43.25
2011–12	4 575.7	1 975.7	39.2	14 847.6	44.39

Source: ABS (2013a), adjusted by chain volume index.

**Table T 1.1d** Total value of transport infrastructure engineering construction work done, adjusted by chain volume index

Financial year	Roads and bridges	Railways	Ports and harbours	Total major engineering construction work done	Transport percentage of total
		<i>\$ million</i>			<i>per cent</i>
1986–87	5618.1	728.3	654.2	16 166.3	43.30
1987–88	5279.5	625.6	392.5	14 420.7	43.67
1988–89	5717.9	299.6	226.1	14 387.8	43.40
1989–90	6410.1	608.9	234.0	16 098.0	45.06
1990–91	6290.5	723.2	257.2	16 595.6	43.81
1991–92	5960.5	793.4	146.2	15 088.9	45.73
1992–93	6848.1	873.0	247.9	16 213.4	49.15
1993–94	7649.4	1211.1	336.6	17 229.8	53.38
1994–95	7190.3	1590.6	175.4	17 656.6	50.72
1995–96	7279.8	1667.8	171.0	18 712.5	48.73
1996–97	7565.6	2072.3	404.1	18 761.3	53.52
1997–98	9028.7	1777.1	502.3	20 449.0	55.30
1998–99	10233.2	1586.3	521.6	22 387.1	55.13
1999–00	9556.1	1161.3	252.8	24 268.3	45.20
2000–01	8166.5	885.6	289.6	22 124.8	42.22
2001–02	7899.6	1239.9	460.0	21 709.2	44.22
2002–03	9261.0	1797.1	418.1	24 048.1	47.72
2003–04	10684.2	2041.9	612.6	27 179.5	49.08
2004–05	12668.8	2881.7	1188.8	31 141.1	53.75
2005–06	13621.2	2730.5	1231.8	34 447.0	51.04
2006–07	14143.3	2949.7	1300.8	36 840.6	49.93
2007–08	14457.1	3168.9	1577.7	41 208.3	46.60
2008–09	17610.1	3410.1	1929.4	46 766.8	49.07
2009–10	15965.2	4767.0	2159.3	47 932.8	47.76
2010–11	17507.1	6151.8	3519.5	52 851.3	51.42
2011–12	18852.5	8321.8	4890.2	58 486.9	54.82

Source: ABS (2013a), adjusted by chain volume index.

**Table T 1.2a** Total road expenditure by state/territory, by level of government, Commonwealth

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Other	Total
<i>\$ million (2011–12)</i>										
1998–99	943.3	479.4	585.9	276.1	314.8	113.9	90.8	52.6	4.7	2 861.5
1999–00	909.5	437.0	605.6	214.2	281.4	121.7	94.5	75.2	5.4	2 744.5
2000–01	776.9	359.8	608.4	131.2	250.0	92.2	70.3	28.4	4.2	2 321.4
2001–02	864.2	639.5	600.3	174.7	317.3	82.8	67.3	52.2	5.0	2 803.4
2002–03	852.8	524.6	558.3	147.4	273.8	81.8	63.1	30.0	3.7	2 535.5
2003–04	960.5	399.7	572.6	165.9	269.9	69.8	58.2	29.2	3.0	2 528.9
2004–05	1 038.4	543.7	542.7	184.3	294.5	86.0	67.0	30.5	3.5	2 790.5
2005–06	2 266.8	676.8	1 050.6	330.9	760.6	172.7	1 111.6	39.8	4.5	5 414.4
2006–07	1 151.2	657.3	827.2	220.7	369.1	83.9	54.7	36.0	7.6	3 407.7
2007–08	824.4	622.4	848.4	225.7	401.4	79.8	74.0	21.5	7.1	3 104.6
2008–09	1 706.3	717.0	2 055.9	385.1	504.9	105.5	90.2	29.8	4.7	5 599.5
2009–10	1 747.6	859.8	1 759.5	510.6	416.7	165.1	159.3	43.9	6.8	5 669.3
2010–11	1 523.0	539.9	806.4	193.4	341.2	138.3	78.9	48.7	6.3	3 676.2
2011–12	2 661.4	1 100.4	2 098.5	473.9	622.5	101.6	144.8	50.6	7.8	7 261.4

Source: (BITRE 2013d).

**Table T 1.2b** Total road expenditure by state/territory, by level of government, state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
<i>\$ million (2011–12)</i>									
1998–99	1 639.4	301.6	1 432.0	156.3	662.3	60.4	36.9	- 29.2	4 259.8
1999–00	1 728.1	1 009.6	821.4	215.0	683.6	55.2	- 1.3	- 44.0	4 467.7
2000–01	1 987.5	868.0	1 509.5	351.2	835.2	73.2	41.9	62.3	5 728.8
2001–02	2 045.1	606.4	892.2	312.8	891.0	109.4	37.4	57.1	4 951.4
2002–03	1 896.2	989.7	873.0	283.2	797.9	127.0	27.4	68.7	5 063.2
2003–04	1 720.9	489.7	1 289.1	269.7	781.3	52.8	33.7	57.0	4 694.3
2004–05	2 341.3	747.8	1 263.3	200.7	810.7	104.5	21.9	47.8	5 538.1
2005–06	710.0	471.5	986.8	262.6	401.5	- 1.5	145.0	57.0	3 032.8
2006–07	2 389.8	709.6	2 071.8	256.1	1 020.5	61.8	213.2	74.6	6 797.5
2007–08	2 775.2	801.0	2 865.3	263.2	1 247.4	102.2	173.4	114.2	8 341.9
2008–09	2 717.5	1 118.7	2 513.5	306.3	1 087.4	49.3	225.7	109.5	8 127.9
2009–10	2 898.9	895.7	2 571.7	176.9	1 026.6	105.7	93.1	116.3	7 885.0
2010–11	2 332.8	1 005.2	3 548.0	403.4	823.0	108.1	173.8	121.2	8 515.5
2011–12	1 522.9	523.0	3 435.5	207.5	757.5	46.7	169.5	105.4	6 768.0

Source: (BITRE 2013d).

**Table T 1.2c Total road expenditure by state/territory, by level of government, local**

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
\$ million (2011–12)									
1998–99	1 500.9	883.6	1 203.9	240.1	546.9	88.8	nes	na	4 464.2
1999–00	1 474.9	905.8	1 374.8	250.1	685.8	87.5	nes	na	4 778.8
2000–01	1 300.8	749.3	1 310.2	244.4	673.3	82.1	nes	na	4 360.2
2001–02	1 213.4	793.9	1 246.0	256.9	617.0	93.2	nes	na	4 220.5
2002–03	1 074.8	799.9	1 286.0	233.0	638.2	31.6	nes	na	4 063.5
2003–04	1 082.2	760.2	1 309.2	234.0	549.5	30.8	nes	na	3 965.9
2004–05	1 048.9	786.0	874.4	236.2	607.5	27.2	nes	na	3 580.2
2005–06	783.2	668.0	810.5	198.7	157.9	14.3	nes	na	2 632.6
2006–07	814.0	742.1	853.7	233.4	433.7	39.4	nes	na	3 116.3
2007–08	961.1	857.4	1 071.0	248.7	600.9	27.6	nes	na	3 766.5
2008–09	988.7	828.7	1 327.7	294.6	566.8	44.9	nes	na	4 051.4
2009–10	618.3	811.8	1 277.9	258.8	558.9	49.9	nes	na	3 575.4
2010–11	599.9	854.1	1 488.2	250.7	584.4	53.3	nes	na	3 830.6
2011–12	545.4	917.0	2 043.2	292.1	549.2	102.2	nes	na	4 449.0

na: not applicable.

nes (not estimated separately). NT road expenditure are recorded under state/territory government expenditure (Table T 1.2b).

Source: (BITRE 2013d).

**Table T 1.2d Total road expenditure by state/territory, by level of government, all levels of government**

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Other	Total
\$ million (2011–12)										
1998–99	4 083.6	1 664.6	3 221.8	672.5	1 524.0	263.1	127.6	23.5	4.7	11 585.4
1999–00	4 112.6	2 352.4	2 801.8	679.3	1 650.7	264.4	93.2	31.1	5.4	11 991.0
2000–01	4 065.2	1 977.1	3 428.1	726.8	1 758.5	247.4	112.2	90.7	4.2	12 410.4
2001–02	4 122.7	2 039.9	2 738.6	744.4	1 825.4	285.5	104.7	109.3	5.0	11 975.3
2002–03	3 823.8	2 314.2	2 717.3	663.6	1 709.9	240.4	90.5	98.8	3.7	11 662.2
2003–04	3 763.6	1 649.6	3 170.9	669.6	1 600.7	153.5	91.9	86.2	3.0	11 189.0
2004–05	4 428.6	2 077.6	2 680.4	621.2	1 712.7	217.7	88.9	78.4	3.5	11 908.8
2005–06	3 760.0	1 816.3	2 847.9	792.2	1 320.0	185.5	256.6	96.9	4.5	11 079.8
2006–07	4 355.0	2 109.0	3 752.8	710.1	1 823.3	185.1	267.9	110.7	7.6	13 321.5
2007–08	4 560.8	2 280.8	4 784.7	737.5	2 249.6	209.5	247.5	135.6	7.1	15 213.0
2008–09	5 412.6	2 664.4	5 897.1	986.0	2 159.1	199.7	315.9	139.3	4.7	17 778.7
2009–10	5 264.8	2 567.4	5 609.1	946.3	2 002.1	320.7	252.4	160.2	6.8	17 129.8
2010–11	4 455.7	2 399.3	5 842.6	847.6	1 748.6	299.6	252.7	170.0	6.3	16 022.4
2011–12	4 729.7	2 540.4	7 577.2	973.5	1 929.2	250.4	314.3	156.0	7.8	18 478.4

Source: (BITRE 2013d).

**Table T 1.2e** Total road expenditure by all levels of government and the private sector

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Other	Total
<i>\$ million (2011–12)</i>										
1998–99	4 239.5	1 683.0	3 389.4	699.3	1 524.0	269.8	127.6	23.5	4.7	11 960.9
1999–00	4 217.4	2 367.2	3 016.4	702.3	1 650.7	267.7	99.8	31.1	5.4	12 358.0
2000–01	4 149.5	1 985.1	3 545.9	749.1	1 758.5	250.6	128.1	90.7	4.2	12 661.9
2001–02	4 184.2	2 039.9	2 875.5	755.1	1 882.3	288.6	107.8	109.3	5.0	12 247.7
2002–03	4 093.5	2 321.6	2 869.1	732.9	1 814.5	246.3	90.5	98.8	3.7	12 270.9
2003–04	3 937.5	1 649.6	3 367.0	694.6	1 702.2	159.0	91.9	86.2	3.0	11 691.2
2004–05	4 614.5	2 084.3	2 922.1	655.7	1 907.9	229.6	88.9	78.4	3.5	12 584.8
2005–06	3 933.4	1 816.3	3 200.9	813.9	1 540.5	204.6	256.6	96.9	4.5	11 867.5
2006–07	4 583.7	2 128.7	4 119.2	734.7	1 924.1	201.1	267.9	110.7	7.6	14 077.7
2007–08	4 758.5	2 358.9	5 112.3	780.0	2 310.6	226.7	247.5	135.6	7.1	15 937.2
2008–09	5 696.8	2 685.9	6 183.6	1 026.8	2 265.5	214.5	315.9	139.3	4.7	18 532.9
2009–10	5 543.5	2 589.3	5 873.6	977.0	2 057.0	339.3	252.4	160.2	6.8	17 799.3
2010–11	4 837.6	2 399.3	6 188.6	865.0	1 849.0	310.9	252.7	171.0	6.3	16 880.4
2011–12	5 176.7	2 658.4	7 863.2	989.5	1 977.2	265.4	314.3	207.0	7.8	19 459.4

Source: (BITRE 2013d).

**Table T 1.3** Selected road-related taxes and charges

Financial year	Australian Government		Sub-total	State and Territory governments			Sub-total	Tolls	Total road-related revenue
	Petroleum products excise	Federal Interstate Registration Scheme (FIRS)		Vehicle registration fees	Driver's licence fees	Stamp duty			
<i>\$ million, current (nominal) prices</i>									
1997–98	8 816.4	17.7	8 834.2	2 285.0	221.6	1 260.0	3 766.6	137.9	12 738.6
1998–99	8 475.8	18.9	8 494.7	2 584.0	192.8	1 318.0	4 094.8	272.4	12 861.9
1999–00	8 680.3	21.8	8 702.2	2 528.0	222.8	1 365.0	4 115.8	360.5	13 178.6
2000–01	8 816.4	26.6	8 843.0	2 646.0	253.4	1 387.0	4 286.4	469.9	13 599.2
2001–02	9 156.3	31.3	9 187.5	2 787.0	239.1	1 504.0	4 530.1	601.2	14 318.9
2002–03	9 581.7	36.0	9 617.7	2 993.0	235.7	1 696.0	4 924.7	661.2	15 203.5
2003–04	9 650.1	41.1	9 691.1	3 243.0	262.7	1 887.0	5 392.7	732.8	15 816.6
2004–05	9 770.9	43.2	9 814.1	3 497.0	313.7	1 918.0	5 728.7	774.7	16 317.5
2005–06	9 518.7	50.0	9 568.7	3 647.0	311.9	1 922.0	5 880.9	996.3	16 445.9
2006–07	9 299.8	51.3	9 351.1	3 911.0	252.3	2 005.0	6 168.3	1 140.3	16 659.7
2007–08	9 142.7	54.2	9 196.9	3 411.4	240.9	2 208.0	5 860.3	1 156.9	16 214.1
2008–09	8 689.6	54.6	8 744.2	3 665.2	295.5	2 026.0	5 986.7	1 199.7	15 930.6
2009–10	8 802.9	61.9	8 864.8	4 219.7	323.8	2 117.0	6 660.4	1 430.2	16 955.4
2010–11	8 581.5	74.6	8 656.1	4 423.2	354.6	2 167.0	6 944.8	1 450.7	17 051.6
2011–12	9 037.1	82.5	9 119.6	4 735.8	389.6	2 280.0	7 405.4	1 481.9	18 006.9

Note: This table excludes items that raise relatively small amounts of revenue. It also excludes items that are not readily available (for example, the Fringe Benefits Tax).

Source: BITRE (2013d), ABS (2013e), RTA, NSW Transurban, Cross City Motorway, Connecteast, Queensland Motorways, River City Motorway, Brisbane City Council.

**Table T 1.4 Total road length by state/territory, by road type<sup>1,2</sup>**

	Urban					Non-urban					Total
	Highway	Arterial	Local	Busway	Sub-total	Highway	Arterial	Local	Busway	Sub-total	
<i>kilometres</i>											
<i>New South Wales</i>											
2010	2 328.8	4 479.9	33 431.7	na	40 240.3	11 030.7	70 413.1	87 427.5	na	168 871.2	209 111.6
2011	2 339.3	4 624.6	33 647.2	na	40 611.1	11 138.6	70 069.1	87 939.8	na	169 147.5	209 758.6
2012	1 704.6	3 649.9	33 202.3	55.6	38 612.5	10 249.3	69 904.3	87 391.2	0.0	167 544.8	206 157.3
<i>Victoria</i>											
2010	2 615.9	5 138.4	28 332.4	na	36 086.7	7 196.2	30 595.6	72 581.7	na	110 373.4	146 460.1
2011	2 620.6	5 136.8	29 010.9	na	36 768.4	7 171.2	30 622.1	72 484.3	na	110 277.5	147 045.9
2012	1 843.0	4 121.4	29 534.0	0.0	35 498.5	6 618.0	30 518.4	72 012.3	0.0	109 148.7	144 647.2
<i>Queensland</i>											
2010	1 523.0	3 259.6	26 080.7	na	30 863.3	10 929.3	19 212.0	170 747.8	na	200 889.2	231 752.5
2011	1 586.5	3 293.2	26 387.4	na	31 267.2	10 930.5	19 186.3	169 620.4	na	199 737.2	231 004.4
2012	981.7	2 276.4	26 229.6	28.4	29 516.1	10 887.1	19 050.1	167 557.3	0.0	197 494.4	227 010.5
<i>South Australia</i>											
2010	444.7	1 723.6	11 105.1	na	13 273.3	4 555.6	12 806.0	67 892.9	na	85 254.6	98 527.9
2011	410.0	1 782.7	11 116.6	na	13 309.3	3 383.5	13 907.3	67 462.6	na	84 753.5	98 062.8
2012	310.3	1 346.6	10 990.2	24.7	12 671.8	3 337.4	13 850.3	67 608.8	0.0	84 796.4	97 468.2
<i>Western Australia</i>											
2010	1 480.8	2 058.1	16 551.3	na	20 090.2	10 281.8	15 869.6	120 604.3	na	146 755.7	166 845.9
2011	1 686.2	2 488.2	16 181.0	na	20 355.5	9 959.8	15 200.9	123 885.8	na	149 046.6	169 402.1
2012	1 392.9	1 652.7	16 212.6	15.4	19 273.6	9 869.7	15 177.1	123 999.6	5.8	149 052.3	168 325.9
<i>Tasmania</i>											
2010	482.3	546.8	3 911.8	na	4 940.8	1 555.8	3 063.6	20 446.2	na	25 065.5	30 006.3
2011	484.8	546.6	3 920.9	na	4 952.3	1 553.4	3 090.1	21 302.9	na	25 946.4	30 898.7
2012	381.2	522.4	3 901.6	0.0	4 805.2	1 542.2	3 067.0	21 789.4	0.0	26 398.5	31 203.7
<i>Northern Territory</i>											
2010	43.2	237.2	918.0	na	1 198.4	6 553.3	11 161.9	2 060.8	na	19 776.0	20 974.4
2011	23.9	302.9	889.1	na	1 215.9	6 556.5	11 628.4	1 910.6	na	20 095.5	21 311.5
2012	23.5	309.6	963.1	0.0	1 296.2	2 648.2	15 563.2	2 304.3	0.0	20 515.7	21 811.9
<i>Australian Capital Territory</i>											
2010	55.3	431.4	2 637.6	na	3 124.4	47.3	73.2	442.6	na	563.1	3 687.5
2011	53.0	444.8	2 678.3	na	3 176.1	45.5	75.8	450.5	na	571.8	3 747.9
2012	35.2	228.5	2 657.9	0.0	2 921.6	22.2	57.5	276.7	0.0	356.3	3 277.9
<i>Other Territories</i>											
2010	0.0	0.0	0.0	na	0.0	0.0	12.2	141.4	na	153.7	153.7
2011	0.0	0.0	0.0	na	0.0	0.0	12.2	174.8	na	187.0	187.0
2012	0.0	0.0	0.0	0.0	0.0	0.0	18.5	161.3	0.0	179.9	179.9
<i>Australia</i>											
2010	8 974.0	17 874.9	122 968.6	na	149 817.4	52 150.0	163 207.2	542 345.2	na	757 702.4	907 519.8
2011	9 204.4	18 619.8	123 831.6	na	151 655.8	50 739.0	163 792.3	545 231.6	na	759 763.0	911 418.7
2012	6 672.6	14 107.6	123 691.3	124.1	144 595.5	45 173.9	167 206.3	543 100.9	5.8	755 487.0	900 082.5

**1,2** See end notes.

Note: In 2012 road lengths were adjusted for dual carriageways. This removed 3005 km from New South Wales, 2516 km from Victoria, 2325 km from Queensland, 840 km from South Australia, 1491 km from Western Australia, 216 km from Tasmania and 331 km from the Australian Capital Territory. No adjustment was necessary for the Northern Territory or Other Territories.

Source: PSMA (2010, 2011, 2012), OpenStreetMap (2012), BITRE estimates.



**Table T 1.5** Selected road construction and maintenance price and cost indexes, for Australia and for states and territories

Financial year	NSW	VIC	QLD	SA	WA	Australia (BITRE)	Australia (ABS)
	<i>index (2011–12=100)</i>						
1997–98							57.3
1998–99	60.2	56.9	56.5	56.3	59.2	59.7	58.1
1999–00	62.0	59.3	58.7	58.3	62.0	61.0	60.2
2000–01	63.8	62.4	60.8	61.8	64.8	62.8	62.6
2001–02	64.8	64.5	60.9	62.9	66.0	65.0	63.7
2002–03	69.1	68.3	64.6	65.7	68.4	67.8	67.4
2003–04	72.0	71.1	68.1	67.3	69.9	71.9	70.1
2004–05	75.2	72.2	72.1	70.2	73.2	75.3	73.0
2005–06	78.8	75.4	77.5	74.5	79.3	78.5	77.4
2006–07	82.4	78.7	82.4	77.7	83.8	81.3	81.3
2007–08	86.1	82.4	88.4	81.7	89.5	87.0	85.7
2008–09	89.6	87.9	96.6	89.4	94.4	88.3	91.2
2009–10	91.9	89.5	96.1	92.7	93.8	91.1	92.4
2010–11	94.3	93.9	98.2	95.7	95.3	97.7	95.2
2011–12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2012–13	103.6	103.8	103.9	103.4	103.1		103.6

Note: Data are not readily available for missing years.

Source: For state and national indexes – ABS (2012–13k); for national (BITRE) index – BITRE (2012g).



# CHAPTER 2

## Freight

**Table T 2.1a** Total, bulk and non-bulk domestic freight, by transport mode—bulk

Financial year	Goods moved (billion tkm)				Goods moved (million tonnes)			
	Road	Rail	Coastal shipping	Total freight task	Road	Rail	Coastal shipping	Total freight weight
1970–71	7.6	26.1						
1971–72	8.1	29.3						
1972–73	8.6	32.7						
1973–74	9.1	40.2						
1974–75	9.6	45.3						
1975–76	10.1	41.4						
1976–77	11.3	43.7						
1977–78	12.6	45.2						
1978–79	13.8	43.9						
1979–80	14.9	47.9						
1980–81	16.0	50.6						
1981–82	17.1	51.2						
1982–83	18.3	47.9						
1983–84	19.5	51.8						
1984–85	20.7	58.8			309.2			
1985–86	21.6	62.0			305.3			
1986–87	22.5	64.3			301.3			
1987–88	23.3	64.5			297.4			
1988–89	23.9	60.9			301.6			
1989–90	24.5	68.4			305.9			
1990–91	25.1	72.0			310.1			
1991–92	26.9	79.6			324.4			
1992–93	28.7	79.0			338.7			
1993–94	30.5	81.6			353.0			
1994–95	32.3	84.5			367.4			
1995–96	34.0	89.4	102.4	225.8	379.5		43.5	
1996–97	35.6	97.4	109.0	241.9	391.7		44.7	
1997–98	37.3	100.1	112.1	249.3	403.9		47.6	
1998–99	39.2	101.6	104.4	246.1	439.5		43.3	
1999–00	40.6	106.2	102.6	250.6	440.7		45.1	
2000–01	41.8	109.0	97.1	248.8	444.6		45.3	
2001–02	43.8	120.9	102.9	268.1	499.2		46.1	
2002–03	45.3	130.1	106.4	282.4	465.9		45.7	
2003–04	47.0		108.3		508.8		45.5	
2004–05	49.9		106.6		526.8		45.9	
2005–06	52.0		115.4		553.2		48.6	
2006–07	54.7		118.0		643.8		49.3	
2007–08	57.5	<sup>3</sup> 172.1	115.9	345.5		<sup>3</sup> 642.8	51.2	
2008–09	57.6	207.6	100.0	365.1		705.0	44.6	
2009–10	57.6	230.5	105.0	393.1	627.6	798.8	44.4	1 470.7
2010–11	59.2		100.1				42.1	
2011–12	62.2		92.8				42.5	

<sup>3</sup> See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2011c), ARA (2008), BTRE (2006a), BITRE (2013a), BITRE (2012h) and BITRE estimates.

**Table T 2.1b** Total, bulk and non-bulk domestic freight, by transport mode—  
non-bulk

Financial year	Goods moved (billion tkm)					Goods moved (million tonnes)				
	Road	Rail	Coastal shipping	Air freight	Total freight task	Road	Rail	Coastal shipping	Air freight	Total freight weight
1970–71	17.8	13.6								
1971–72	19.0	13.4								
1972–73	20.1	14.0								
1973–74	21.3	13.9								
1974–75	22.4	13.7								
1975–76	23.6	14.2								
1976–77	26.4	14.0								
1977–78	29.3	14.6								
1978–79	32.1	15.9								
1979–80	34.7	15.8								
1980–81	37.4	15.1								
1981–82	40.0	14.1								
1982–83	42.7	12.0								
1983–84	45.5	13.6								
1984–85	48.2	13.9				721.5				
1985–86	50.3	15.4				712.3				
1986–87	52.4	16.1				703.1				
1987–88	54.5	17.4				693.9				
1988–89	55.8	19.7				703.8				
1989–90	57.1	19.5				713.7				
1990–91	58.5	19.2				723.5				
1991–92	62.7	19.7				756.9				
1992–93	66.9	21.8				790.3				
1993–94	71.1	22.7				823.7				
1994–95	75.4	21.7				857.2				
1995–96	79.2	20.9	3.7		104.0	885.6		4.3		
1996–97	83.1	22.3	3.6		108.9	914.0		4.4		
1997–98	87.0	25.5	4.8		116.8	942.4		4.9		
1998–99	91.5	26.3	4.4		124.2	1 025.5		5.1		
1999–00	94.6	27.4	6.3		131.4	1 028.3		6.2		
2000–01	97.6	28.0	7.4		135.1	1 037.4		6.7		
2001–02	102.2	29.6	7.6		140.9	1 164.8		6.3		
2002–03	105.7	31.0	8.5		146.8	1 087.1		7.1		
2003–04	109.7		8.8			1 187.2		7.7		
2004–05	116.4		7.5			1 229.2		7.7		
2005–06	121.3		6.8	0.4		1 290.8		6.7	0.3	
2006–07	127.7		8.1	0.4		1 502.2		7.1	0.3	
2007–08	134.1	<sup>3</sup> 31.3	9.6	0.4	175.4		<sup>3</sup> 19.5	8.3	0.3	
2008–09	134.4	29.6	7.6	0.3	171.9		17.5	7.0	0.2	
2009–10	134.5	28.1	9.7	0.3	172.7	1 464.4	16.5	7.7	0.2	1 488.8
2010–11	138.1		10.8	0.3				9.3	0.3	
2011–12	145.2		8.0	0.3				7.8	0.2	

<sup>3</sup> See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2011c), ARA (2008), BTRE (2006a), BITRE (2013a), BITRE (2012c), BITRE (2012h) and BITRE estimates.

**Table T 2.1c** Total, bulk and non-bulk domestic freight, by transport mode—total bulk and non-bulk

Financial year	Goods moved (billion tkm)					Goods moved (million tonnes)				
	Road	Rail	Coastal shipping	Air freight	Total freight task	Road	Rail	Coastal shipping	Air freight	Coastal shipping
1970–71	25.4	39.7	72.0		137.1					
1971–72	27.1	42.7	83.2		153.0			44.6		
1972–73	28.8	46.7	89.5		165.0			43.3		
1973–74	30.4	54.1	96.1		180.6			46.3		
1974–75	32.1	59.0	101.2		192.3			46.4		
1975–76	33.7	55.6	104.6		194.0			47.5		
1976–77	37.8	57.7	102.3		197.8			47.2		
1977–78	41.9	59.8	105.1		206.8			48.0		
1978–79	45.9	59.8	104.7		210.4			47.4		
1979–80	49.6	63.7	105.1		218.4			48.1		
1980–81	53.4	65.7	110.3		229.4			47.3		
1981–82	57.1	65.4	97.8		220.3			43.1		
1982–83	61.0	59.8	80.9		201.8			38.3		
1983–84	64.9	65.4	94.3		224.7			42.7		
1984–85	68.9	72.6	96.3		237.8	1 030.6		42.7		
1985–86	71.8	77.3	101.8		251.0	1 017.5		44.7		
1986–87	74.8	80.4	95.2		250.4	1 004.4		44.4		
1987–88	77.8	81.9	93.6		253.3	991.3		43.2		
1988–89	79.7	80.6	90.7		251.0	1 005.4		43.0		
1989–90	81.6	87.9	94.2		263.7	1 019.5		44.5		
1990–91	83.5	91.1	93.8		268.5	1 033.6		44.2		
1991–92	89.6	99.3	96.4		285.3	1 081.3		43.6		
1992–93	95.6	100.8	96.0		292.4	1 129.1		44.2		
1993–94	101.6	104.2	98.8		304.6	1 176.8		45.3		
1994–95	107.7	106.2	109.2		323.1	1 224.5		49.2		
1995–96	113.2	110.3	106.1		329.5	1 265.1		47.8		
1996–97	118.7	119.6	112.6		351.0	1 305.7		49.1		
1997–98	124.3	125.6	116.9		366.8	1 346.3		52.5		
1998–99	130.7	128.0	108.8		367.4	1 465.0		48.4		
1999–00	135.2	133.6	108.9		377.6	1 469.0		51.3		
2000–01	139.4	136.9	104.5		380.8	1 482.0		52.0		
2001–02	146.1	150.5	110.4		406.9	1 664.0		52.4		
2002–03	151.0	159.8	114.9		425.7	1 553.0	575.7	52.8		2 181.5
2003–04	156.8	168.0	117.1		441.8	1 696.0	590.9	53.2		2 340.1
2004–05	166.3	183.0	114.1		463.3	1 756.0	634.3	53.7		2 443.9
2005–06	173.3	189.0	122.3	0.4	484.7	1 844.0	641.2	55.2	0.3	2 540.7
2006–07	182.4	198.7	126.0	0.4	507.5	2 146.0	665.6	56.4	0.3	2 868.3
2007–08	191.5	<sup>3</sup> 203.5	125.5	0.4	520.9		<sup>3</sup> 662.3	59.5	0.3	
2008–09	191.9	237.2	107.6	0.3	537.0		722.5	51.6	0.2	
2009–10	192.1	258.6	114.8	0.3	565.8	2 092.0	815.3	52.1	0.2	2 959.6
2010–11	197.3		110.9	0.3				51.5	0.3	
2011–12	207.5		100.9	0.3				50.2	0.2	

**3** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2011c), ARA (2008), BTRE (2006a), BITRE (2013a), BITRE (2012c), BITRE (2012h) and BITRE estimates.

**Table T 2.2a** Total domestic freight by state/territory, by transport mode—road

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1971–72	10.3	6.8	4.0	2.8	2.5	0.4	0.3	0.1	27.1
1972–73	11.0	7.2	4.2	2.9	2.7	0.4	0.3	0.1	28.8
1973–74	11.7	7.6	4.3	3.0	2.9	0.5	0.3	0.1	30.4
1974–75	12.2	8.0	4.6	3.1	3.2	0.5	0.4	0.1	32.1
1975–76	13.0	8.5	4.8	3.1	3.4	0.5	0.4	0.1	33.7
1976–77	14.3	9.4	5.5	3.4	4.0	0.6	0.4	0.2	37.8
1977–78	15.5	10.4	6.4	3.7	4.6	0.7	0.5	0.2	41.9
1978–79	16.8	11.4	7.1	3.9	5.3	0.8	0.5	0.2	45.9
1979–80	18.2	12.3	7.6	4.1	5.9	0.8	0.6	0.2	49.6
1980–81	19.4	13.2	8.2	4.2	6.5	0.9	0.7	0.2	53.4
1981–82	20.7	14.1	8.9	4.2	7.3	1.0	0.7	0.2	57.1
1982–83	21.6	15.0	9.9	4.1	8.3	1.1	0.8	0.2	61.0
1983–84	23.3	16.0	10.2	4.3	8.8	1.2	0.8	0.2	64.9
1984–85	24.6	17.0	10.9	4.4	9.6	1.3	0.9	0.2	68.9
1985–86	25.8	17.5	11.2	4.7	10.1	1.3	1.0	0.3	71.8
1986–87	26.7	18.1	11.7	4.8	10.8	1.4	1.0	0.3	74.8
1987–88	28.0	18.7	11.9	5.2	11.2	1.4	1.1	0.3	77.8
1988–89	28.8	19.0	12.0	5.6	11.5	1.4	1.2	0.3	79.7
1989–90	29.6	19.4	12.1	5.8	11.8	1.4	1.3	0.3	81.6
1990–91	30.1	19.7	12.4	5.8	12.4	1.5	1.3	0.3	83.5
1991–92	31.9	20.7	13.6	6.1	13.9	1.7	1.4	0.3	89.6
1992–93	34.0	21.7	14.4	6.7	15.2	1.8	1.6	0.3	95.6
1993–94	36.1	22.9	15.4	7.0	16.4	1.9	1.7	0.3	101.6
1994–95	38.1	24.0	16.2	7.5	17.7	2.0	1.8	0.3	107.7
1995–96	40.4	25.1	17.0	7.9	18.5	2.1	2.0	0.3	113.2
1996–97	42.7	26.1	17.8	8.2	19.4	2.1	2.1	0.3	118.7
1997–98	44.9	27.0	18.7	8.5	20.4	2.2	2.3	0.3	124.3
1998–99	46.9	28.6	21.6	8.8	19.7	2.4	2.5	0.3	130.7
1999–00	48.3	29.8	22.5	9.5	19.8	2.4	2.5	0.3	135.2
2000–01	49.3	30.7	23.7	9.8	20.6	2.5	2.4	0.3	139.4
2001–02	51.1	32.2	25.4	10.4	21.7	2.7	2.4	0.3	146.1
2002–03	52.8	33.4	26.6	10.8	22.5	2.7	2.0	0.3	151.0
2003–04	54.3	34.5	27.8	11.5	23.5	2.8	1.9	0.3	156.8
2004–05	56.5	36.2	30.1	12.6	25.5	3.1	1.9	0.3	166.3
2005–06	58.1	37.6	31.7	13.5	27.0	3.2	1.9	0.3	173.3
2006–07	60.6	39.4	33.5	14.3	29.0	3.4	2.0	0.3	182.4
2007–08	64.2	41.4	35.0	15.1	29.9	3.5	2.2	0.3	191.5
2008–09	64.5	41.3	35.1	15.1	29.9	3.5	2.2	0.3	191.9
2009–10	65.0	41.5	34.9	15.3	29.6	3.4	2.2	0.3	192.1
2010–11	66.8	42.6	35.8	15.8	30.3	3.5	2.3	0.3	197.3
2011–12	70.1	44.7	37.7	16.6	31.9	3.7	2.5	0.3	207.5

Source: BTRE (2006a) and BITRE estimates.

**Table T 2.2b** Total domestic freight by state/territory, by transport mode—rail

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1971–72	7.4	2.9	7.0	3.2	22.0	0.2	na	na	42.7
1972–73	8.1	3.2	7.6	3.5	24.1	0.2	na	na	46.7
1973–74	8.5	3.1	7.7	3.9	30.6	0.3	na	na	54.1
1974–75	8.6	3.0	9.0	3.8	34.2	0.3	na	na	59.0
1975–76	8.3	3.0	9.8	3.8	30.4	0.2	na	na	55.6
1976–77	9.1	3.0	10.0	4.0	31.4	0.2	na	na	57.7
1977–78	9.2	3.1	10.4	4.1	32.9	0.2	na	na	59.8
1978–79	9.1	3.3	11.3	4.5	31.4	0.3	na	na	59.8
1979–80	10.6	3.9	11.4	4.7	32.9	0.2	na	na	63.7
1980–81	10.6	3.7	12.0	4.9	34.2	0.2	na	na	65.7
1981–82	10.8	3.5	13.2	4.9	32.7	0.2	na	na	65.4
1982–83	9.2	2.5	13.3	4.6	30.1	0.2	na	na	59.8
1983–84	11.2	3.1	15.5	5.0	30.3	0.2	na	na	65.4
1984–85	12.5	3.6	16.9	5.3	34.0	0.2	na	na	72.6
1985–86	14.1	3.2	18.5	6.1	35.2	0.3	na	na	77.3
1986–87	14.4	3.3	19.8	5.9	36.7	0.3	na	na	80.4
1987–88	14.4	3.4	20.7	6.4	36.7	0.2	na	na	81.9
1988–89	13.6	3.3	21.9	6.7	34.9	0.2	na	na	80.6
1989–90	14.7	3.8	22.8	6.9	39.5	0.2	na	na	87.9
1990–91	14.7	3.8	23.4	6.6	42.4	0.3	na	na	91.1
1991–92	15.4	3.6	27.2	7.2	45.7	0.3	na	na	99.3
1992–93	16.2	4.0	26.7	7.6	46.0	0.3	na	na	100.8
1993–94	17.3	4.5	26.7	8.0	47.5	0.3	na	na	104.2
1994–95	16.9	4.6	28.7	7.9	47.7	0.3	na	na	106.2
1995–96	18.1	4.8	28.4	7.8	50.8	0.4	na	na	110.3
1996–97	20.0	5.5	30.9	10.2	52.7	0.4	na	na	119.6
1997–98	20.0	4.5	32.0	9.8	58.9	0.5	na	na	125.6
1998–99	19.5	4.6	33.2	9.9	60.2	0.5	na	na	128.0
1999–00	19.9	4.8	35.5	9.6	63.3	0.5	na	na	133.6
2000–01	21.0	5.0	39.4	10.0	60.8	0.7	na	na	136.9
2001–02	23.1	5.5	43.3	11.0	66.8	0.8	na	na	150.5
2002–03	24.3	5.7	45.5	11.5	70.2	0.8	na	na	158.1
2003–04	25.8	6.1	48.4	12.3	74.7	0.9	na	na	168.1
2004–05	28.1	6.6	52.7	13.4	81.3	0.9	na	na	183.0
2005–06	29.0	6.9	54.4	13.8	84.0	1.0	na	na	189.0
2006–07	30.5	7.2	57.2	14.5	88.2	1.0	na	na	198.7
2007–08 <sup>3</sup>	28.9	15.3	52.2	12.8	123.8	0.5	2.4	na	203.5
2008–09	27.4	13.6	56.0	11.4	153.6	0.3	3.1	na	237.2
2009–10	28.2	12.6	60.7	10.5	170.9	0.1	3.2	na	258.6

**3** See end notes.

na: not applicable.

Source: ARA (2008), BTRE (2006a) and BITRE (2012h).

**Table T 2.2c** Total domestic freight by state/territory, by transport mode—shipping

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1995–96	4.7	8.6	24.1	9.1	54.2	3.7	1.6	na	106.1
1996–97	5.5	8.8	25.6	9.7	57.6	3.2	2.2	na	112.6
1997–98	5.6	10.3	25.6	9.7	60.5	2.4	2.8	na	116.9
1998–99	4.9	7.9	24.8	9.7	55.1	3.5	2.9	na	108.8
1999–00	6.4	8.9	30.3	9.6	46.3	4.0	3.3	na	108.8
2000–01	7.4	9.4	30.7	9.0	41.8	2.9	3.2	na	104.5
2001–02	5.2	6.6	30.9	9.6	49.9	5.7	2.5	na	110.5
2002–03	5.7	7.6	31.7	10.1	51.9	5.8	2.3	na	114.9
2003–04	4.9	6.5	33.8	8.2	55.6	5.5	2.6	na	117.1
2004–05	5.3	6.6	37.1	8.5	48.0	4.6	3.7	na	114.1
2005–06	5.3	9.0	41.2	8.9	50.9	4.5	2.5	na	122.3
2006–07	6.2	9.1	42.0	9.3	54.9	4.4	0.1	na	126.0
2007–08	6.0	8.0	43.8	10.5	52.5	4.5	0.0	na	125.5
2008–09	3.0	6.2	42.0	9.3	40.1	3.9	2.8	na	107.6
2009–10	5.9	6.1	41.2	8.2	49.7	3.5	0.0	na	114.8
2010–11	4.8	5.7	42.5	8.5	45.6	3.5	0.2	na	110.9
2011–12	5.3	5.8	44.0	9.1	32.9	3.3	0.2	na	100.9

na: not applicable.

Source: BITRE (2013a).

**Table T 2.2d** Total domestic freight by state/territory, by transport mode—total

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1995–96	63.2	38.5	69.5	24.8	123.5	6.2	3.6	0.3	329.6
1996–97	68.1	40.4	74.3	28.0	129.7	5.7	4.3	0.3	350.9
1997–98	70.5	41.8	76.3	28.0	139.8	5.1	5.1	0.3	366.8
1998–99	71.3	41.1	79.6	28.4	135.0	6.4	5.4	0.3	367.5
1999–00	74.6	43.5	88.3	28.7	129.4	6.9	5.8	0.3	377.6
2000–01	77.7	45.1	93.8	28.8	123.2	6.1	5.6	0.3	380.8
2001–02	79.4	44.3	99.6	31.0	138.4	9.2	4.9	0.3	407.1
2002–03	82.7	46.7	103.8	32.4	144.6	9.3	4.3	0.3	424.0
2003–04	85.0	47.1	110.0	32.0	153.8	9.2	4.5	0.3	442.0
2004–05	89.9	49.4	119.9	34.5	154.8	8.7	5.6	0.3	463.4
2005–06	92.4	53.4	127.3	36.2	161.9	8.7	4.4	0.3	484.6
2006–07	97.2	55.7	132.7	38.1	172.1	8.8	2.1	0.3	507.1
2007–08	99.1	64.7	131.0	38.4	206.1	8.4	4.6	0.3	520.5
2008–09	94.8	61.1	133.1	35.8	223.6	7.8	5.0	0.3	536.7
2009–10	99.1	60.3	136.8	34.0	250.2	7.1	5.5	0.3	565.5

Source: ARA (2008), BTRE (2006a), BITRE (2013a), BITRE (2012h) and BITRE estimates.



**Table T 2.3a** Intrastate freight by state/territory, by transport mode—road

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1971–72	7.5	5.4	3.6	2.3	2.3	0.4	0.1	0.1	21.7
1972–73	7.6	5.5	3.6	2.3	2.5	0.4	0.1	0.1	22.1
1973–74	7.8	5.7	3.7	2.2	2.6	0.5	0.1	0.1	22.6
1974–75	8.1	5.9	3.9	2.3	2.8	0.5	0.1	0.1	23.7
1975–76	8.3	6.2	4.0	2.3	3.0	0.5	0.1	0.1	24.6
1976–77	9.3	7.0	4.8	2.5	3.6	0.6	0.2	0.1	28.1
1977–78	10.5	7.9	5.6	2.8	4.3	0.7	0.2	0.2	32.0
1978–79	11.3	8.7	6.2	2.9	4.8	0.8	0.2	0.2	35.1
1979–80	12.0	9.3	6.6	2.9	5.3	0.8	0.3	0.2	37.4
1980–81	12.8	9.9	7.2	2.9	5.9	0.9	0.3	0.2	40.1
1981–82	13.6	10.6	7.8	2.7	6.6	1.0	0.4	0.2	42.8
1982–83	15.2	11.9	8.9	2.8	7.7	1.1	0.4	0.2	48.2
1983–84	15.4	12.1	9.0	2.7	8.0	1.2	0.4	0.2	49.0
1984–85	16.4	13.0	9.6	2.6	8.7	1.3	0.5	0.2	52.4
1985–86	16.7	13.1	9.7	2.6	9.0	1.3	0.5	0.2	53.3
1986–87	17.5	13.6	10.3	2.7	9.7	1.4	0.6	0.2	56.0
1987–88	17.6	13.6	10.3	2.7	9.8	1.4	0.6	0.3	56.4
1988–89	17.5	13.5	10.2	2.7	9.8	1.4	0.7	0.3	56.0
1989–90	17.6	13.6	10.2	2.8	10.0	1.4	0.7	0.3	56.5
1990–91	18.0	13.8	10.5	2.8	10.5	1.5	0.8	0.3	58.1
1991–92	19.6	14.7	11.7	2.9	12.0	1.7	0.9	0.3	63.7
1992–93	20.6	15.3	12.3	3.0	12.8	1.8	1.0	0.3	67.0
1993–94	21.9	16.0	13.1	3.1	13.9	1.9	1.0	0.3	71.3
1994–95	23.0	16.8	13.9	3.2	14.9	2.0	1.1	0.2	75.1
1995–96	23.8	17.2	14.3	3.3	15.6	2.1	1.2	0.3	77.6
1996–97	24.7	17.6	15.0	3.4	16.4	2.1	1.3	0.2	80.8
1997–98	25.5	17.9	15.6	3.4	17.4	2.2	1.4	0.2	83.8
1998–99	26.0	18.7	18.2	3.7	16.9	2.4	1.6	0.2	87.6
1999–00	25.8	19.2	18.9	4.3	17.1	2.4	1.5	0.3	89.5
2000–01	26.0	19.7	20.0	4.7	18.0	2.5	1.4	0.2	92.5
2001–02	26.4	20.5	21.4	5.1	19.1	2.7	1.3	0.2	96.7
2002–03	26.4	21.0	22.5	5.5	19.9	2.8	1.2	0.3	99.4
2003–04	26.3	21.4	23.5	5.9	20.8	2.8	1.1	0.3	102.1
2004–05	27.2	22.4	25.5	6.6	22.6	3.1	1.1	0.3	108.7
2005–06	27.2	23.0	26.8	7.1	23.9	3.2	1.0	0.3	112.6
2006–07	27.5	23.9	28.3	7.6	25.7	3.4	1.1	0.3	117.8
2007–08	28.1	24.5	29.2	7.9	26.5	3.5	1.1	0.3	121.1
2008–09	27.7	24.3	29.2	7.9	26.5	3.5	1.2	0.3	120.5
2009–10	27.0	23.9	28.8	7.8	26.0	3.4	1.2	0.3	118.3
2010–11	27.2	24.2	29.4	7.9	26.6	3.5	1.2	0.3	120.3
2011–12	28.2	25.2	31.0	8.3	28.0	3.7	1.3	0.3	125.8

Source: BTRE (2006a) and BITRE estimates.

**Table T 2.3b** Intrastate freight by state/territory, by transport mode—rail

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
<i>billion tonne-kilometres</i>									
2007–08	16.8	0.7	45.1	2.1	105.0	0.5	0.8	na	171.0
2008–09	17.6	0.4	50.6	1.8	137.0	0.3	1.1	na	208.9
2009–10	18.3	0.4	54.9	2.0	154.0	0.1	1.2	na	231.0

na: not applicable.

Source: BITRE (2012h).

**Table T 2.3c** Intrastate freight by state/territory, by transport mode—shipping

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
<i>billion tonne-kilometres</i>									
1995–96	0.1	0.0	19.3	0.1	3.6	0.2	0.0	na	23.4
1996–97	0.1	0.0	20.9	0.2	3.8	0.0	0.0	na	25.0
1997–98	0.2	0.0	20.8	0.1	4.0	0.1	0.0	na	25.3
1998–99	0.1	0.1	19.8	0.1	2.9	0.2	0.1	na	23.3
1999–00	0.1	0.0	23.7	0.2	3.3	0.2	0.1	na	27.6
2000–01	0.1	0.0	24.1	0.2	6.6	0.1	0.1	na	31.1
2001–02	0.1	0.0	24.1	0.2	5.6	0.6	0.1	na	30.6
2002–03	0.0	0.0	24.4	0.2	5.7	0.1	0.1	na	30.6
2003–04	0.0	0.0	24.7	0.2	5.3	0.1	0.0	na	30.3
2004–05	0.0	0.0	27.5	0.2	4.4	0.1	0.0	na	32.3
2005–06	0.0	0.0	31.3	0.2	3.7	0.1	0.0	na	35.3
2006–07	0.0	0.1	32.2	0.1	4.9	0.1	0.0	na	37.5
2007–08	0.0	0.1	32.1	0.2	5.6	0.1	0.0	na	38.1
2008–09	0.0	0.1	32.1	0.1	4.1	0.1	0.0	na	36.6
2009–10	0.0	0.0	32.3	0.2	1.4	0.1	0.0	na	34.1
2010–11	0.0	0.0	32.4	0.2	1.6	0.1	0.1	na	34.4
2011–12	0.0	0.1	33.0	0.3	1.3	0.1	0.0	na	34.8

na: not applicable.

Source: BITRE (2013a).

**Table T 2.4a Interstate freight by state/territory, by transport mode—road**

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1971–72	2.8	1.4	0.4	0.5	0.2	na	0.2	0.0	5.4
1972–73	3.4	1.7	0.5	0.6	0.3	na	0.2	0.0	6.6
1973–74	3.9	1.9	0.6	0.8	0.3	na	0.2	0.0	7.8
1974–75	4.2	2.1	0.7	0.8	0.4	na	0.2	0.0	8.4
1975–76	4.7	2.3	0.7	0.9	0.3	na	0.3	0.0	9.2
1976–77	4.9	2.4	0.8	0.9	0.4	na	0.3	0.0	9.7
1977–78	5.0	2.5	0.8	0.9	0.4	na	0.3	0.0	9.8
1978–79	5.5	2.7	0.9	1.0	0.4	na	0.3	0.0	10.8
1979–80	6.2	3.0	1.0	1.2	0.5	na	0.3	0.0	12.3
1980–81	6.6	3.3	1.0	1.3	0.6	na	0.4	0.0	13.3
1981–82	7.1	3.5	1.1	1.5	0.7	na	0.4	0.0	14.3
1982–83	6.4	3.2	1.0	1.3	0.6	na	0.3	0.0	12.8
1983–84	7.9	3.9	1.2	1.7	0.9	na	0.4	0.0	15.9
1984–85	8.1	4.0	1.3	1.8	0.9	na	0.4	0.0	16.5
1985–86	9.1	4.5	1.4	2.1	1.1	na	0.5	0.0	18.6
1986–87	9.2	4.5	1.5	2.1	1.1	na	0.5	0.0	18.9
1987–88	10.4	5.1	1.6	2.5	1.4	na	0.5	0.0	21.4
1988–89	11.4	5.5	1.8	2.8	1.7	na	0.5	0.0	23.8
1989–90	12.0	5.8	1.9	3.1	1.9	na	0.6	0.0	25.1
1990–91	12.1	5.9	1.9	3.1	1.9	na	0.6	0.0	25.4
1991–92	12.3	5.9	1.9	3.2	2.0	na	0.6	0.0	25.9
1992–93	13.3	6.4	2.1	3.7	2.4	na	0.6	0.0	28.6
1993–94	14.2	6.8	2.2	3.9	2.5	na	0.7	0.0	30.3
1994–95	15.1	7.2	2.4	4.3	2.8	na	0.7	0.0	32.5
1995–96	16.7	8.0	2.6	4.6	2.9	na	0.8	0.0	35.6
1996–97	18.0	8.6	2.8	4.8	3.0	na	0.8	0.0	38.0
1997–98	19.3	9.2	3.1	5.0	3.0	na	0.9	0.0	40.5
1998–99	20.9	9.9	3.3	5.1	2.9	na	0.9	0.0	43.1
1999–00	22.5	10.6	3.6	5.2	2.8	na	1.0	0.0	45.7
2000–01	23.3	11.0	3.7	5.2	2.6	na	1.0	0.0	46.8
2001–02	24.7	11.7	4.0	5.3	2.6	na	1.1	0.0	49.4
2002–03	26.3	12.4	4.1	5.3	2.6	na	0.8	0.0	51.6
2003–04	27.9	13.1	4.4	5.6	2.8	na	0.8	0.0	54.6
2004–05	29.4	13.8	4.6	6.0	3.0	na	0.9	0.0	57.6
2005–06	31.0	14.5	4.9	6.3	3.1	na	0.9	0.0	60.7
2006–07	33.1	15.5	5.2	6.7	3.3	na	1.0	0.1	64.7
2007–08	36.2	16.9	5.8	7.2	3.4	na	1.0	0.1	70.5
2008–09	36.8	17.0	5.9	7.2	3.4	na	1.0	0.1	71.4
2009–10	38.0	17.6	6.1	7.5	3.6	na	1.1	0.1	73.8
2010–11	39.6	18.4	6.4	7.8	3.7	na	1.1	0.1	77.0
2011–12	41.9	19.5	6.8	8.3	3.9	na	1.2	0.1	81.6

na: not applicable.

Source: BTRE (2006a) and BITRE estimates.

**Table T 2.4b** Interstate freight by state/territory, by transport mode—shipping

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion tonne-kilometres</i>								
1995–96	4.6	8.5	4.8	9.0	50.7	3.5	1.6	na	82.7
1996–97	5.4	8.8	4.7	9.5	53.8	3.2	2.2	na	87.6
1997–98	5.4	10.3	4.8	9.6	56.5	2.3	2.8	na	91.7
1998–99	4.8	7.8	4.9	9.6	52.2	3.3	2.8	na	85.4
1999–00	6.2	8.8	6.6	9.4	43.0	3.9	3.3	na	81.2
2000–01	7.3	9.4	6.6	8.9	35.2	2.8	3.1	na	73.3
2001–02	5.1	6.6	6.8	9.4	44.3	5.1	2.4	na	79.8
2002–03	5.6	7.5	7.2	9.9	46.1	5.6	2.2	na	84.3
2003–04	4.9	6.5	9.1	8.0	50.3	5.4	2.6	na	86.8
2004–05	5.3	6.6	9.6	8.3	43.7	4.5	3.6	na	81.5
2005–06	5.3	9.0	9.9	8.7	47.2	4.4	2.5	na	86.9
2006–07	6.2	8.9	9.7	9.2	50.0	4.3	0.1	na	88.4
2007–08	6.0	7.9	11.7	10.3	46.9	4.4	0.0	na	87.2
2008–09	3.0	6.1	9.9	9.2	35.9	3.8	2.8	na	70.7
2009–10	5.9	6.1	8.8	8.1	48.3	3.4	0.0	na	80.6
2010–11	4.7	5.7	10.1	8.4	44.0	3.4	0.2	na	76.4
2011–12	5.2	5.8	11.0	8.8	31.7	3.2	0.1	na	65.8

na: not applicable.

Source: BITRE (2013a)

**Table T.2.5** Urban road freight by capital city

Financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Total
	<i>billion tonne kilometres</i>								
1971–72	3.1	2.2	0.7	0.7	0.9	0.1	0.1	0.1	7.9
1972–73	3.2	2.3	0.8	0.8	0.9	0.1	0.1	0.1	8.2
1973–74	3.4	2.4	0.8	0.8	1.0	0.2	0.1	0.1	8.8
1974–75	3.5	2.5	0.9	0.8	1.0	0.2	0.1	0.1	9.2
1975–76	3.6	2.6	1.0	0.9	1.1	0.2	0.1	0.1	9.6
1976–77	3.8	2.8	1.1	0.9	1.1	0.2	0.1	0.1	10.2
1977–78	3.9	2.9	1.2	1.0	1.2	0.2	0.1	0.2	10.6
1978–79	4.1	3.1	1.4	1.0	1.3	0.2	0.1	0.2	11.3
1979–80	4.5	3.4	1.6	1.0	1.4	0.2	0.1	0.2	12.4
1980–81	4.7	3.7	1.8	1.0	1.5	0.2	0.1	0.2	13.3
1981–82	5.0	3.9	2.1	1.0	1.6	0.3	0.2	0.2	14.2
1982–83	5.0	3.9	2.1	1.0	1.6	0.3	0.2	0.2	14.2
1983–84	5.2	4.2	2.2	1.1	1.7	0.3	0.2	0.2	15.1
1984–85	5.6	4.5	2.4	1.2	1.8	0.3	0.2	0.2	16.2
1985–86	5.9	4.9	2.6	1.2	1.9	0.3	0.2	0.2	17.3
1986–87	6.0	5.0	2.6	1.3	1.9	0.3	0.2	0.2	17.6
1987–88	6.3	5.4	2.8	1.3	2.1	0.4	0.2	0.3	18.7
1988–89	6.6	5.7	2.9	1.4	2.2	0.4	0.2	0.3	19.7
1989–90	7.2	6.3	3.2	1.5	2.4	0.4	0.3	0.3	21.4
1990–91	7.0	6.2	3.1	1.5	2.4	0.4	0.3	0.3	21.0
1991–92	6.9	6.2	3.1	1.5	2.3	0.3	0.2	0.3	20.7
1992–93	7.1	6.5	3.2	1.5	2.4	0.3	0.2	0.3	21.6
1993–94	7.3	6.8	3.4	1.6	2.5	0.3	0.2	0.3	22.4
1994–95	7.8	7.3	3.6	1.7	2.7	0.3	0.2	0.2	23.9
1995–96	8.3	7.7	3.9	1.8	2.9	0.3	0.2	0.3	25.3
1996–97	8.5	8.0	4.1	1.8	3.0	0.3	0.2	0.2	26.2
1997–98	8.6	8.1	4.2	1.9	3.0	0.3	0.2	0.2	26.5
1998–99	9.0	8.7	4.7	1.9	3.2	0.3	0.2	0.2	28.2
1999–00	9.3	9.1	5.0	2.0	3.4	0.3	0.2	0.3	29.5
2000–01	9.5	9.3	5.3	2.0	3.5	0.3	0.2	0.2	30.2
2001–02	9.7	9.8	5.7	2.1	3.6	0.3	0.2	0.2	31.6
2002–03	10.0	10.0	6.1	2.2	3.8	0.3	0.2	0.3	32.9
2003–04	10.4	10.3	6.6	2.3	4.1	0.3	0.2	0.3	34.5
2004–05	10.6	10.6	7.0	2.4	4.2	0.4	0.2	0.3	35.7
2005–06	10.9	10.9	7.2	2.5	4.6	0.4	0.3	0.3	37.0
2006–07	11.2	11.2	7.5	2.6	5.1	0.4	0.3	0.3	38.5
2007–08	11.7	11.7	7.8	2.7	5.3	0.4	0.3	0.3	40.2
2008–09	11.7	11.7	7.9	2.7	5.3	0.4	0.3	0.3	40.2
2009–10	11.7	11.7	7.9	2.7	5.4	0.4	0.3	0.3	40.3
2010–11	12.0	12.0	8.1	2.8	5.5	0.4	0.3	0.3	41.3
2011–12	12.5	12.5	8.6	2.9	5.8	0.4	0.3	0.3	43.2

Source: BTRE (2006a) and BITRE estimates.



# CHAPTER 3

## Passengers

**Table T 3.1** Total passenger travel by transport mode

Financial year	Passenger cars	Buses	Rail	Air	Other <sup>4</sup>	Total
			<i>billion passenger km</i>			
1970–71	102.36	7.26	12.57	5.68	11.31	139.18
1971–72	108.99	7.17	11.43	6.02	12.07	145.68
1972–73	112.91	7.39	11.30	6.44	13.09	151.13
1973–74	120.36	7.41	10.37	7.68	14.56	160.37
1974–75	125.27	7.43	9.92	8.28	15.85	166.76
1975–76	130.14	7.42	8.97	8.29	16.49	171.33
1976–77	135.97	7.50	8.85	7.99	18.03	178.34
1977–78	140.53	7.61	8.68	8.90	18.94	184.65
1978–79	144.42	7.71	8.50	9.40	19.31	189.34
1979–80	144.95	8.16	8.82	10.36	19.20	191.48
1980–81	147.15	8.72	9.26	10.70	19.62	195.45
1981–82	154.30	9.22	9.03	11.15	20.01	203.72
1982–83	154.81	10.46	8.88	10.27	19.73	204.15
1983–84	161.85	11.71	8.83	10.64	20.97	214.00
1984–85	167.94	13.03	8.89	11.34	21.86	223.06
1985–86	173.06	14.01	9.09	12.34	21.99	230.49
1986–87	176.79	15.04	9.35	13.16	22.06	236.40
1987–88	185.48	16.03	9.72	14.46	22.61	248.30
1988–89	194.42	16.87	10.00	15.07	23.55	259.90
1989–90	200.06	17.74	10.04	11.24	23.51	262.59
1990–91	200.49	17.04	10.17	15.95	22.65	266.30
1991–92	204.51	16.57	9.99	20.68	22.75	274.51
1992–93	210.82	16.51	9.78	20.94	23.15	281.20
1993–94	216.15	16.30	9.88	24.36	23.85	290.53
1994–95	222.87	16.11	10.34	26.89	25.15	301.35
1995–96	226.01	16.62	10.57	28.88	25.65	307.73
1996–97	227.68	16.43	10.85	29.86	25.70	310.51
1997–98	229.90	16.58	10.81	30.31	26.42	314.02
1998–99	235.27	16.65	11.03	30.91	26.88	320.74
1999–00	239.81	16.99	11.38	32.69	27.33	328.20
2000–01	237.16	17.24	11.98	35.50	27.61	329.48
2001–02	243.17	17.30	11.82	32.80	28.61	333.69
2002–03	249.45	17.62	11.82	35.58	29.43	343.90
2003–04	261.37	17.65	11.91	40.86	30.35	362.15
2004–05	262.11	17.64	11.87	45.55	30.59	367.76
2005–06	257.29	18.01	12.36	48.28	31.31	367.25
2006–07	260.55	18.23	12.98	52.52	32.53	376.81
2007–08	262.06	18.51	13.99	56.67	34.41	385.64
2008–09	260.95	18.79	14.76	57.96	35.71	388.17
2009–10	262.67	19.02	14.72	59.45	37.87	393.72
2010–11	265.29	19.30	14.94	63.57	39.41	402.51
2011–12	267.14	19.74	15.16	64.77	41.03	407.84

<sup>4</sup> See end notes.

Source: BITRE (2009) and BITRE estimates.

**Table T 3.2** Inter-capital city passenger travel by city pair

Financial year	Syd–Mel	Syd–Canb	Syd–Bne	Mel–Adl	Mel–Bne	Syd–Adl
	<i>thousand passenger movements</i>					
1999–00	7 169	9 519	5 283	2 554	2 008	1 407
2000–01	8 314	8 616	6 171	2 708	2 477	1 737
2001–02	7 293	9 225	5 400	2 664	2 638	1 397
2002–03	7 066	8 556	5 376	2 588	2 630	1 371
2003–04	7 303	8 681	5 459	2 744	2 948	1 533
2004–05	7 652	7 732	5 511	2 756	2 912	1 525
2005–06	7 761	7 230	5 287	2 805	2 911	1 572
2006–07	8 079	7 739	5 306	2 834	3 040	1 648
2007–08	8 302	7 736	5 854	2 903	2 996	1 753
2008–09	8 216	7 944	5 651	2 923	3 027	1 683
2009–10	8 817	8 156	5 816	3 063	3 119	1 897
2010–11	9 186	8 878	5 988	3 123	3 482	1 964

Source: BTRE (2006c), updated by TRA (2012) and BITRE estimates.



**Table T 3.3a** Total passenger kilometres travelled by capital city—Sydney

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	24.13	2.02	0.24	3.14		1.57	0.10	31.20
1977–78	24.80	2.10	0.24	3.09		1.60	0.11	31.94
1978–79	25.59	2.15	0.25	3.09		1.59	0.11	32.78
1979–80	25.79	2.13	0.27	3.52		1.63	0.12	33.48
1980–81	26.15	2.18	0.29	3.64		1.69	0.13	34.07
1981–82	27.17	2.26	0.32	3.76		1.68	0.14	35.33
1982–83	26.97	2.22	0.33	3.55		1.72	0.15	34.94
1983–84	28.34	2.37	0.34	3.47		1.76	0.15	36.42
1984–85	29.65	2.47	0.34	3.44		1.81	0.15	37.86
1985–86	30.51	2.54	0.31	3.71		1.84	0.16	39.07
1986–87	31.20	2.56	0.29	3.78		1.91	0.17	39.91
1987–88	32.59	2.63	0.27	4.08		1.97	0.15	41.69
1988–89	33.83	2.68	0.27	4.13	0.01	2.00	0.16	43.09
1989–90	34.70	2.63	0.24	4.23	0.01	1.96	0.18	43.95
1990–91	34.69	2.47	0.21	4.30	0.01	2.01	0.15	43.83
1991–92	35.29	2.47	0.20	4.20	0.01	2.01	0.13	44.31
1992–93	36.35	2.51	0.20	4.03	0.01	1.95	0.11	45.17
1993–94	37.20	2.60	0.20	4.13	0.01	1.97	0.11	46.22
1994–95	38.26	2.78	0.19	4.40	0.01	2.03	0.12	47.79
1995–96	38.48	2.91	0.18	4.50	0.01	2.08	0.12	48.30
1996–97	38.43	2.97	0.18	4.64	0.01	2.13	0.13	48.50
1997–98	38.99	3.09	0.17	4.67	0.01	2.18	0.12	49.23
1998–99	39.93	3.19	0.16	4.74	0.02	2.21	0.12	50.38
1999–00	40.94	3.27	0.16	4.90	0.02	2.21	0.12	51.62
2000–01	40.68	3.32	0.16	5.27	0.02	2.21	0.14	51.80
2001–02	41.52	3.40	0.17	4.89	0.02	2.12	0.13	52.24
2002–03	42.18	3.48	0.16	4.89	0.02	2.12	0.13	52.98
2003–04	44.28	3.57	0.17	4.94	0.02	2.10	0.13	55.21
2004–05	44.55	3.56	0.18	4.96	0.02	2.16	0.13	55.57
2005–06	43.70	3.59	0.20	5.05	0.02	2.16	0.13	54.86
2006–07	43.99	3.71	0.22	5.22	0.02	2.20	0.13	55.49
2007–08	44.26	3.89	0.24	5.51	0.02	2.28	0.13	56.32
2008–09	44.20	3.98	0.26	5.49	0.02	2.34	0.13	56.43
2009–10	44.63	4.16	0.28	5.32	0.02	2.33	0.14	56.88
2010–11	45.43	4.32	0.30	5.27	0.02	2.41	0.14	57.89
2011–12	45.63	4.47	0.31	5.47	0.02	2.41	0.14	58.46

Note: Data are not readily available for missing years.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3b** Total passenger kilometres travelled by capital city—Melbourne

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	21.79	1.96	0.20	1.91	0.53	0.56	na	26.94
1977–78	22.76	2.09	0.20	1.81	0.53	0.56	na	27.95
1978–79	23.54	2.09	0.19	1.71	0.53	0.57	na	28.63
1979–80	23.76	2.00	0.19	1.60	0.52	0.58	na	28.66
1980–81	24.29	1.95	0.19	1.53	0.53	0.59	na	29.09
1981–82	25.83	1.95	0.20	1.39	0.54	0.61	na	30.51
1982–83	26.07	1.86	0.20	1.41	0.53	0.62	na	30.69
1983–84	27.08	1.97	0.21	1.44	0.54	0.64	na	31.88
1984–85	27.98	2.05	0.21	1.45	0.60	0.68	na	32.97
1985–86	29.07	2.21	0.20	1.54	0.62	0.71	na	34.35
1986–87	29.91	2.34	0.20	1.60	0.63	0.74	na	35.43
1987–88	31.46	2.54	0.20	1.53	0.65	0.78	na	37.15
1988–89	32.96	2.71	0.22	1.61	0.66	0.81	na	38.98
1989–90	33.74	2.74	0.20	1.63	0.53	0.85	na	39.71
1990–91	33.51	2.68	0.19	1.63	0.59	0.84	na	39.44
1991–92	33.97	2.73	0.19	1.76	0.59	0.81	na	40.05
1992–93	34.63	2.80	0.20	1.81	0.51	0.81	na	40.76
1993–94	35.30	2.89	0.20	1.81	0.51	0.83	na	41.55
1994–95	36.30	3.02	0.20	1.94	0.51	0.86	na	42.83
1995–96	37.03	2.96	0.20	1.99	0.52	0.88	na	43.58
1996–97	37.41	2.92	0.20	1.97	0.52	0.88	na	43.90
1997–98	38.15	2.97	0.20	1.90	0.52	0.90	na	44.63
1998–99	39.21	2.98	0.19	1.99	0.53	0.92	na	45.81
1999–00	40.12	2.98	0.19	2.11	0.56	0.93	na	46.89
2000–01	40.14	3.04	0.20	2.19	0.58	0.94	na	47.08
2001–02	40.88	3.12	0.21	2.30	0.59	0.94	na	48.04
2002–03	41.64	3.18	0.21	2.34	0.60	0.95	na	48.92
2003–04	43.04	3.26	0.22	2.41	0.60	0.95	na	50.49
2004–05	43.27	3.30	0.24	2.48	0.61	0.94	na	50.83
2005–06	42.80	3.38	0.26	2.78	0.62	0.95	na	50.79
2006–07	42.83	3.52	0.29	3.07	0.63	1.01	na	51.34
2007–08	43.39	3.69	0.31	3.48	0.65	1.10	na	52.62
2008–09	42.89	3.80	0.33	3.72	0.71	1.19	na	52.64
2009–10	43.57	4.01	0.35	3.82	0.70	1.23	na	53.68
2010–11	44.45	4.19	0.37	3.98	0.73	1.28	na	55.00
2011–12	45.04	4.35	0.39	3.86	0.77	1.41	na	55.83

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3c** Total passenger kilometres travelled by capital city—Brisbane

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	7.82	0.86	0.14	0.38	na	0.49	0.00	9.70
1977–78	8.21	0.95	0.14	0.37	na	0.51	0.00	10.17
1978–79	8.60	1.01	0.14	0.35	na	0.50	0.00	10.61
1979–80	8.78	1.02	0.15	0.38	na	0.49	0.00	10.83
1980–81	9.16	1.03	0.16	0.42	na	0.45	0.00	11.23
1981–82	9.88	1.07	0.17	0.46	na	0.47	0.00	12.05
1982–83	10.07	1.08	0.17	0.47	na	0.49	0.00	12.29
1983–84	10.50	1.21	0.17	0.52	na	0.47	0.00	12.87
1984–85	10.82	1.29	0.18	0.55	na	0.49	0.00	13.33
1985–86	11.40	1.37	0.17	0.62	na	0.49	0.00	14.04
1986–87	11.68	1.43	0.17	0.68	na	0.51	0.00	14.47
1987–88	12.39	1.50	0.18	0.74	na	0.55	0.00	15.36
1988–89	13.23	1.54	0.21	0.85	na	0.61	0.00	16.44
1989–90	13.69	1.54	0.20	0.78	na	0.58	0.00	16.80
1990–91	13.94	1.49	0.20	0.79	na	0.62	0.00	17.04
1991–92	14.53	1.50	0.21	0.75	na	0.64	0.00	17.63
1992–93	15.28	1.53	0.21	0.74	na	0.63	0.00	18.39
1993–94	15.80	1.62	0.20	0.72	na	0.66	0.00	19.00
1994–95	16.46	1.79	0.19	0.70	na	0.72	0.01	19.86
1995–96	16.87	1.93	0.17	0.74	na	0.71	0.01	20.43
1996–97	17.01	1.99	0.17	0.79	na	0.71	0.01	20.68
1997–98	17.34	2.14	0.16	0.80	na	0.71	0.01	21.15
1998–99	17.70	2.19	0.15	0.81	na	0.65	0.01	21.51
1999–00	18.21	2.25	0.15	0.87	na	0.68	0.01	22.17
2000–01	18.24	2.28	0.16	0.94	na	0.69	0.01	22.31
2001–02	18.81	2.40	0.17	0.97	na	0.71	0.01	23.06
2002–03	19.36	2.48	0.16	0.97	na	0.73	0.01	23.72
2003–04	20.70	2.57	0.17	1.01	na	0.77	0.01	25.24
2004–05	20.89	2.59	0.18	1.00	na	0.82	0.01	25.50
2005–06	20.74	2.64	0.20	1.08	na	0.91	0.02	25.59
2006–07	21.18	2.75	0.22	1.07	na	0.96	0.02	26.20
2007–08	21.46	2.93	0.24	1.06	na	1.00	0.02	26.71
2008–09	21.06	3.05	0.26	1.15	na	1.07	0.02	26.61
2009–10	21.03	3.28	0.28	1.10	na	1.13	0.02	26.83
2010–11	21.14	3.39	0.28	1.07	na	1.17	0.01	27.06
2011–12	21.24	3.53	0.30	1.04	na	1.20	0.01	27.32

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3d** Total passenger kilometres travelled by capital city—Adelaide

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	8.23	0.57	0.11	0.17	0.01	0.42	na	9.50
1977–78	8.46	0.59	0.11	0.16	0.01	0.43	na	9.77
1978–79	8.50	0.60	0.11	0.16	0.01	0.44	na	9.82
1979–80	8.30	0.58	0.11	0.18	0.02	0.46	na	9.64
1980–81	8.17	0.58	0.11	0.19	0.02	0.51	na	9.58
1981–82	8.48	0.58	0.12	0.20	0.02	0.52	na	9.93
1982–83	8.53	0.57	0.12	0.18	0.02	0.47	na	9.90
1983–84	8.94	0.63	0.12	0.17	0.02	0.48	na	10.37
1984–85	9.31	0.67	0.12	0.17	0.02	0.46	na	10.75
1985–86	9.62	0.67	0.11	0.18	0.02	0.47	na	11.07
1986–87	9.81	0.66	0.10	0.18	0.02	0.47	na	11.24
1987–88	10.20	0.68	0.10	0.13	0.02	0.50	na	11.62
1988–89	10.58	0.71	0.10	0.14	0.02	0.47	na	12.02
1989–90	10.75	0.71	0.09	0.14	0.02	0.50	na	12.20
1990–91	10.66	0.69	0.08	0.12	0.02	0.53	na	12.10
1991–92	10.75	0.70	0.08	0.11	0.01	0.53	na	12.19
1992–93	10.94	0.72	0.07	0.12	0.01	0.51	na	12.38
1993–94	10.94	0.74	0.07	0.15	0.02	0.52	na	12.44
1994–95	11.03	0.78	0.07	0.16	0.01	0.54	na	12.60
1995–96	11.00	0.80	0.07	0.15	0.01	0.54	na	12.57
1996–97	11.06	0.79	0.06	0.15	0.01	0.54	na	12.62
1997–98	11.22	0.81	0.06	0.14	0.01	0.54	na	12.79
1998–99	11.61	0.81	0.06	0.14	0.01	0.53	na	13.15
1999–00	12.00	0.80	0.06	0.13	0.01	0.53	na	13.53
2000–01	11.96	0.79	0.06	0.13	0.01	0.55	na	13.50
2001–02	12.13	0.80	0.06	0.14	0.02	0.56	na	13.71
2002–03	12.53	0.82	0.06	0.16	0.02	0.57	na	14.16
2003–04	12.66	0.83	0.07	0.18	0.02	0.57	na	14.32
2004–05	12.41	0.83	0.07	0.18	0.02	0.58	na	14.08
2005–06	12.17	0.84	0.08	0.19	0.02	0.61	na	13.90
2006–07	12.26	0.86	0.08	0.19	0.02	0.62	na	14.03
2007–08	11.91	0.91	0.09	0.19	0.02	0.63	na	13.76
2008–09	11.83	0.94	0.10	0.20	0.02	0.64	na	13.72
2009–10	11.95	0.98	0.10	0.19	0.02	0.65	na	13.89
2010–11	11.88	1.01	0.11	0.17	0.02	0.65	na	13.83
2011–12	11.78	1.04	0.11	0.16	0.02	0.64	na	13.75

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3e** Total passenger kilometres travelled by capital city—Perth

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	8.19	0.92	0.10	0.09	na	0.52	0.00	9.82
1977–78	8.61	0.97	0.10	0.10	na	0.53	0.00	10.31
1978–79	8.86	1.00	0.10	0.10	na	0.52	0.00	10.58
1979–80	8.88	1.00	0.11	0.08	na	0.56	0.00	10.63
1980–81	8.95	1.02	0.11	0.07	na	0.58	0.00	10.74
1981–82	9.45	1.03	0.13	0.07	na	0.55	0.00	11.22
1982–83	9.53	0.99	0.13	0.08	na	0.55	0.00	11.29
1983–84	10.15	1.04	0.14	0.11	na	0.48	0.00	11.91
1984–85	10.52	1.06	0.14	0.11	na	0.46	0.00	12.29
1985–86	10.90	1.07	0.13	0.12	na	0.50	0.00	12.72
1986–87	11.19	1.06	0.13	0.12	na	0.51	0.00	13.02
1987–88	11.78	1.10	0.13	0.12	na	0.51	0.00	13.64
1988–89	12.36	1.16	0.14	0.11	na	0.54	0.00	14.32
1989–90	12.73	1.19	0.13	0.11	na	0.57	0.00	14.73
1990–91	12.65	1.15	0.11	0.09	na	0.55	0.00	14.56
1991–92	12.85	1.17	0.11	0.12	na	0.53	0.00	14.77
1992–93	13.31	1.22	0.10	0.17	na	0.52	0.00	15.32
1993–94	14.06	1.30	0.09	0.30	na	0.51	0.00	16.26
1994–95	14.96	1.41	0.09	0.30	na	0.52	0.00	17.29
1995–96	15.28	1.49	0.09	0.34	na	0.52	0.00	17.71
1996–97	15.44	1.49	0.09	0.38	na	0.52	0.00	17.91
1997–98	15.66	1.51	0.08	0.39	na	0.53	0.00	18.17
1998–99	16.08	1.51	0.08	0.38	na	0.52	0.00	18.58
1999–00	16.31	1.52	0.08	0.39	na	0.55	0.00	18.85
2000–01	16.11	1.52	0.09	0.41	na	0.57	0.00	18.70
2001–02	16.44	1.58	0.09	0.41	na	0.58	0.00	19.11
2002–03	16.89	1.62	0.09	0.42	na	0.60	0.00	19.62
2003–04	17.74	1.68	0.10	0.42	na	0.62	0.00	20.56
2004–05	18.02	1.70	0.11	0.44	na	0.63	0.00	20.90
2005–06	17.68	1.74	0.12	0.46	na	0.65	0.00	20.65
2006–07	18.08	1.82	0.14	0.50	na	0.65	0.00	21.19
2007–08	18.18	1.93	0.15	0.66	na	0.61	0.00	21.53
2008–09	18.69	2.00	0.17	0.87	na	0.63	0.00	22.35
2009–10	18.56	2.09	0.18	0.90	na	0.63	0.00	22.35
2010–11	18.79	2.18	0.19	0.94	na	0.63	0.00	22.74
2011–12	19.15	2.28	0.20	1.02	na	0.68	0.00	23.33

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3f** Total passenger kilometres travelled by capital city—Hobart

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	1.23	0.13	0.01	na	na	0.12	na	1.51
1977–78	1.31	0.14	0.01	na	na	0.12	na	1.59
1978–79	1.37	0.15	0.01	na	na	0.11	na	1.64
1979–80	1.39	0.15	0.01	na	na	0.11	na	1.65
1980–81	1.42	0.15	0.01	na	na	0.11	na	1.69
1981–82	1.47	0.16	0.01	na	na	0.09	na	1.74
1982–83	1.47	0.17	0.01	na	na	0.09	na	1.73
1983–84	1.53	0.18	0.01	na	na	0.10	na	1.82
1984–85	1.59	0.20	0.01	na	na	0.10	na	1.90
1985–86	1.67	0.19	0.01	na	na	0.10	na	1.98
1986–87	1.68	0.19	0.01	na	na	0.10	na	1.99
1987–88	1.75	0.19	0.01	na	na	0.10	na	2.04
1988–89	1.82	0.19	0.01	na	na	0.09	na	2.11
1989–90	1.91	0.18	0.01	na	na	0.10	na	2.20
1990–91	1.92	0.17	0.01	na	na	0.09	na	2.20
1991–92	1.95	0.18	0.01	na	na	0.09	na	2.24
1992–93	2.02	0.19	0.01	na	na	0.09	na	2.32
1993–94	2.07	0.21	0.01	na	na	0.09	na	2.38
1994–95	2.10	0.22	0.01	na	na	0.09	na	2.43
1995–96	2.12	0.22	0.01	na	na	0.09	na	2.45
1996–97	2.12	0.22	0.01	na	na	0.09	na	2.44
1997–98	2.09	0.22	0.01	na	na	0.09	na	2.41
1998–99	2.08	0.22	0.01	na	na	0.09	na	2.39
1999–00	2.08	0.22	0.01	na	na	0.09	na	2.40
2000–01	2.02	0.22	0.01	na	na	0.09	na	2.34
2001–02	2.06	0.23	0.01	na	na	0.09	na	2.39
2002–03	2.14	0.23	0.01	na	na	0.09	na	2.47
2003–04	2.25	0.24	0.01	na	na	0.09	na	2.58
2004–05	2.20	0.24	0.01	na	na	0.09	na	2.54
2005–06	2.17	0.24	0.01	na	na	0.09	na	2.51
2006–07	2.19	0.25	0.01	na	na	0.09	na	2.55
2007–08	2.19	0.27	0.01	na	na	0.08	na	2.56
2008–09	2.16	0.28	0.02	na	na	0.09	na	2.54
2009–10	2.14	0.28	0.02	na	na	0.09	na	2.52
2010–11	2.12	0.29	0.02	na	na	0.09	na	2.53
2011–12	2.12	0.31	0.02	na	na	0.09	na	2.53

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3g** Total passenger kilometres travelled by capital city—Darwin

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	0.33	0.09	0.01	na	na	0.01	na	0.44
1977–78	0.35	0.10	0.01	na	na	0.01	na	0.46
1978–79	0.37	0.10	0.01	na	na	0.01	na	0.49
1979–80	0.38	0.10	0.01	na	na	0.02	na	0.52
1980–81	0.41	0.11	0.01	na	na	0.02	na	0.55
1981–82	0.45	0.11	0.01	na	na	0.02	na	0.60
1982–83	0.47	0.10	0.02	na	na	0.03	na	0.61
1983–84	0.51	0.11	0.02	na	na	0.03	na	0.66
1984–85	0.55	0.11	0.02	na	na	0.03	na	0.71
1985–86	0.61	0.12	0.01	na	na	0.03	na	0.77
1986–87	0.63	0.12	0.01	na	na	0.03	na	0.80
1987–88	0.65	0.12	0.01	na	na	0.04	na	0.82
1988–89	0.66	0.12	0.01	na	na	0.04	na	0.84
1989–90	0.68	0.12	0.01	na	na	0.05	na	0.86
1990–91	0.69	0.12	0.01	na	na	0.05	na	0.86
1991–92	0.70	0.12	0.01	na	na	0.05	na	0.88
1992–93	0.72	0.12	0.01	na	na	0.05	na	0.90
1993–94	0.74	0.13	0.01	na	na	0.05	na	0.93
1994–95	0.79	0.14	0.01	na	na	0.05	na	0.99
1995–96	0.83	0.14	0.01	na	na	0.06	na	1.04
1996–97	0.84	0.15	0.01	na	na	0.06	na	1.06
1997–98	0.86	0.16	0.01	na	na	0.06	na	1.08
1998–99	0.87	0.16	0.01	na	na	0.06	na	1.10
1999–00	0.88	0.16	0.01	na	na	0.06	na	1.11
2000–01	0.85	0.16	0.01	na	na	0.06	na	1.08
2001–02	0.86	0.16	0.01	na	na	0.06	na	1.09
2002–03	0.87	0.17	0.01	na	na	0.06	na	1.10
2003–04	0.89	0.17	0.01	na	na	0.06	na	1.14
2004–05	0.88	0.17	0.01	na	na	0.06	na	1.13
2005–06	0.87	0.18	0.01	na	na	0.06	na	1.13
2006–07	0.90	0.19	0.01	na	na	0.06	na	1.16
2007–08	0.93	0.20	0.01	na	na	0.06	na	1.21
2008–09	0.95	0.21	0.01	na	na	0.06	na	1.24
2009–10	0.94	0.21	0.02	na	na	0.07	na	1.24
2010–11	0.93	0.22	0.02	na	na	0.07	na	1.24
2011–12	0.92	0.23	0.02	na	na	0.07	na	1.23

na: not applicable.

Source: BTRE (2007) and BITRE estimates.

**Table T 3.3h** Total passenger kilometres travelled by capital city—Canberra

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	1.99	0.16	0.02	na	na	0.09	na	2.27
1977–78	2.08	0.18	0.02	na	na	0.09	na	2.37
1978–79	2.15	0.18	0.02	na	na	0.11	na	2.46
1979–80	2.17	0.18	0.03	na	na	0.12	na	2.50
1980–81	2.20	0.18	0.03	na	na	0.12	na	2.54
1981–82	2.34	0.19	0.03	na	na	0.12	na	2.68
1982–83	2.37	0.19	0.03	na	na	0.14	na	2.73
1983–84	2.49	0.20	0.04	na	na	0.16	na	2.89
1984–85	2.62	0.21	0.04	na	na	0.17	na	3.03
1985–86	2.74	0.22	0.04	na	na	0.16	na	3.16
1986–87	2.82	0.23	0.03	na	na	0.17	na	3.26
1987–88	2.99	0.24	0.03	na	na	0.18	na	3.44
1988–89	3.16	0.25	0.04	na	na	0.18	na	3.62
1989–90	3.29	0.25	0.03	na	na	0.18	na	3.76
1990–91	3.34	0.25	0.03	na	na	0.18	na	3.81
1991–92	3.45	0.25	0.03	na	na	0.18	na	3.91
1992–93	3.59	0.26	0.03	na	na	0.18	na	4.06
1993–94	3.70	0.26	0.03	na	na	0.18	na	4.16
1994–95	3.79	0.28	0.03	na	na	0.19	na	4.28
1995–96	3.82	0.29	0.03	na	na	0.19	na	4.33
1996–97	3.83	0.28	0.02	na	na	0.20	na	4.34
1997–98	3.84	0.29	0.02	na	na	0.20	na	4.36
1998–99	3.93	0.29	0.02	na	na	0.19	na	4.44
1999–00	4.02	0.30	0.02	na	na	0.19	na	4.53
2000–01	3.95	0.30	0.02	na	na	0.19	na	4.45
2001–02	4.02	0.31	0.03	na	na	0.19	na	4.55
2002–03	4.16	0.32	0.03	na	na	0.20	na	4.70
2003–04	4.34	0.33	0.03	na	na	0.20	na	4.89
2004–05	4.34	0.33	0.03	na	na	0.20	na	4.90
2005–06	4.28	0.33	0.03	na	na	0.21	na	4.85
2006–07	4.33	0.34	0.03	na	na	0.20	na	4.91
2007–08	4.35	0.36	0.04	na	na	0.20	na	4.95
2008–09	4.35	0.37	0.04	na	na	0.21	na	4.97
2009–10	4.38	0.38	0.04	na	na	0.22	na	5.02
2010–11	4.43	0.39	0.05	na	na	0.22	na	5.09
2011–12	4.50	0.41	0.05	na	na	0.22	na	5.18

na: not applicable.

Source: BTRE (2007) and BITRE estimates.



**Table T 3.3i** Total passenger kilometres travelled by capital city—total metropolitan

Financial year	Passenger cars	Commercial vehicles	Motor cycles	Rail	Light rail	Bus	Ferry	Total
<i>billion passenger kilometres</i>								
1976–77	73.73	6.70	0.82	5.68	0.54	3.78	0.13	91.38
1977–78	76.58	7.11	0.83	5.53	0.54	3.86	0.12	94.57
1978–79	78.97	7.28	0.83	5.41	0.54	3.86	0.12	97.01
1979–80	79.45	7.16	0.88	5.77	0.54	3.97	0.13	97.91
1980–81	80.77	7.20	0.92	5.85	0.55	4.06	0.13	99.48
1981–82	85.07	7.35	1.00	5.88	0.56	4.06	0.15	104.06
1982–83	85.48	7.19	1.01	5.69	0.55	4.10	0.15	104.18
1983–84	89.53	7.72	1.04	5.70	0.56	4.11	0.15	108.82
1984–85	93.03	8.07	1.06	5.71	0.62	4.19	0.16	112.84
1985–86	96.53	8.38	0.99	6.16	0.64	4.31	0.16	117.17
1986–87	98.93	8.59	0.96	6.36	0.65	4.45	0.17	120.12
1987–88	103.80	8.99	0.94	6.60	0.67	4.62	0.15	125.77
1988–89	108.61	9.35	1.00	6.84	0.70	4.75	0.17	131.41
1989–90	111.50	9.37	0.92	6.88	0.56	4.79	0.18	134.20
1990–91	111.40	9.02	0.84	6.93	0.62	4.87	0.15	133.84
1991–92	113.50	9.11	0.84	6.94	0.62	4.84	0.13	135.98
1992–93	116.86	9.35	0.83	6.88	0.54	4.74	0.11	139.31
1993–94	119.80	9.75	0.81	7.11	0.54	4.81	0.12	142.93
1994–95	123.70	10.41	0.79	7.50	0.54	5.00	0.13	148.06
1995–96	125.43	10.75	0.75	7.73	0.55	5.07	0.13	150.40
1996–97	126.16	10.81	0.74	7.93	0.54	5.13	0.14	151.45
1997–98	128.15	11.19	0.71	7.90	0.54	5.20	0.13	153.83
1998–99	131.42	11.35	0.68	8.06	0.56	5.15	0.13	157.36
1999–00	134.57	11.49	0.69	8.39	0.60	5.22	0.13	161.09
2000–01	133.95	11.63	0.71	8.94	0.61	5.28	0.15	161.27
2001–02	136.72	12.00	0.75	8.71	0.62	5.25	0.14	164.18
2002–03	139.75	12.30	0.74	8.79	0.63	5.31	0.14	167.67
2003–04	145.90	12.65	0.78	8.96	0.63	5.35	0.14	174.42
2004–05	146.57	12.71	0.84	9.07	0.64	5.48	0.15	175.45
2005–06	144.41	12.95	0.91	9.57	0.66	5.63	0.15	174.27
2006–07	145.76	13.45	1.01	10.05	0.67	5.78	0.15	176.87
2007–08	146.68	14.18	1.10	10.90	0.69	5.96	0.15	179.65
2008–09	146.14	14.62	1.19	11.42	0.75	6.23	0.15	180.51
2009–10	147.20	15.39	1.27	11.32	0.74	6.34	0.16	182.43
2010–11	149.18	16.01	1.33	11.44	0.78	6.51	0.15	185.39
2011–12	150.38	16.62	1.39	11.55	0.81	6.72	0.16	187.63

Source: BTRE (2007) and BITRE estimates.

**Table T 3.4a** Method of travel to work by state/territory—New South Wales

Census year	Public transport	Taxi	One method only				Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter			
<i>Number of employed persons</i>									
1981	256 812	11 767	1 105 606	188 679	na	32 294	15 682	122 544	na
1986	225 068	10 632	1 164 920	171 024	na	26 294	18 851	118 626	na
1991	211 372	8 407	1 197 033	168 743	na	17 269	16 970	123 248	86 035
1996	225 515	9 496	1 396 204	176 686	na	16 423	17 305	114 538	97 989
2001	249 096	8 223	1 487 981	168 862	54 094	14 157	17 730	114 927	112 728
2006	265 113	8 219	1 639 528	166 871	45 953	16 495	19 274	127 446	93 564
2011	317 806	7 730	1 807 359	157 359	38 584	19 629	23 358	128 340	113 376

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4b** Method of travel to work by state/territory—Victoria

Census year	Public transport	Taxi	One method only				Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter			
<i>Number of employed persons</i>									
1981	157 446	6 894	890 359	151 666	na	13 757	23 737	83 208	na
1986	134 654	5 873	986 891	132 471	na	12 132	24 022	79 580	na
1991	106 427	4 022	1 008 838	114 370	na	8 704	18 334	74 133	41 684
1996	103 778	4 989	1 157 773	114 478	na	8 414	17 190	63 668	46 918
2001	119 408	4 520	1 276 600	109 752	25 682	8 376	18 910	64 732	57 770
2006	143 412	4 555	1 394 017	111 030	22 806	10 838	25 180	80 539	63 067
2011	190 018	4 887	1 554 490	116 099	20 122	10 645	30 913	83 525	87 112

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4c** Method of travel to work by state/territory—Queensland

Census year	Public transport	Taxi	One method only				Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter			
<i>Number of employed persons</i>									
1981	53 762	5 213	462 167	93 082	na	23 462	15 586	56 752	na
1986	59 836	5 131	553 352	90 210	na	20 495	19 469	62 369	na
1991	55 908	3 787	624 144	93 935	na	16 819	22 964	62 908	16 016
1996	62 621	5 255	809 145	111 524	na	16 608	20 454	62 025	18 470
2001	68 732	4 020	906 073	112 409	30 538	15 601	20 252	60 529	24 510
2006	91 302	4 531	1 090 011	123 254	29 283	20 071	20 580	72 981	27 915
2011	113 051	4 335	1 248 540	125 270	25 604	19 101	21 576	75 561	39 650

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4d** Method of travel to work by state/territory—South Australia

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	49 234	1 740	289 771	48 814	na	10 922	10 700	25 988	na	
1986	41 952	1 954	322 855	44 187	na	9 376	10 415	28 744	na	
1991	33 062	1 453	322 141	41 368	na	5 600	8 662	26 514	7 033	
1996	27 567	1 840	363 074	39 302	na	3 740	5 962	21 015	6 539	
2001	28 282	1 475	392 511	37 455	7 298	2 904	5 889	21 553	7 837	
2006	36 140	1 458	429 822	38 720	6 609	4 324	7 942	24 862	8 298	
2011	39 880	1 549	471 362	39 168	5 881	4 059	7 503	23 623	9 931	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4e** Method of travel to work by state/territory—Western Australia

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	37 945	2 060	312 381	51 664	na	7 083	6 560	26 188	na	
1986	36 629	2 191	324 791	48 071	na	6 925	7 830	27 995	na	
1991	33 026	1 206	361 689	46 036	na	6 022	9 102	26 828	7 113	
1996	33 163	1 865	453 690	55 553	na	4 817	7 152	28 440	13 566	
2001	34 294	1 521	498 685	51 929	11 019	4 247	8 279	28 307	17 701	
2006	47 087	1 972	570 271	58 748	10 910	5 176	9 294	31 757	19 833	
2011	65 538	2 218	662 949	63 485	10 485	6 508	11 758	35 995	37 158	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4f** Method of travel to work by state/territory—Tasmania

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	11 166	645	94 613	18 579	na	1 207	1 043	11 541	na	
1986	8 622	693	101 797	17 505	na	1 108	1 244	12 265	na	
1991	5 924	546	97 245	14 746	na	779	1 012	10 712	858	
1996	5 342	551	109 633	14 441	na	838	964	9 466	811	
2001	4 290	416	110 241	12 645	2 740	825	1 145	10 070	779	
2006	5 156	495	125 485	14 506	2 572	1 089	1 478	11 693	805	
2011	5 672	560	137 140	14 799	2 040	1 144	1 372	10 850	1 134	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4g** Method of travel to work by state/territory—Northern Territory

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	2 907	396	24 170	5 847	na	1 387	1 641	6 738	na	
1986	2 429	537	32 209	7 021	na	1 391	2 185	6 934	na	
1991	2 389	317	31 781	6 118	na	1 146	2 908	6 938	218	
1996	2 887	477	40 865	7 445	na	1 040	2 636	9 369	381	
2001	2 711	411	44 343	7 261	1 050	918	2 846	10 561	483	
2006	3 082	328	46 702	7 114	795	978	2 579	10 347	369	
2011	3 306	327	55 435	7 750	727	1 419	2 742	10 863	518	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4h** Method of travel to work by state/territory—Australian Capital Territory

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	8 642	405	61 213	10 194	na	1 417	1 902	3 802	na	
1986	9 614	540	77 313	11 524	na	1 310	2 185	4 084	na	
1991	9 680	325	78 981	12 363	na	906	2 043	4 726	1 440	
1996	8 638	540	89 613	12 713	na	986	2 760	5 373	1 728	
2001	7 506	561	99 585	12 845	1 695	1 069	3 115	5 741	1 595	
2006	10 374	411	107 608	13 011	1 471	1 766	3 757	7 399	1 362	
2011	11 208	463	122 109	13 626	1 284	1 800	4 671	8 164	1 899	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4i** Method of travel to work by state/territory—total Australia

Census year	Public transport	Taxi	One method only					Bicycle	Walked only	Public transport and other method 5
			Car, as driver	Car, as passenger	Truck	Motor bike/motor scooter				
<i>Number of employed persons</i>										
1981	577 914	29 120	3 240 280	568 525	na	91 529	76 851	336 761	na	
1986	518 804	27 551	3 564 128	522 013	na	79 031	86 201	340 597	na	
1991	457 788	20 063	3 721 852	497 679	na	57 245	81 995	336 007	160 397	
1996	469 511	25 013	4 419 997	532 142	na	52 866	74 423	313 894	186 402	
2001	514 320	21 147	4 816 019	513 158	134 116	48 097	78 166	316 420	223 403	
2006	601 666	21 969	5 403 443	533 252	120 399	60 741	90 085	367 020	215 213	
2011	746 479	22 069	6 059 384	537 556	104 727	64 305	103 893	376 921	290 778	

5 See end notes.

na: not available.

Source: ABS (2012e).

**Table T 3.4j** Method of travel to work by state/territory—total employed persons by state/territory

Census month and year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total Australia
	<i>Number of employed persons</i>								
June 1981	2 258 262	1 724 384	962 389	560 940	574 751	174 612	56 726	101 881	6 413 945
June 1986	2 378 161	1 856 220	1 118 679	606 673	660 945	182 977	74 271	129 752	7 007 678
August 1991	2 589 325	1 964 012	1 299 704	626 479	732 879	193 928	78 987	143 949	7 629 262
August 1996	2 781 185	2 079 526	1 516 882	650 952	845 833	198 870	85 743	151 334	8 310 326
August 2001	3 028 168	2 259 769	1 695 780	675 754	924 545	192 451	97 020	170 374	9 043 859
August 2006	3 270 894	2 539 481	2 079 410	759 905	1 073 168	221 540	103 448	194 735	10 242 582
August 2011	3 549 644	2 837 349	2 313 564	810 410	1 236 129	233 321	120 145	204 958	11 305 520

Source: ABS (2012i).



# CHAPTER 4

## Road

Figure T 4 Map of national road network



Table T 4.1 Intercapital road distances

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Darwin	Canberra
	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Sydney	-	863	934	1 401	4 034	4 000	282
Melbourne	-	-	1 665	723	3 420	3 757	652
Brisbane	-	-	-	2 049	4 681	3 432	1 194
Adelaide	-	-	-	-	2 698	3 035	1 189
Perth	-	-	-	-	-	3 989	3 822
Darwin	-	-	-	-	-	-	4 159

Source: Whereis.com.

**Table T 4.2** Total vehicle kilometres travelled, by vehicle type

Financial year	Passenger cars	Motor cycles	Buses	Light commercial vehicles	Rigid trucks	Articulated trucks	Total
<i>billion vehicle kilometres travelled</i>							
1970–71	60.73	1.01	0.66	9.84	4.70	1.66	78.61
1971–72	64.80	1.10	0.65	10.42	4.69	1.76	83.43
1972–73	67.33	1.20	0.68	11.01	4.71	1.80	86.73
1973–74	71.99	1.30	0.69	12.02	4.87	1.90	92.77
1974–75	75.21	1.40	0.69	12.96	5.03	1.91	97.20
1975–76	78.40	1.64	0.69	13.12	5.25	2.03	101.13
1976–77	82.09	1.68	0.70	14.83	5.15	2.20	106.65
1977–78	85.03	1.73	0.72	16.11	5.10	2.22	110.91
1978–79	87.57	1.77	0.73	16.67	5.13	2.60	114.47
1979–80	88.06	1.90	0.77	16.79	5.65	2.80	115.97
1980–81	89.57	2.00	0.82	17.34	6.13	2.88	118.74
1981–82	94.14	2.18	0.86	17.86	6.97	3.06	125.07
1982–83	94.64	2.20	0.95	17.89	6.22	3.03	124.94
1983–84	99.14	2.25	1.05	19.32	6.17	3.41	131.33
1984–85	103.07	2.28	1.14	20.52	6.34	3.59	136.95
1985–86	106.48	2.10	1.22	21.23	6.22	3.67	140.92
1986–87	109.01	2.00	1.31	21.72	6.28	3.69	144.01
1987–88	114.57	1.92	1.39	22.77	6.69	3.95	151.30
1988–89	120.31	2.00	1.47	23.73	6.73	4.05	158.28
1989–90	124.01	1.80	1.56	23.90	6.84	4.13	162.24
1990–91	124.47	1.62	1.52	23.30	6.12	4.07	161.10
1991–92	127.19	1.61	1.49	24.17	5.91	4.10	164.46
1992–93	131.34	1.62	1.49	24.95	5.82	4.39	169.61
1993–94	134.91	1.59	1.55	25.76	6.02	4.53	174.35
1994–95	139.38	1.57	1.60	27.27	6.32	4.82	180.95
1995–96	141.59	1.52	1.64	28.28	6.65	5.02	184.71
1996–97	142.87	1.52	1.65	28.65	7.15	5.21	187.06
1997–98	144.51	1.46	1.69	29.94	7.24	5.40	190.24
1998–99	148.08	1.40	1.71	30.69	7.17	5.55	194.61
1999–00	151.17	1.42	1.76	31.33	7.29	5.70	198.67
2000–01	149.75	1.46	1.80	31.70	7.17	5.62	197.51
2001–02	153.63	1.55	1.82	32.94	7.44	5.81	203.18
2002–03	157.71	1.52	1.86	34.02	7.70	5.97	208.78
2003–04	165.35	1.60	1.88	35.15	7.85	6.16	217.99
2004–05	166.02	1.72	1.89	35.38	8.10	6.32	219.44
2005–06	162.91	1.88	1.95	36.28	8.39	6.46	217.87
2006–07	164.94	2.08	1.98	37.64	8.62	6.72	221.97
2007–08	165.73	2.28	2.02	39.26	8.86	6.90	225.05
2008–09	165.08	2.44	2.08	40.19	8.75	6.82	225.37
2009–10	166.23	2.63	2.13	41.93	8.94	6.92	228.77
2010–11	168.09	2.74	2.17	43.34	9.26	7.21	232.81
2011–12	169.58	2.87	2.22	44.81	9.55	7.55	236.58

Source: BTRE (2007) and BITRE estimates.



**Table T 4.3** Total vehicle kilometres travelled by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>billion vehicle kilometres travelled</i>								
1970–71	27.76	21.45	10.77	7.42	7.49	2.30	0.51	0.92	78.61
1971–72	29.31	22.78	11.52	7.76	8.04	2.42	0.57	1.03	83.43
1972–73	30.24	23.65	12.17	8.00	8.43	2.50	0.61	1.13	86.73
1973–74	31.99	25.24	13.23	8.61	9.10	2.65	0.68	1.26	92.77
1974–75	33.18	26.38	14.11	9.09	9.65	2.74	0.67	1.37	97.20
1975–76	34.00	27.48	14.95	9.49	10.17	2.82	0.75	1.47	101.13
1976–77	35.60	28.96	15.84	9.98	10.91	2.95	0.84	1.57	106.65
1977–78	36.77	30.05	16.70	10.29	11.49	3.07	0.89	1.64	110.91
1978–79	38.12	30.76	17.56	10.40	11.84	3.15	0.94	1.70	114.47
1979–80	38.83	30.83	18.18	10.28	11.97	3.16	0.99	1.73	115.97
1980–81	39.90	31.30	19.12	10.27	12.16	3.19	1.04	1.76	118.74
1981–82	41.72	32.99	20.60	10.68	12.79	3.32	1.12	1.86	125.07
1982–83	41.18	33.15	20.85	10.69	12.73	3.33	1.12	1.89	124.94
1983–84	43.23	34.73	21.91	11.28	13.45	3.52	1.21	2.00	131.33
1984–85	45.11	36.22	22.79	11.80	13.94	3.69	1.28	2.11	136.95
1985–86	46.03	37.47	23.59	12.14	14.35	3.79	1.34	2.21	140.92
1986–87	46.70	38.63	24.20	12.36	14.66	3.82	1.37	2.28	144.01
1987–88	48.65	40.92	25.65	12.87	15.43	3.97	1.40	2.41	151.30
1988–89	50.42	42.99	27.29	13.32	16.16	4.12	1.42	2.55	158.28
1989–90	51.48	44.02	28.22	13.51	16.63	4.28	1.45	2.65	162.24
1990–91	50.93	43.54	28.49	13.30	16.48	4.26	1.43	2.67	161.10
1991–92	51.80	44.20	29.73	13.43	16.74	4.34	1.46	2.76	164.46
1992–93	53.38	45.13	31.30	13.69	17.25	4.49	1.50	2.87	169.61
1993–94	54.82	46.06	32.55	13.77	18.07	4.60	1.54	2.95	174.35
1994–95	56.71	47.38	34.31	13.99	19.17	4.73	1.63	3.04	180.95
1995–96	57.43	48.45	35.52	14.06	19.69	4.79	1.70	3.08	184.71
1996–97	57.76	49.38	36.10	14.19	20.00	4.81	1.73	3.09	187.06
1997–98	58.85	49.88	37.03	14.43	20.41	4.77	1.76	3.11	190.24
1998–99	60.24	51.06	37.86	14.84	20.89	4.76	1.78	3.17	194.61
1999–00	61.72	51.70	38.99	15.26	21.19	4.77	1.80	3.23	198.67
2000–01	61.50	51.06	39.15	15.20	21.00	4.67	1.76	3.18	197.51
2001–02	62.85	52.86	40.64	15.50	21.52	4.79	1.79	3.26	203.18
2002–03	64.01	54.53	41.97	16.01	22.10	4.97	1.82	3.36	208.78
2003–04	66.72	56.67	44.61	16.26	23.14	5.20	1.87	3.51	217.99
2004–05	67.15	56.82	45.31	16.07	23.54	5.16	1.87	3.52	219.44
2005–06	66.45	56.10	45.57	15.86	23.42	5.12	1.86	3.49	217.87
2006–07	67.32	56.74	47.02	16.11	24.06	5.25	1.93	3.55	221.97
2007–08	67.94	57.67	48.22	15.92	24.45	5.28	1.99	3.58	225.05
2008–09	68.02	57.37	48.09	15.90	25.11	5.26	2.04	3.59	225.37
2009–10	69.05	58.66	48.82	16.12	25.20	5.24	2.04	3.63	228.77
2010–11	70.57	60.04	49.29	16.17	25.74	5.27	2.05	3.68	232.81
2011–12	71.41	61.27	50.20	16.21	26.38	5.30	2.05	3.76	236.58

Source: BTRE (2007) and BITRE estimates.

**Table T 4.4** Total vehicle kilometres travelled by capital city

Financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Total
	<i>billion vehicle kilometres travelled</i>								
1970–71	14.79	12.31	4.34	4.57	4.52	0.72	0.21	0.90	42.36
1971–72	15.64	13.08	4.68	4.81	4.87	0.76	0.23	1.01	45.09
1972–73	16.15	13.60	4.98	5.00	5.13	0.78	0.26	1.11	47.02
1973–74	17.10	14.51	5.43	5.43	5.58	0.84	0.29	1.25	50.43
1974–75	17.76	15.36	5.76	5.76	5.95	0.89	0.25	1.36	53.10
1975–76	18.23	16.21	6.14	6.04	6.28	0.94	0.31	1.46	55.61
1976–77	19.07	17.23	6.51	6.35	6.72	1.00	0.34	1.56	58.78
1977–78	19.68	18.06	6.88	6.53	7.07	1.08	0.36	1.63	61.29
1978–79	20.36	18.63	7.23	6.57	7.28	1.12	0.38	1.69	63.25
1979–80	20.69	18.78	7.41	6.44	7.37	1.14	0.40	1.71	63.95
1980–81	21.15	19.18	7.72	6.39	7.50	1.17	0.43	1.75	65.27
1981–82	22.14	20.33	8.29	6.63	7.91	1.22	0.47	1.85	68.83
1982–83	21.94	20.40	8.44	6.66	7.94	1.23	0.47	1.88	68.97
1983–84	23.09	21.28	8.91	7.03	8.42	1.30	0.51	1.98	72.54
1984–85	24.19	22.12	9.31	7.37	8.74	1.37	0.55	2.09	75.75
1985–86	24.85	23.10	9.82	7.59	9.03	1.43	0.59	2.19	78.60
1986–87	25.39	23.94	10.12	7.74	9.24	1.44	0.61	2.26	80.76
1987–88	26.54	25.41	10.76	8.07	9.75	1.49	0.63	2.40	85.05
1988–89	27.50	26.73	11.43	8.38	10.27	1.54	0.64	2.53	89.03
1989–90	28.05	27.38	11.77	8.52	10.57	1.60	0.65	2.64	91.18
1990–91	27.76	27.11	11.88	8.41	10.44	1.59	0.65	2.66	90.52
1991–92	28.25	27.59	12.38	8.51	10.63	1.63	0.67	2.75	92.39
1992–93	29.10	28.23	12.99	8.67	11.03	1.70	0.69	2.86	95.27
1993–94	29.89	28.88	13.50	8.71	11.66	1.75	0.71	2.94	98.05
1994–95	30.95	29.81	14.23	8.85	12.45	1.79	0.76	3.03	101.88
1995–96	31.45	30.34	14.77	8.87	12.83	1.82	0.80	3.08	103.95
1996–97	31.69	30.68	15.05	8.94	13.03	1.82	0.82	3.09	105.11
1997–98	32.30	31.31	15.52	9.08	13.25	1.79	0.84	3.11	107.19
1998–99	33.12	32.03	15.83	9.34	13.55	1.78	0.85	3.17	109.69
1999–00	33.97	32.70	16.30	9.61	13.75	1.79	0.86	3.23	112.21
2000–01	33.89	32.80	16.38	9.57	13.62	1.75	0.84	3.18	112.03
2001–02	34.65	33.53	16.99	9.74	13.97	1.79	0.85	3.25	114.77
2002–03	35.30	34.21	17.54	10.05	14.37	1.85	0.87	3.36	117.54
2003–04	36.88	35.35	18.65	10.18	15.08	1.94	0.90	3.50	122.48
2004–05	37.12	35.65	18.88	10.03	15.34	1.92	0.89	3.51	123.35
2005–06	36.64	35.50	18.94	9.90	15.22	1.90	0.90	3.49	122.49
2006–07	37.04	35.79	19.44	10.01	15.64	1.94	0.93	3.54	124.33
2007–08	37.44	36.41	19.87	9.84	15.83	1.95	0.97	3.57	125.88
2008–09	37.46	36.16	19.74	9.81	16.27	1.94	0.99	3.59	125.95
2009–10	37.98	36.90	20.00	9.94	16.30	1.93	0.99	3.62	127.67
2010–11	38.81	37.82	20.25	9.94	16.61	1.94	0.99	3.68	130.03
2011–12	39.22	38.55	20.57	9.94	17.01	1.95	0.99	3.76	131.97

Source: BTRE (2007) and BITRE estimates.

**Table T 4.5** Total road freight, by vehicle type

Financial year	Light commercial vehicles	Rigid trucks	Articulated trucks	Total
1970–71	0.7	10.4	14.6	25.6
1971–72	0.8	10.3	15.9	27.0
1972–73	0.8	10.4	16.7	27.9
1973–74	0.9	10.7	18.9	30.5
1974–75	1.0	10.9	19.5	31.4
1975–76	1.0	11.4	21.4	33.9
1976–77	1.2	11.8	23.9	36.8
1977–78	1.2	12.4	24.4	38.0
1978–79	1.3	13.3	29.1	43.8
1979–80	1.4	14.2	31.7	47.2
1980–81	1.5	14.8	35.1	51.4
1981–82	1.5	15.9	37.6	55.1
1982–83	1.5	15.2	38.3	55.1
1983–84	1.7	16.2	44.4	62.3
1984–85	1.8	17.7	48.3	67.9
1985–86	2.0	18.1	51.5	71.7
1986–87	2.2	18.9	52.5	73.7
1987–88	2.5	20.5	57.8	80.7
1988–89	2.6	20.9	60.7	84.3
1989–90	2.7	22.0	63.2	87.9
1990–91	2.7	20.2	62.5	85.3
1991–92	2.7	19.5	63.0	85.2
1992–93	2.8	19.2	68.0	90.0
1993–94	2.9	19.8	71.4	94.1
1994–95	3.1	20.9	77.4	101.4
1995–96	3.2	22.1	82.1	107.4
1996–97	3.2	23.8	86.4	113.4
1997–98	3.4	24.3	91.7	119.4
1998–99	3.5	24.3	97.2	125.0
1999–00	3.6	25.2	103.9	132.6
2000–01	3.5	25.1	106.4	135.0
2001–02	3.7	26.2	112.8	142.7
2002–03	3.9	27.3	117.9	149.2
2003–04	4.1	28.1	124.3	156.5
2004–05	4.1	29.2	129.4	162.7
2005–06	4.2	30.5	134.3	169.1
2006–07	4.2	31.6	141.8	177.5
2007–08	4.2	32.6	147.6	184.3
2008–09	4.2	32.4	146.9	183.4
2009–10	4.3	33.2	149.2	186.8
2010–11	4.5	34.6	155.9	194.9
2011–12	4.6	35.8	163.5	204.0

Source: BTRE (2006a) and BITRE estimates.

**Table T 4.6** Private vehicle ownership and operating cost indices<sup>a</sup>

June reference month	Australia motor vehicle producer price	Private motoring	Motor vehicle retail price	Automotive fuel	Motor vehicle repair and servicing	Motor vehicle parts and accessories	Other motoring charges	Urban transport fares
				<i>index</i>				
1973		11.6	22.1	6.8				8.1
1974		13.1	24.0	8.0				8.4
1975		16.0	28.2	9.5				9.5
1976		18.5	34.5	10.3				11.1
1977		20.3	38.2	10.7				10.8
1978		21.8	41.7	11.8				11.7
1979		24.4	43.0	16.2				12.3
1980		27.6	45.6	21.6				14.3
1981		30.1	48.4	25.1	29.3	43.4	19.4	16.6
1982		32.6	53.2	24.8	33.6	44.3	23.3	19.1
1983	43.0	35.9	58.5	27.7	36.5	47.3	24.7	21.2
1984	44.8	39.1	61.2	32.1	38.8	51.7	26.6	24.1
1985	47.0	42.5	66.6	35.9	41.0	54.4	28.6	25.4
1986	53.9	44.3	75.5	32.3	45.3	56.6	30.0	27.2
1987	61.8	50.7	89.1	36.3	50.1	60.3	33.1	29.9
1988	67.1	53.4	97.9	35.5	53.2	65.9	34.2	32.3
1989	70.6	56.1	103.8	37.3	55.6	68.6	35.4	35.3
1990	82.5	60.5	107.7	42.2	60.0	71.2	36.3	38.5
1991	85.2	62.1	108.7	42.9	62.9	71.4	38.8	44.1
1992	88.1	63.9	111.7	44.8	63.6	71.1	41.9	46.6
1993	92.8	65.7	118.8	45.3	64.3	71.0	45.7	49.3
1994	96.2	67.5	122.1	46.0	65.3	72.6	46.9	50.9
1995	99.2	69.6	128.1	46.8	66.1	74.2	48.1	52.4
1996	98.4	72.6	130.0	49.1	68.6	73.5	50.0	54.4
1997	97.0	72.2	120.6	49.4	69.1	74.4	52.1	57.8
1998	98.5	71.5	116.5	47.8	69.2	74.0	53.9	58.6
1999	96.6	71.4	112.2	47.2	71.3	74.9	56.7	59.8
2000	100.1	76.8	111.7	57.5	69.4	74.1	59.1	62.7
2001	102.3	80.9	112.8	63.9	74.3	75.4	61.3	69.5
2002	106.5	80.6	113.9	60.7	76.5	77.7	63.6	71.7
2003	108.0	80.6	112.2	59.9	78.9	79.0	65.8	73.1
2004	105.5	83.2	108.9	66.9	81.1	79.2	69.9	76.8
2005	103.8	86.1	106.0	73.9	84.5	80.9	72.0	78.1
2006	104.2	92.9	105.0	92.2	86.3	83.8	73.5	80.6
2007	104.7	92.9	106.5	88.3	88.6	86.8	77.1	83.6
2008	106.1	99.4	105.2	104.5	91.6	91.0	81.1	87.7
2009	105.0	92.8	104.2	83.1	95.4	99.1	84.3	92.2
2010	103.8	95.8	103.4	89.4	97.5	99.5	90.8	94.5
2011	99.3	99.2	101.9	99.4	95.8	99.5	96.5	97.2
2012	99.9	101.2	100.3	101.9	100.7	100.0	102.7	102.3
2013	98.9	100.4	96.9	98.5	105.3	100.4	107.4	106.8

<sup>a</sup> Base of each index: 2011–12 = 100.0.

Note: Data are not readily available for missing years.

Source: ABS (2012–13f) and ABS (2012–13k).

**Table T 4.7** Stock of registered motor vehicles by vehicle type

	Passenger cars	Motor cycles	LCVs	Rigid trucks	Articulated trucks	Other trucks	Buses	All vehicles
	<i>thousands</i>							
1971	3 990.9	152.6	532.7	365.8	32.0	10.0	22.8	5 106.8
1972								
1973								
1974								
1975								
1976	5 102.2	293.4	758.2	372.2	39.0	25.1	31.4	6 621.5
1977								
1978								
1979	5 669.6	288.3	879.2	419.9	43.7	36.3	37.8	7 374.7
1980								
1981								
1982	6 233.4	366.9	1 003.0	479.0	47.2	42.0	46.2	8 217.7
1983								
1984								
1985	6 734.2	361.6	1 140.5	543.7	50.2	49.4	80.1	8 959.7
1986								
1987								
1988	7 158.8	304.0	1 183.5	576.3	48.9	53.4	93.2	9 418.0
1989								
1990								
1991	7 860.7	284.1	1 479.2	333.2	51.7	47.0	42.3	10 098.2
1992								
1993	8 279.4	288.8	1 453.8	336.5	52.5	46.6	46.6	10 504.2
1994								
1995	8 628.8	296.6	1 527.2	337.4	58.3	47.0	52.2	10 947.5
1996	8 989.1	303.9	1 601.6	341.0	58.4	48.3	58.8	11 401.1
1997	9 206.2	313.1	1 632.2	342.4	59.3	50.0	61.1	11 664.4
1998	9 526.7	328.8	1 686.4	347.2	62.3	51.3	64.1	12 066.9
1999	9 686.2	333.8	1 721.2	346.8	63.3	51.3	65.9	12 268.5
2000								
2001	9 835.9	350.9	1 769.6	338.4	62.6	51.8	67.6	12 476.8
2002	10 101.4	371.0	1 820.0	341.5	63.9	54.0	70.2	12 822.0
2003	10 365.9	377.3	1 879.8	348.7	64.3	56.9	70.1	13 163.0
2004	10 629.4	396.3	1 952.5	357.6	66.3	59.6	71.3	13 533.1
2005	10 896.4	421.9	2 030.3	368.5	69.7	60.7	72.6	13 920.1
2006	11 188.9	463.1	2 114.3	383.5	71.7	61.8	75.4	14 358.7
2007	11 466.6	512.4	2 190.1	394.5	74.5	64.5	77.6	14 780.2
2008	11 803.5	567.6	2 288.2	410.9	79.1	66.6	80.6	15 296.5
2009	12 023.1	624.1	2 371.1	421.7	81.2	68.8	84.4	15 674.4
2010	12 269.3	660.1	2 460.6	431.3	82.4	71.0	86.4	16 061.1
2011	12 474.0	678.8	2 530.6	437.8	86.0	73.3	87.9	16 368.4
2012	12 714.2	709.3	2 617.8	446.4	88.0	75.3	90.6	16 741.6

Note: Data are not readily available for missing years.

Source: ABS (2012j).

**Table T 4.8** Stock of registered motor vehicles by state/territory

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>thousands</i>								
1982	2 708.1	2 127.2	1 440.0	744.0	783.4	244.3	60.9	109.7	8 217.7
1983									
1984									
1985	2 900.5	2 376.3	1 479.4	848.7	887.6	268.7	71.1	127.6	8 959.7
1986									
1987									
1988	2 993.6	2 556.0	1 567.2	869.1	947.0	284.3	60.7	140.2	9 418.0
1989									
1990									
1991	3 106.9	2 756.4	1 694.1	922.7	1 072.0	300.4	84.3	161.5	10 098.2
1992									
1993	3 172.4	2 864.7	1 847.2	932.8	1 114.5	311.9	84.2	176.5	10 504.2
1994									
1995	3 332.5	2 869.9	2 012.9	962.8	1 175.5	319.9	90.4	183.8	10 947.5
1996	3 448.9	3 050.2	2 082.0	984.5	1 225.0	325.5	96.2	188.8	11 401.1
1997	3 530.1	3 119.0	2 132.2	992.2	1 269.6	325.0	99.1	197.2	11 664.4
1998	3 682.6	3 177.4	2 228.8	1 031.1	1 327.2	322.7	102.2	194.8	12 066.9
1999	3 679.3	3 266.5	2 315.6	1 032.5	1 344.8	329.6	103.2	197.0	12 268.5
2000									
2001	3 745.5	3 317.7	2 354.4	1 050.6	1 371.3	331.1	102.8	203.4	12 476.8
2002	3 847.1	3 413.7	2 445.5	1 063.1	1 405.7	335.1	103.8	208.0	12 822.0
2003	3 944.9	3 494.3	2 552.1	1 077.2	1 438.4	338.5	104.3	213.4	13 163.0
2004	4 063.6	3 565.2	2 656.0	1 095.9	1 480.2	350.4	106.0	215.7	13 533.1
2005	4 170.4	3 649.6	2 767.3	1 111.7	1 529.6	362.1	109.8	219.6	13 920.1
2006	4 268.6	3 740.7	2 897.9	1 138.0	1 600.6	374.8	114.0	224.1	14 358.7
2007	4 361.2	3 818.1	3 033.4	1 157.0	1 676.5	381.2	118.2	234.6	14 780.2
2008	4 520.0	3 921.6	3 173.4	1 178.9	1 746.6	391.3	123.0	241.8	15 296.5
2009	4 567.4	4 010.3	3 283.2	1 208.9	1 828.3	400.5	128.8	247.0	15 674.4
2010	4 681.5	4 112.9	3 358.2	1 239.7	1 870.1	410.2	134.7	253.8	16 061.1
2011	4 778.4	4 198.4	3 401.9	1 261.9	1 912.7	419.0	137.1	258.9	16 368.4
2012	4 870.0	4 286.3	3 492.3	1 275.0	1 977.8	432.0	141.1	267.2	16 741.6

Source: ABS (2012).

**Table T 4.9** New motor vehicles sales, excluding motor cycles, by vehicle type

Financial year	Passenger cars	Sports utility vehicles	Other vehicles	Total vehicles excluding motor cycles
	<i>thousands</i>			
1994–95	487.3	45.6	112.1	645.0
1995–96	487.7	46.1	105.5	639.4
1996–97	503.3	58.7	108.2	670.2
1997–98	570.1	87.7	119.1	776.9
1998–99	575.7	101.8	128.3	805.8
1999–00	509.4	97.6	135.6	742.6
2000–01	571.0	114.8	122.9	808.7
2001–02	537.6	129.1	137.9	804.6
2002–03	560.2	144.0	156.4	860.5
2003–04	594.4	160.9	184.8	940.1
2004–05	604.0	182.0	195.8	981.8
2005–06	599.4	173.3	198.7	971.4
2006–07	624.1	180.4	199.4	1 003.9
2007–08	631.8	210.9	225.5	1 068.3
2008–09	542.8	176.1	205.9	924.7
2009–10	582.1	216.2	215.0	1 013.3
2010–11	566.3	230.6	203.7	1 000.6
2011–12	568.0	282.5	209.6	1 060.1

Source: ABS (2012).

**Table T 4.10** New motor vehicles sales excluding motor cycles, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>thousands</i>								
1994–95	237.6	150.8	116.9	41.7	64.1	13.8	7.3	12.7	645.0
1995–96	230.1	152.7	117.1	42.7	64.4	12.8	7.5	12.0	639.4
1996–97	239.7	164.3	121.2	43.0	68.6	13.9	7.6	12.0	670.2
1997–98	273.3	193.1	141.0	51.0	79.1	15.5	8.9	15.0	776.9
1998–99	287.3	207.7	145.9	50.7	76.9	14.5	8.6	14.2	805.8
1999–00	268.2	195.5	133.3	44.3	64.7	13.9	7.9	14.8	742.6
2000–01	284.8	224.4	140.3	49.6	72.8	14.6	7.5	14.6	808.7
2001–02	280.3	221.2	144.4	50.8	71.9	14.8	7.5	13.7	804.6
2002–03	290.2	234.8	164.7	56.6	76.7	15.4	7.7	14.5	860.5
2003–04	308.3	246.7	193.2	63.1	86.7	18.8	8.4	14.9	940.1
2004–05	308.8	256.3	212.7	64.1	95.2	20.6	9.3	14.7	981.8
2005–06	297.0	250.2	212.8	62.4	105.4	19.6	9.3	14.7	971.4
2006–07	305.9	252.5	223.4	60.8	117.2	18.8	9.7	15.6	1 003.9
2007–08	323.7	276.9	233.7	64.6	122.5	20.0	10.5	16.5	1 068.3
2008–09	280.6	243.4	194.1	59.4	105.3	17.7	9.4	14.9	924.7
2009–10	309.2	272.3	211.0	66.1	110.3	18.8	9.9	15.7	1 013.3
2010–11	310.6	269.3	202.7	62.8	111.6	17.9	10.0	15.7	1 000.6
2011–12	329.1	280.2	224.2	65.3	117.6	16.1	10.9	16.6	1 060.1

Source: ABS (2012).





# CHAPTER 5

## Rail

Figure T 5 Australia’s railways, by network manager

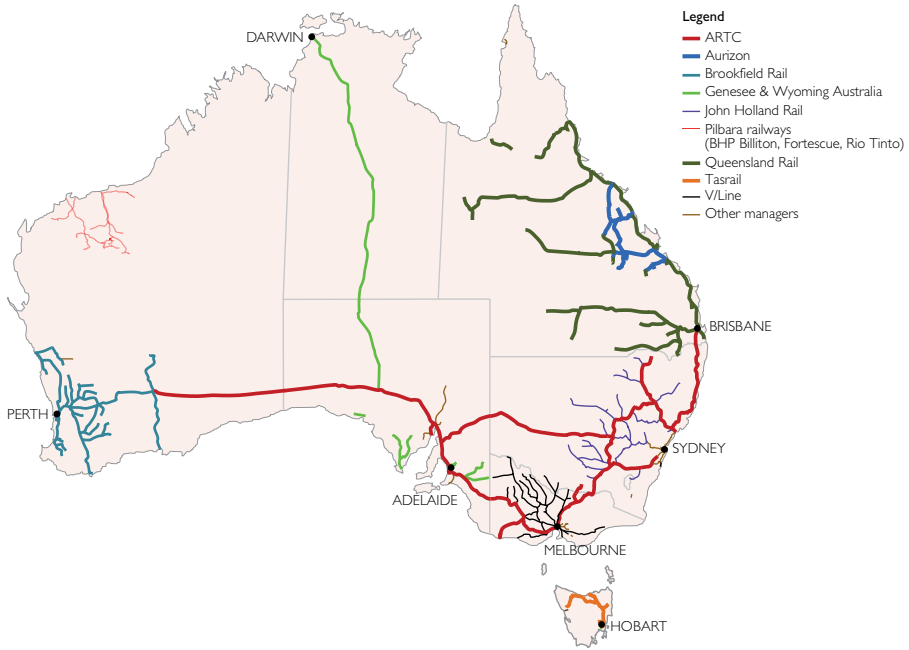


Table T 5.1a Intercapital rail distances—freight terminals

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Darwin	Canberra
	<i>kilometres</i>						
Sydney		929	965	1 868	4 137	4 459	316
Melbourne			1 901	832	3 468	3 790	811
Brisbane				2 725	5 101	5 424	1 281
Adelaide					2 637	2 959	1 643
Perth						4 174	4 019
Darwin							4 341

Source: BITRE estimates.

Table T 5.1b Intercapital rail distances—passenger terminals

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Darwin	Canberra
	<i>kilometres</i>						
Sydney		953	987	1 711	4 156	4 285	329
Melbourne			1 914	828	3 485	3 798	822
Brisbane				2 672	4 933	5 247	1 291
Adelaide					2 657	2 971	1 629
Perth						4 178	4 025
Darwin							4 339

Source: BITRE estimates.

**Table T 5.2a** Route-kilometres of open railway,<sup>6</sup> by jurisdiction and gauge, 2013

Jurisdiction	Gauge				Total
	1 067	1 435	1 600	Other/dual	
New South Wales	8	7 071	73	1	7 153
Victoria	16	1 222	2 832	61	4 131
Queensland	7 666	67		84	7 818
South Australia	561	3 114	247	22	3 944
Western Australia	3 529	4 211		207	7 947
Tasmania	687				687
Northern Territory	28	1 690			1 718
ACT		6			6
Total	12 495	17 381	3 153	375	33 404

<sup>6</sup> See end notes.

Source: BITRE estimates.

**Table T 5.2b** Route-kilometres of open railway,<sup>6</sup> by jurisdiction and single or double (or more) trackage

Jurisdiction	Trackage			Total
	Double (or more)	Single		
New South Wales	1 176	5 977		7 153
Victoria	848	3 284		4 131
Queensland	687	7 131		7 818
South Australia	115	3 829		3 944
Western Australia	775	7 172		7 947
Tasmania		687		687
Northern Territory		1 718		1 718
ACT		6		6
Total	3 583	29 821		33 404

<sup>6</sup> See end notes.

Source: BITRE estimates.

**Table T 5.2c** Route-kilometres of open railway,<sup>6</sup> by jurisdiction and overhead electrical system used

Jurisdiction	Electrical system				Total
	1 500 VDC	25 kV AC, 50 Hz	33 kV AC	Not electrified	
New South Wales	629		8	6 516	7 153
Victoria	375			3 756	4 131
Queensland		2 039		5 779	7 818
South Australia				3 944	3 944
Western Australia		171		7 775	7 947
Tasmania				687	687
Northern Territory				1 718	1 718
ACT				6	6
Total	1 004	2 210	8	30 182	33 404

<sup>6</sup> See end notes.

Source: BITRE estimates.

**Table T 5.3** Network characteristics of urban railways

	Route-kilometres in metropolitan area			Total	Route-kilometres, electrified	Metropolitan Stations
	Passenger-only lines	Freight-only lines	Shared passenger/freight			
Sydney	181	33	156	370	337	176
Melbourne	234	66	196	496	359	219
Brisbane	86	81	134	301	220	123
Adelaide	88	62	30	180	na	84
Perth	168	121	1	290	169	69

na Not applicable

Source: BITRE (2012).

**Table T 5.4** Interstate non-bulk rail freight by state/territory of origin

Financial year	NSW	VIC	QLD	SA	WA	NT	ACT	Total
<i>million tonne-kilometres</i>								
1971–72	1 208	1 550	414	1 212	288	63	na	4 735
1972–73	1 318	1 688	413	1 281	472	67	na	5 238
1973–74	1 429	1 822	412	1 344	657	70	na	5 733
1974–75	1 542	1 952	411	1 404	841	74	na	6 223
1975–76	1 656	2 079	410	1 458	1 026	77	na	6 706
1976–77	1 706	2 066	429	1 537	961	82	na	6 780
1977–78	1 756	2 052	448	1 614	897	87	na	6 853
1978–79	1 806	2 040	467	1 689	832	91	na	6 927
1979–80	1 857	2 020	487	1 763	768	96	na	6 991
1980–81	1 877	2 125	443	1 692	931	93	na	7 161
1981–82	1 670	2 045	464	1 520	1 111	85	na	6 895
1982–83	1 464	1 964	485	1 352	1 292	76	na	6 632
1983–84	1 671	2 134	495	1 575	1 164	94	na	7 134
1984–85	1 646	2 177	555	1 488	1 155	87	na	7 108
1985–86	1 846	2 106	681	1 321	1 345	79	na	7 379
1986–87	2 007	2 171	737	1 628	1 402	93	na	8 038
1987–88	2 545	2 468	760	1 865	1 404	107	na	9 149
1988–89	2 864	2 970	865	2 059	1 580	113	na	10 451
1989–90	2 623	2 846	952	2 242	1 467	112	na	10 241
1990–91	2 381	2 844	978	1 970	1 540	117	na	9 829
1991–92	2 416	2 968	1 100	2 013	1 728	122	na	10 346
1992–93	2 576	2 967	1 162	2 235	1 952	132	na	11 023
1993–94	2 698	3 167	1 225	2 344	2 167	139	na	11 740
1994–95	2 851	3 396	1 288	2 454	2 382	147	na	12 518
1995–96	2 873	3 329	1 352	2 448	2 107	154	na	12 264
1996–97	2 884	3 679	1 443	2 347	2 300	120	na	12 772
1997–98	2 916	3 997	1 641	2 338	2 583	150	na	13 624
1998–99	2 926	4 469	1 444	2 262	3 130	138	na	14 369
1999–00	2 918	4 620	1 580	2 348	3 422	154	na	15 042
2000–01	2 910	4 775	1 703	2 432	3 708	170	na	15 697
2001–02	2 917	4 934	1 803	2 513	4 285	185	na	16 636
2002–03	2 922	5 091	1 903	2 592	4 859	200	na	17 567
2003–04	2 930	5 251	2 002	2 672	5 437	214	na	18 506
2004–05	2 939	5 410	2 102	2 751	6 008	214	na	19 426
2005–06	2 948	5 570	2 202	2 832	6 586	214	na	20 353
2006–07	4 074	8 409	2 365	4 985	6 570	454	na	26 857
2007–08 <sup>3</sup>	4 342	7 242	2 677	4 079	6 642	621	na	25 603
2008–09	3 851	6 586	2 041	4 229	5 913	550	na	23 170
2009–10	3 948	6 688	2 206	3 867	6 008	513	na	23 230

<sup>3</sup> See end notes.

na: not applicable.

Source: BITRE (2012i).

# CHAPTER 6

## Aviation

Figure T 6 Australia's top 40 airports, passengers

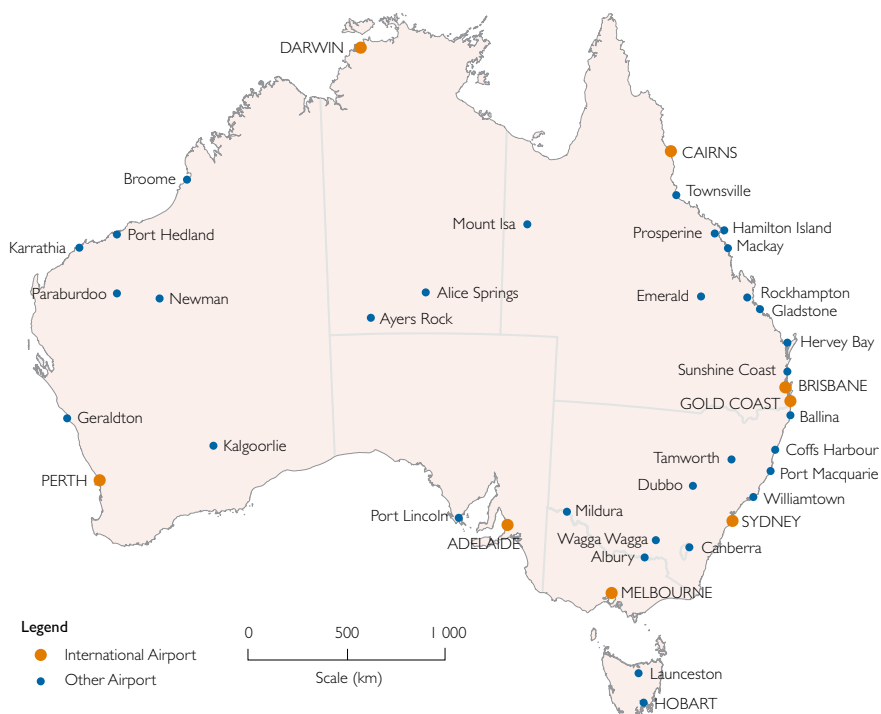


Table T 6.1 Intercapital air distances (great circle distances)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
				<i>km</i>				
Sydney		706	753	1 167	3 284	1 039	3 155	236
Melbourne			1 381	643	2 706	618	3 131	470
Brisbane				1 622	3 615	1 791	2 852	956
Adelaide					2 120	1 172	2 619	972
Perth						3 022	2 651	3 091
Hobart							3 742	850
Darwin								3 141

Source: BITRE (2012b).

**Table T 6.2** International airline activity

Financial year	Flights	Revenue passengers <sup>7</sup>	Available seats	Load factor <sup>8</sup>	Freight '000 tonnes
	no.	no.		per cent	
1970–71	17 067	1 199 148			33.4
1971–72	18 573	1 433 739			36.3
1972–73	19 735	1 769 816			44.7
1973–74	20 474	2 160 876			58.1
1974–75	27 013	2 392 102			65.8
1975–76	23 267	2 801 883			71.1
1976–77	21 938	2 894 965			78.5
1977–78	24 082	3 036 960			89.2
1978–79	20 764	3 506 753			111.8
1979–80	20 478	4 019 316			122.0
1980–81	20 487	4 108 265			127.8
1981–82	22 346	4 186 171			157.7
1982–83	21 486	4 249 249			166.7
1983–84	21 082	4 451 708			193.9
1984–85	22 385	4 988 998			222.9
1985–86	25 308	5 424 377			235.8
1986–87	29 698	6 194 981			268.4
1987–88	33 848	7 211 743			296.1
1988–89	38 854	7 930 588	11 435 873	69.3	324.6
1989–90	42 353	8 252 769	12 257 200	67.3	353.9
1990–91	45 300	8 424 511	12 991 767	64.8	357.5
1991–92	48 419	9 042 889	13 773 493	65.7	379.8
1992–93	52 295	9 759 065	15 023 875	65.0	432.8
1993–94	54 781	10 621 976	15 709 444	67.6	476.3
1994–95	60 658	11 565 753	17 443 065	66.9	543.5
1995–96	68 387	12 679 451	19 610 366	66.0	564.9
1996–97	74 347	13 718 480	20 792 015	67.4	614.9
1997–98	77 811	14 080 113	21 604 059	66.7	645.6
1998–99	80 476	14 564 061	21 621 816	68.9	645.6
1999–00	86 751	15 583 694	22 895 592	69.3	687.2
2000–01	93 828	17 126 504	24 565 665	71.1	665.7
2001–02	87 557	16 486 343	22 892 570	73.8	634.3
2002–03	89 374	16 108 417	23 062 891	71.8	635.1
2003–04	100 336	18 131 286	25 885 687	71.5	627.0
2004–05	116 087	20 309 733	29 691 278	69.7	702.4
2005–06	117 790	21 096 951	30 041 002	71.3	726.0
2006–07	119 330	22 137 767	29 768 595	75.6	754.5
2007–08	124 176	23 264 573	30 625 242	77.1	781.0
2008–09	131 560	23 486 506	32 174 834	74.2	709.4
2009–10	141 194	25 625 654	34 309 383	75.7	760.0
2010–11	150 440	27 549 289	36 923 253	75.5	822.5
2011–12	156 100	28 882 348	38 265 068	76.4	856.8

**7,8** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE (2012d).

**Table T 6.3** Domestic airline activity

Financial year	Flights	Revenue passengers <sup>7</sup>	Revenue passenger kilometres <sup>9</sup>	Available seats	Available seat kilometres	Domestic load factor <sup>10</sup>	Freight
			'000	'000	'000	per cent	'000 tonnes
1977–78	374 866	11 958 560	8 313 930		12 465 976	66.69	
1978–79	397 242	12 587 854	8 787 099		12 795 744	68.67	
1979–80	415 879	13 540 872	9 692 782		13 526 185	71.66	
1980–81	416 282	13 563 340	9 979 054		13 627 596	73.23	
1981–82	416 291	13 695 462	10 406 883		14 933 230	69.69	
1982–83	411 027	12 644 727	9 586 535		14 247 860	67.28	
1983–84	406 679	13 037 551	9 940 350		13 966 231	71.17	
1984–85	411 621	13 768 268	10 604 648	21 123	14 733 094	71.98	
1985–86	426 450	14 798 619	11 588 920	22 642	16 109 845	71.94	
1986–87	427 149	15 267 094	12 372 645	23 352	17 316 196	71.45	
1987–88	435 622	16 471 140	13 623 398	24 130	18 321 841	74.36	
1988–89	452 433	16 844 631	14 168 630	24 430	18 821 360	75.28	
1989–90	364 595	12 272 726	10 490 243	18 836	14 846 965	70.66	
1990–91	444 183	16 935 005	15 139 951	26 123	21 748 111	69.62	
1991–92	490 740	20 997 030	19 806 981	29 384	25 703 400	77.06	
1992–93	522 879	21 475 685	19 849 262	30 943	26 293 801	75.49	
1993–94	543 428	24 788 627	23 862 333	35 549	32 153 754	74.21	
1994–95	572 035	26 997 493	26 394 411	39 610	36 685 149	71.95	
1995–96	589 501	28 611 325	28 372 962	41 964	39 670 986	71.52	
1996–97	592 477	29 040 584	29 344 131	43 024	41 423 354	70.84	
1997–98	589 262	29 358 221	29 780 624	42 291	41 077 354	72.50	
1998–99	596 302	29 733 510	30 390 004	42 322	41 276 389	73.63	
1999–00	595 629	31 365 384	32 203 645	43 442	42 669 709	75.47	
2000–01	625 903	34 105 561	35 014 922	47 541	46 709 057	74.96	
2001–02	493 750	30 510 909	32 300 227	41 596	42 265 977	76.42	
2002–03	484 895	32 104 317	35 103 726	43 207	45 534 719	77.09	
2003–04	501 771	36 410 853	40 402 092	47 683	51 741 384	78.08	
2004–05	544 317	40 435 504	45 047 723	53 859	58 303 803	77.26	
2005–06	545 410	42 531 425	47 782 489	56 532	61 808 822	77.31	284.11
2006–07	541 497	45 827 236	52 022 148	59 121	65 670 698	79.22	271.64
2007–08	562 366	49 278 702	56 191 023	63 873	71 066 014	79.07	295.09
2008–09	563 251	50 238 844	57 551 882	65 494	73 181 409	78.64	243.17
2009–10	578 305	51 756 690	59 026 300	66 600	74 216 666	79.54	236.18
2010–11	610 829	54 755 322	63 154 861	70 615	80 273 520	78.67	253.30
2011–12	615 133	54 984 699	64 330 568	71 076	81 617 106	78.82	236.34

**7, 9, 10** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE (2012c).

**Table T 6.4a** Activity at major airports—revenue passengers (thousand)

Financial year	Sydney	Melbourne	Brisbane	Perth	Adelaide	Gold Coast	Cairns	Canberra	Darwin	Hobart	Townsville
1985–86	9 498	6 476	3 457	1 939	2 082	778	578	1 008	407	506	1 030
1986–87	10 187	6 776	3 728	2 098	2 083	930	742	1 043	420	494	1 010
1987–88	11 510	7 448	4 325	2 226	2 239	1 120	934	1 117	469	539	1 007
1988–89	12 100	7 743	4 834	2 338	2 290	1 259	1 054	1 089	496	544	908
1989–90	10 108	6 511	3 933	1 999	1 825	659	840	721	398	455	455
1990–91	12 361	8 346	5 246	2 508	2 461	1 090	1 288	1 124	496	590	512
1991–92	15 070	10 196	6 644	3 026	3 006	1 495	1 776	1 361	563	684	482
1992–93	15 486	10 255	6 900	2 997	3 033	1 564	1 948	1 382	610	706	555
1993–94	16 650	10 884	7 493	3 429	3 251	1 711	2 223	1 514	707	743	514
1994–95	18 335	11 992	8 509	3 833	3 500	1 879	2 419	1 679	824	815	577
1995–96	19 878	12 972	9 236	4 145	3 743	1 993	2 595	1 750	932	850	598
1996–97	20 637	13 419	9 683	4 484	3 768	1 937	2 657	1 735	984	841	607
1997–98	21 013	13 791	9 737	4 624	3 949	1 868	2 598	1 825	1 011	854	628
1998–99	21 585	14 131	9 834	4 677	4 046	1 864	2 656	1 821	1 028	860	653
1999–00	23 098	15 146	10 534	4 891	4 186	1 959	2 718	1 969	1 057	909	682
2000–01	25 814	16 881	12 467	5 162	4 443	1 888	2 891	2 107	1 078	974	732
2001–02	23 150	15 967	11 774	4 766	4 175	1 736	2 642	1 841	963	958	696
2002–03	23 447	16 382	11 841	5 189	4 351	2 178	2 900	1 916	985	1 010	778
2003–04	26 090	18 631	13 780	5 889	4 893	2 504	3 222	2 303	1 073	1 226	923
2004–05	27 954	20 274	15 358	6 525	5 363	3 142	3 551	2 479	1 211	1 523	1 055
2005–06	28 996	21 041	16 016	7 005	5 767	3 515	3 731	2 550	1 219	1 606	1 161
2006–07	31 016	22 157	17 380	7 977	6 181	3 778	3 782	2 687	1 404	1 629	1 279
2007–08	32 701	23 943	18 298	8 952	6 619	4 323	3 777	2 853	1 562	1 758	1 366
2008–09	32 346	24 448	18 720	9 359	6 784	4 618	3 654	3 062	1 539	1 869	1 436
2009–10	34 461	25 918	18 897	9 993	7 016	5 186	3 550	3 258	1 569	1 856	1 518
2010–11	35 958	27 963	19 975	10 890	7 279	5 486	3 859	3 241	1 680	1 903	1 630
2011–12	35 987	27 956	20 874	11 997	6 947	5 327	3 943	3 159	2 045	1 815	1 627

Source: BITRE (2013b).



**Table T 6.4b** Activity at major airports—aircraft movements<sup>11</sup>

Financial year	Sydney	Melbourne	Brisbane	Perth	Adelaide	Gold Coast	Cairns	Canberra	Darwin	Hobart	Townsville
1985–86	137 898	86 391	51 460	45 124	52 360	12 926	11 358	20 615	10 781	12 200	17 471
1986–87	144 160	88 271	55 946	36 222	50 587	16 715	14 568	21 568	12 294	11 728	17 644
1987–88	152 972	92 487	65 359	32 184	47 688	19 653	17 551	21 642	12 125	11 556	16 482
1988–89	163 946	95 555	70 241	31 799	49 656	22 224	19 694	20 726	10 794	10 095	17 425
1989–90	139 038	79 854	57 931	28 193	41 827	16 540	14 805	15 092	5 284	8 445	10 732
1990–91	165 921	102 204	77 181	35 522	50 315	22 609	25 480	22 432	7 199	10 140	13 732
1991–92	182 968	110 530	94 527	39 472	55 797	26 299	32 547	25 988	13 162	10 681	14 299
1992–93	202 555	119 862	99 854	39 590	58 533	26 358	35 854	29 054	15 323	10 929	14 386
1993–94	206 660	118 507	105 662	44 900	59 633	27 228	38 776	31 275	17 954	11 325	15 137
1994–95	221 208	127 155	116 880	50 002	63 253	26 828	41 903	35 625	20 663	12 381	15 928
1995–96	235 398	132 411	125 827	54 088	66 866	26 446	43 119	37 057	23 781	11 230	17 103
1996–97	243 592	136 339	125 108	57 286	68 970	24 203	44 009	38 173	24 303	9 468	18 035
1997–98	248 791	138 252	125 581	55 893	72 544	22 581	42 152	38 446	23 729	8 965	17 373
1998–99	249 175	141 560	129 230	53 609	73 258	22 260	41 594	38 077	25 138	9 697	17 943
1999–00	255 600	150 657	133 352	55 806	71 543	21 320	41 415	41 025	22 374	10 776	17 994
2000–01	283 408	174 663	151 552	56 176	73 666	20 417	41 859	51 867	22 126	15 205	19 013
2001–02	227 644	147 150	125 469	45 051	66 533	16 153	35 161	39 716	17 253	12 266	12 687
2002–03	225 872	146 751	116 552	47 854	66 231	21 225	38 594	35 986	17 243	11 444	15 208
2003–04	241 787	157 524	123 901	51 283	67 051	20 837	41 965	39 418	16 508	12 729	17 402
2004–05	257 630	176 038	139 984	56 445	70 761	27 728	45 474	38 512	16 501	15 889	20 101
2005–06	258 923	175 435	141 785	57 972	70 829	27 471	46 547	38 182	16 416	14 335	22 156
2006–07	264 401	176 112	144 359	61 659	72 508	27 279	44 952	38 257	17 981	13 497	21 108
2007–08	275 226	186 431	150 895	68 985	74 772	31 691	43 488	41 177	19 270	14 488	20 120
2008–09	271 029	189 011	157 675	78 623	74 654	32 083	39 511	45 191	22 733	15 027	21 044
2009–10	279 356	194 298	157 756	82 349	74 504	35 297	38 958	44 345	26 310	15 166	25 840
2010–11	290 501	206 798	168 342	87 863	76 110	37 737	42 611	43 280	27 237	16 064	29 327
2011–12	291 310	205 916	178 195	93 590	72 259	35 698	43 674	42 938	26 829	14 529	28 109

<sup>11</sup> See end notes.

Source: BITRE (2013b).

**Table T 6.5** Domestic on-time performance<sup>12, 13</sup>

Financial year	Sectors scheduled	Cancellations	Sectors flown	On-time departures	On-time arrivals
		<i>per cent</i>		<i>per cent</i>	<i>per cent</i>
2004–05	430 714	0.9	426 662	87.0	86.4
2005–06	457 817	1.0	453 406	87.0	85.7
2006–07	467 907	0.8	463 981	86.9	85.6
2007–08	496 564	1.7	488 112	80.6	78.8
2008–09	502 291	1.7	493 710	81.1	79.7
2009–10	502 106	1.0	497 268	85.6	84.4
2010–11	527 708	1.6	519 255	80.6	78.8
2011–12	530 101	1.5	522 374	81.4	80.0

12, 13 See end notes.

Source: BITRE (2012e).

**Table T 6.6** BITRE airfare index

Financial year	Business	Economy	Restricted economy	Best discount
	<i>index</i>	<i>index</i>	<i>index</i>	<i>index</i>
1993–94	59.1	67.4		96.6
1994–95	62.8	69.1		95.7
1995–96	65.6	71.5		94.8
1996–97	71.6	76.1		104.2
1997–98	76.2	78.7		114.8
1998–99	79.2	80.9		114.2
1999–00	80.0	81.8		113.9
2000–01	89.0	91.5		100.4
2001–02	92.5	96.0		109.1
2002–03	96.8	97.1	102.7	105.4
2003–04	103.0	100.2	100.1	102.3
2004–05	109.8	106.7	106.7	87.8
2005–06	106.6	112.8	99.6	94.9
2006–07	111.9	120.0	103.5	100.3
2007–08	117.4	112.9	111.3	100.0
2008–09	124.6	104.1	115.9	87.0
2009–10	116.1	108.2	113.2	74.9
2010–11	124.3	114.4	111.8	70.6
2011–12	116.9	131.0	84.9	87.7

Note: Data are not readily available for missing years.

Note: Base of index: July 2003 = 100.0.

Source: BITRE (2012e).

**Table T 6.7a** Real airport charges (per return passenger)—international<sup>14, 15</sup>

	Sydney	Melbourne	Brisbane	Perth	Adelaide
	\$	\$	\$	\$	\$
Jul-03	61.82	42.44	45.67	48.88	60.05
Jul-04	60.92	41.97	49.12	46.52	65.40
Jul-05	62.21	43.10	49.36	56.63	63.91
Jul-06	65.57	45.37	51.34	58.71	86.95
Jul-07	67.99	50.38	63.11	57.32	85.56
Jul-08	63.01	49.33	75.67	54.60	80.43
Jul-09	69.77	49.23	78.49	56.53	81.58
Jul-10	71.14	48.72	76.16	53.57	81.00
Jul-11	68.63	46.67	74.36	55.07	75.52
Jul-12	69.02	51.21	74.59	60.59	72.28

**14, 15** See end notes.

Source: ABS (2012–13f) and BITRE (2013c).

**Table T 6.7b** Real airport charges (per return passenger)—domestic<sup>14, 16</sup>

	Sydney	Melbourne	Brisbane	Perth	Adelaide
	\$	\$	\$	\$	\$
Jul-03	34.58	24.18	24.38	22.65	27.78
Jul-04	33.99	24.38	25.98	22.45	27.51
Jul-05	33.49	25.28	24.29	23.77	28.83
Jul-06	33.68	25.53	24.99	33.14	38.80
Jul-07	34.59	28.03	25.50	31.29	38.68
Jul-08	35.62	27.31	23.11	29.79	37.59
Jul-09	36.51	27.29	30.22	30.53	37.97
Jul-10	35.91	27.79	29.07	30.79	36.66
Jul-11	34.15	26.24	27.68	34.66	32.02
Jul-12	33.92	28.19	27.75	52.00	32.27

**14, 16** See end notes.

Source: ABS (2012–13f) and BITRE (2013c).

**Table T 6.7c** Real airport charges (per return passenger)—regional<sup>14, 17</sup>

	Sydney	Melbourne	Brisbane	Perth	Adelaide
	\$	\$	\$	\$	\$
Jul-03	26.79	24.13	23.04		20.81
Jul-04	26.19	24.33	24.62		20.57
Jul-05	25.94	24.97	22.70		21.51
Jul-06	25.74	25.40	23.57	32.85	21.75
Jul-07	25.31	27.88	24.05	30.99	21.50
Jul-08	24.13	27.19	21.75	29.54	20.98
Jul-09	23.85	27.17	28.87	30.29	22.35
Jul-10	23.18	27.67	27.76	30.55	21.24
Jul-11	22.41	26.12	26.41	34.43	19.80
Jul-12	22.20	28.03	26.44	51.72	19.89

**14, 17** See end notes.

Source: ABS (2012–13f) and BITRE (2013c).

**Table T 6.8** Number of Australian registered aircraft by aircraft type

Date	Aeroplane				Helicopter	Balloon	Glider
	Piston	Turbofan	Turbojet	Turboprop			
14 December 1998	8 244	257	31	519	779	296	1 056
20 December 1999	8 347	268	34	534	870	308	1 063
17 December 2000	8 394	293	34	549	942	323	1 060
17 December 2001	8 440	310	37	553	980	332	1 060
16 December 2002	8 440	303	42	549	1 034	337	1 082
13 December 2003	8 684	308	51	576	1 195	351	1 106
20 December 2004	8 688	308	51	576	1 196	350	1 106
4 December 2005	8 798	323	52	611	1 284	350	1 115
7 November 2006	8 691	337	52	628	1 303	318	1 047
14 December 2007	8 928	370	52	693	1 479	335	1 085
31 December 2008	9 123	426	52	737	1 635	336	1 122
31 December 2009	9 202	458	54	746	1 696	339	1 143
13 December 2010	9 413	516	55	778	1 797	350	1 172
14 December 2011	9 663	559	54	845	1 909	361	1 193
19 November 2012	9 808	579	51	882	2 003	368	1 201

Source: CASA (2013).

# CHAPTER 7

## Shipping

Figure T 7 Map of selected Australian ports



Table T 7.1 Intercapital sea distances

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin
	<i>kilometres</i>						
Sydney		1 114	977	1 833	3 991	1 195	4 595
Melbourne			2 042	988	3 111	878	5 661
Brisbane				2 761	4 920	2 120	3 845
Adelaide					2 509	1 436	na
Perth						3 367	3 426
Hobart							5 739

na: not applicable.

Source: BITRE estimates, Australian Chamber of Shipping (1993).

**Table T 7.2a** Number of cargo ships involved in coastal or international voyages that made port calls, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	Total
1992–93	1 104	676	1 251	416	1 219	233	221	2 591
1993–94	1 069	719	1 185	418	1 181	232	190	2 584
1994–95	1 085	688	1 296	361	1 216	213	228	2 618
1995–96	1 003	697	1 178	373	1 203	195	193	2 558
1996–97	1 236	803	1 354	422	1 404	237	248	2 936
1997–98	1 457	886	1 622	486	1 620	308	318	3 276
1998–99 <b>18</b>	1 304	815	1 506	420	1 548	279	280	3 068
1999–00	1 228	805	1 644	415	1 592	281	266	3 097
2000–01	1 193	758	1 596	449	1 513	296	256	3 040
2001–02	1 185	768	1 543	508	1 376	289	245	3 035
2002–03 <b>19</b>	1 434	877	2 294	591	2 129	407	292	8 024
2003–04	1 484	917	2 475	610	2 271	361	275	8 393
2004–05	1 466	965	2 524	580	2 342	386	309	8 572
2005–06	1 429	858	2 668	592	2 443	328	303	8 621
2006–07	1 562	921	2 924	521	2 634	369	321	9 252
2007–08	1 604	944	3 048	526	2 577	368	337	9 404
2008–09	1 653	877	3 109	599	2 857	337	344	9 776
2009–10	1 694	835	3 212	530	2 931	327	420	9 949
2010–11	1 884	1 025	3 121	716	3 284	338	401	10 769
2011–12	2 038	1 204	3 320	786	3 725	263	386	11 722

**18, 19** See end notes.

Source: LLI (2013).

**Table T 7.2b** Number of port calls made by ships involved in coastal or international voyages, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	Total
1992–93	3 696	3 371	4 214	839	3 360	1 800	564	17 856
1993–94	3 489	3 074	3 473	817	3 102	1 566	527	16 057
1994–95	3 324	2 987	3 934	810	3 187	1 493	617	16 369
1995–96	2 924	2 817	3 485	751	2 892	1 294	562	14 763
1996–97	3 725	3 327	4 418	901	3 583	1 441	834	18 324
1997–98	4 566	3 708	5 018	996	4 372	1 504	997	21 241
1998–99 <b>18</b>	4 008	3 306	4 381	975	4 275	1 316	591	18 852
1999–00	4 008	3 306	4 381	975	4 275	1 316	591	18 852
2000–01	3 935	3 547	4 875	957	4 246	1 566	693	19 819
2001–02	3 948	3 511	4 764	1 073	4 226	1 625	630	19 777
2002–03 <b>19</b>	3 846	3 761	5 349	1 115	3 606	2 040	579	20 296
2003–04	4 054	3 892	5 088	1 123	3 847	1 900	508	20 412
2004–05	4 260	3 993	5 204	1 059	4 027	2 117	514	21 174
2005–06	4 207	3 920	5 874	1 242	4 708	2 028	530	22 509
2006–07	4 269	4 015	6 543	1 080	5 507	1 982	587	23 983
2007–08	4 876	4 083	7 065	1 122	5 108	1 977	624	24 855
2008–09	4 580	3 660	6 513	1 093	5 730	1 814	684	24 074
2009–10	4 141	3 395	6 632	1 031	5 565	1 691	765	23 220
2010–11	5 091	4 044	6 634	1 271	7 617	1 775	730	27 162
2011–12	5 999	4 151	7 762	1 723	10 668	1 427	673	32 403

**18, 19** See end notes.

Source: LLI (2013).

**Table T 7.3a** Number of ships involved in coastal or international voyages that made port calls, by major ports

Financial year	Melbourne	Brisbane	Sydney	Fremantle	Newcastle	Gladstone	Dampier	Port Headland
1992–93	444	479	464	555	496	331	357	278
1993–94	461	481	493	541	488	235	326	253
1994–95	508	551	527	544	515	250	365	272
1995–96	499	498	495	555	426	284	339	268
1996–97	542	605	545	617	583	302	392	297
1997–98	597	675	636	717	709	384	521	307
1998–99 <b>18</b>	546	620	521	683	651	404	462	302
1999–00	489	651	512	665	595	419	514	331
2000–01	482	604	476	620	589	459	480	369
2001–02	487	551	451	610	626	466	241	346
2002–03 <b>19</b>	447	547	461	629	661	522	254	376
2003–04	478	564	478	626	687	633	393	332
2004–05	517	580	457	617	684	652	405	437
2005–06	445	610	449	593	653	676	459	516
2006–07	547	627	510	643	705	736	512	490
2007–08	491	632	517	599	706	795	532	485
2008–09	497	682	493	727	758	846	621	551
2009–10	475	653	476	699	808	875	651	589
2010–11	523	716	507	692	904	830	729	680
2011–12	646	812	579	774	979	903	709	801

**18, 19** See end notes.

Source: LLI (2013).

**Table T 7.3b** Number of port calls made by ships involved in coastal or international voyages, by major ports

Financial year	Melbourne	Brisbane	Sydney	Fremantle	Newcastle	Gladstone	Dampier	Port Headland
1992–93	2 573	1 528	2 059	1 224	943	702	716	503
1993–94	2 312	1 276	2 008	1 213	862	498	631	460
1994–95	2 337	1 373	1 945	1 219	865	511	668	471
1995–96	2 223	1 261	1 781	1 149	696	534	595	438
1996–97	2 563	1 687	2 105	1 364	1 041	640	740	523
1997–98	2 774	1 844	2 449	1 668	1 418	737	957	613
1998–99 <b>18</b>	2 400	1 755	2 061	1 645	1 281	610	873	601
1999–00	2 597	1 940	2 106	1 514	1 205	667	960	590
2000–01	2 575	1 795	2 016	1 521	1 224	822	953	684
2001–02	2 618	1 752	1 931	1 504	1 452	980	353	623
2002–03 <b>19</b>	2 870	1 797	1 894	1 409	1 342	1 108	360	673
2003–04	2 915	1 727	2 044	1 403	1 380	1 236	698	547
2004–05	3 044	1 831	2 041	1 296	1 545	1 281	666	914
2005–06	3 054	2 099	2 152	1 375	1 403	1 410	939	1 206
2006–07	3 129	2 215	2 145	1 402	1 454	1 469	1 068	1 599
2007–08	3 088	2 170	2 254	1 410	1 873	1 665	1 067	1 155
2008–09	2 845	2 043	2 065	1 528	1 761	1 605	1 471	1 446
2009–10	2 625	1 927	1 796	1 452	1 617	1 583	1 426	1 278
2010–11	3 087	2 152	1 859	1 607	2 457	1 543	1 679	2 298
2011–12	3 166	2 488	1 863	2 410	3 042	2 154	2 258	3 198

**18, 19** See end notes.

Source: LLI (2013).

**Table T 7.4** International sea freight to and from Australia

Financial year	Bulk	Non-bulk <i>million tonnes</i>	Total
1995–96	398.5	21.4	420.0
1996–97	429.6	24.2	453.8
1997–98	451.4	27.6	479.0
1998–99	458.5	29.6	488.1
1999–00	487.2	31.5	518.7
2000–01	520.0	29.9	550.0
2001–02	526.6	32.2	558.7
2002–03	557.3	34.3	591.6
2003–04	585.4	37.1	622.5
2004–05	631.1	49.4	680.6
2005–06	649.4	46.5	695.9
2006–07	702.2	31.6	733.8
2007–08	752.8	36.8	789.6
2008–09	<sup>20</sup> 787.2	<sup>20</sup> 47.6	<sup>20</sup> 834.8
2009–10	893.6	54.0	947.6
2010–11	917.9	55.5	973.4
2011–12	1007.2	60.9	1 068.1

<sup>20</sup> See end notes.

Source: ABS (2013b) and BITRE (2013a)



**Table T 7.5a** Cargo loaded (including exports) at Australian ports, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	Total
	<i>million tonnes</i>							
1995–96	76.58	18.52	106.09	13.08	190.12	9.03	6.08	420.70
1996–97	80.74	13.77	98.21	8.48	191.46	3.95	6.01	453.14
1997–98	96.32	20.62	118.98	13.82	213.71	8.64	6.35	479.64
1998–99	93.03	20.23	126.07	14.91	207.59	10.32	6.42	480.16
1999–00	90.63	22.46	141.16	14.18	225.54	11.50	6.24	513.32
2000–01	95.71	25.28	156.02	15.37	235.71	11.17	5.99	546.96
2001–02	94.62	23.70	159.48	17.05	238.15	13.48	5.41	553.39
2002–03	93.24	20.73	166.66	14.66	265.82	13.79	5.76	582.18
2003–04	98.08	21.64	172.79	15.22	282.24	13.78	6.29	611.49
2004–05	101.86	20.98	186.20	15.01	318.17	13.32	7.21	664.31
2005–06	106.12	22.65	185.84	15.55	328.34	12.02	7.64	679.73
2006–07	106.35	21.73	196.94	12.48	351.24	11.92	10.15	712.56
2007–08 <b>21</b>	114.31	20.50	199.29	16.82	388.44	13.10	10.65	765.38
2005–06	106.66	23.12	186.03	15.64	328.74	12.01	7.64	679.85
2006–07	106.55	21.98	197.00	12.50	351.38	11.94	10.30	711.63
2007–08	114.73	20.58	199.51	16.84	388.59	13.11	10.70	764.06
2008–09	116.04	19.11	205.27	18.34	419.42	11.68	12.72	802.59
2009–10	125.37	19.19	228.82	19.23	493.87	10.94	14.74	912.16
2010–11	139.29	21.83	210.19	23.84	511.80	10.47	13.99	931.41
2011–12	157.26	23.78	217.92	27.86	571.30	9.57	12.76	1 020.46

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f)

**Table T 7.5b** Cargo discharged (including imports) at Australian ports, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	Total
	<i>million tonnes</i>							
1995–96	31.81	15.17	24.88	6.78	11.20	3.75	1.52	95.09
1996–97	13.29	10.33	12.18	3.64	8.54	0.42	1.43	99.87
1997–98	34.19	17.97	26.95	8.39	11.96	4.33	1.79	105.57
1998–99	30.74	21.15	27.74	7.18	11.72	3.98	1.91	104.43
1999–00	31.02	20.43	29.67	7.80	11.97	4.53	2.06	107.46
2000–01	30.95	21.22	28.81	7.47	12.01	3.93	2.11	106.49
2001–02	30.69	21.19	29.34	8.36	12.97	6.18	1.90	110.62
2002–03	31.22	22.84	31.79	8.00	14.60	5.55	1.71	115.71
2003–04	32.11	25.86	31.63	6.93	14.97	5.97	1.79	119.27
2004–05	32.45	25.77	34.27	7.33	15.20	6.05	2.24	123.32
2005–06	31.97	25.44	37.33	8.83	14.66	5.19	3.13	126.55
2006–07	34.36	26.97	39.25	9.73	16.66	4.27	6.42	137.67
2007–08 <b>21</b>	34.40	28.37	39.62	10.64	18.46	5.61	6.50	143.60
2005–06	32.34	26.17	37.37	8.83	14.72	5.19	3.14	127.75
2006–07	34.37	26.94	39.23	9.80	16.83	4.29	6.45	137.91
2007–08	34.39	28.41	39.80	10.64	18.97	5.62	6.63	144.46
2008–09	30.06	26.16	38.53	6.88	18.53	5.36	7.66	133.19
2009–10	34.45	25.74	40.91	7.57	17.94	4.94	6.83	138.39
2010–11	35.06	28.16	41.76	7.61	19.12	5.13	7.41	144.24
2011–12	31.17	27.90	43.49	8.77	20.59	4.95	6.95	143.81

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f)

**Table T 7.6a** Cargo loaded (including exports), by major Australian ports

Financial year	Port Hedland	Dampier	Newcastle	Hay Point	Gladstone	Port Walcott	Weipa	Port Kembla
<i>million tonnes</i>								
1995–96	63.9	70.2	53.0	45.8	27.3	25.1	9.9	17.0
1996–97	68.3	78.0	60.4	46.3	28.3	25.0	10.7	18.7
1997–98	69.5	87.5	70.0	52.0	30.2	22.2	10.9	17.7
1998–99	66.9	87.2	71.3	53.9	32.5	17.9	10.6	15.4
1999–00	65.0	92.7	68.6	64.1	35.0	26.4	13.3	14.9
2000–01	72.5	90.4	70.6	70.3	41.3	28.7	13.1	17.6
2001–02	72.5	96.4	72.0	70.3	43.2	27.0	12.9	15.3
2002–03	81.6	101.2	74.0	76.3	44.1	39.6	13.2	13.8
2003–04	89.4	101.6	79.6	78.0	48.0	43.9	13.4	12.7
2004–05	107.9	104.0	81.1	84.8	49.7	56.4	15.4	14.6
2005–06	110.2	111.9	83.1	80.3	52.0	55.2	17.8	16.2
2006–07	111.4	128.1	82.8	86.4	58.4	53.9	19.3	16.2
2007–08 <b>21</b>	129.9	138.0	90.3	80.3	60.4	56.4	22.1	16.6
2005–06	110.2	112.1	83.1	80.3	52.0	55.2	17.8	16.2
2006–07	111.4	128.2	82.8	86.4	58.4	53.9	19.3	16.2
2007–08	129.9	137.9	90.3	80.3	60.4	56.4	22.1	16.6
2008–09	158.0	141.9	92.5	82.0	62.6	56.9	20.5	16.9
2009–10	178.1	169.4	99.8	99.3	67.0	78.7	20.4	18.0
2010–11	197.2	166.7	111.7	87.8	59.6	80.9	22.4	19.6
2011–12	243.9	173.6	126.2	83.3	66.5	81.8	24.9	20.9

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f).

**Table T 7.6b** Cargo discharged (including imports), by major Australian ports

Financial year	Gladstone	Port Kembla	Geelong	Townsville	Newcastle	Bunbury	Devonport	Dampier
<i>million tonnes</i>								
1995–96	9.3	9.5	3.8	4.3	6.4	0.8	0.7	0.3
1996–97	9.9	9.1	4.7	4.8	6.2	0.6	0.9	0.3
1997–98	9.4	11.5	5.1	4.4	6.6	0.9	0.9	0.2
1998–99	10.1	8.7	5.9	4.9	6.4	0.8	1.1	0.3
1999–00	10.9	9.4	5.8	4.9	4.3	0.9	1.1	0.4
2000–01	11.0	9.6	6.0	4.7	3.4	1.2	1.2	0.2
2001–02	11.0	9.5	6.3	4.8	3.5	1.1	1.1	0.2
2002–03	10.9	9.7	6.1	5.6	3.1	1.1	1.3	0.7
2003–04	11.5	9.7	6.9	5.3	2.7	1.0	1.3	0.6
2004–05	13.3	9.9	7.3	5.3	2.9	1.2	1.3	0.5
2005–06	15.3	9.1	7.0	5.6	2.7	1.1	1.3	0.5
2006–07	16.1	9.3	6.9	5.2	3.2	1.2	1.0	0.7
2007–08 <b>21</b>	15.9	9.8	7.1	5.3	3.2	1.5	1.4	0.9
2005–06	15.4	9.1	7.6	5.6	2.7	1.1	1.3	0.6
2006–07	16.1	9.4	6.8	5.2	3.2	1.2	1.0	0.8
2007–08	16.0	9.8	7.1	5.3	3.2	1.5	1.4	1.3
2008–09	16.5	7.1	6.5	4.8	3.1	1.6	1.4	1.3
2009–10	16.7	9.9	6.3	5.9	3.2	1.4	1.4	1.6
2010–11	17.0	10.2	7.4	6.0	3.3	1.6	1.4	1.0
2011–12	17.9	6.5	7.3	6.2	3.6	1.3	1.4	2.2

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f).

**Table T 7.7a** Cargo loaded (including exports), by capital city ports

Financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin
	<i>million tonnes</i>						
1995–96	3.8	7.7	9.4	3.4	10.9	0.7	0.9
1996–97	4.7	8.8	10.3	4.4	11.9	0.3	1.3
1997–98	5.1	9.8	9.7	4.0	13.3	0.6	0.9
1998–99	4.3	9.5	9.7	4.2	12.9	0.7	0.7
1999–00	5.1	10.5	10.7	4.6	12.9	0.9	0.6
2000–01	5.8	11.1	11.4	5.3	12.5	0.6	0.4
2001–02	5.7	11.9	11.6	6.0	12.1	1.6	0.3
2002–03	4.7	10.8	11.0	5.3	12.9	1.3	0.4
2003–04	5.0	11.4	10.8	4.7	14.0	1.3	0.4
2004–05	5.1	11.8	11.5	4.5	14.2	1.0	0.7
2005–06	5.7	12.4	11.9	5.0	14.1	0.7	1.2
2006–07	6.0	11.1	11.5	4.4	12.3	0.8	3.9
2007–08 <b>21</b>	6.3	11.4	13.2	4.4	15.0	0.8	4.5
2005–06	6.2	12.8	12.1	5.1	14.3	0.7	1.2
2006–07	6.2	11.3	11.6	4.4	12.6	0.8	3.9
2007–08	6.7	11.5	13.4	4.4	15.2	0.8	4.6
2008–09	5.4	12.2	15.3	4.2	15.6	0.9	6.1
2009–10	6.3	12.3	15.3	4.7	15.4	0.7	6.4
2010–11	6.8	13.4	15.4	6.8	13.0	1.3	6.2
2011–12	7.5	15.1	19.2	9.2	14.3	0.9	5.5

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f).

**Table T 7.7b** Cargo discharged (including imports), by capital city ports

Financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin
	<i>million tonnes</i>						
1995–96	12.2	10.4	9.4	5.2	8.4	1.1	0.8
1996–97	15.7	10.6	9.6	5.8	9.9	0.2	0.8
1997–98	16.0	10.8	11.4	6.3	9.2	1.1	0.8
1998–99	15.6	12.6	11.1	5.4	9.2	0.8	0.9
1999–00	17.3	12.4	12.3	5.9	9.1	0.9	1.0
2000–01	17.9	11.6	11.4	5.8	9.0	0.5	1.0
2001–02	17.6	12.4	11.7	6.2	10.1	1.1	0.8
2002–03	18.4	14.2	13.4	5.9	11.4	1.0	0.7
2003–04	19.7	15.4	13.1	4.9	11.6	1.0	0.9
2004–05	19.6	16.2	13.9	5.1	12.0	1.1	1.3
2005–06	20.1	16.2	14.5	6.4	11.1	1.1	2.0
2006–07	21.8	17.8	16.3	7.5	12.4	1.1	5.3
2007–08 <b>21</b>	21.4	18.7	16.3	8.4	13.5	1.2	5.3
2005–06	20.5	16.2	14.4	6.4	11.1	1.1	2.0
2006–07	21.8	17.7	16.2	7.5	12.4	1.1	5.3
2007–08	21.4	18.8	16.4	8.4	13.6	1.2	5.4
2008–09	19.9	17.3	16.0	5.0	12.5	1.1	6.2
2009–10	21.3	17.3	16.6	5.6	12.1	1.0	5.3
2010–11	21.5	18.6	17.2	5.7	13.0	1.1	6.1
2011–12	21.2	19.3	17.4	6.3	13.7	0.9	5.4

**21** See end notes.

Source: ABS (2013b) and BITRE (2012f).

**Table T 7.8** Containers exchanged, selected Australian ports

Financial year	Melbourne	Sydney	Brisbane	Fremantle	Adelaide	Five ports
	<i>twenty foot equivalent units (TEU) exchanged</i>					
1993–94	801 344	587 670	228 055	169 174	64 619	1 850 862
1994–95	880 151	666 586	232 693	189 272	66 525	2 035 227
1995–96	923 142	684 714	249 439	202 680	69 355	2 129 330
1996–97	984 394	730 446	272 632	209 564	88 497	2 285 533
1997–98	1 040 810	798 209	317 568	250 802	107 912	2 515 301
1998–99	1 121 161	878 580	357 703	275 697	120 586	2 753 727
1999–00	1 287 795	1 010 509	414 449	297 363	115 506	3 125 622
2000–01	1 316 665	988 967	453 257	354 144	133 236	3 246 269
2001–02	1 420 781	1 009 453	481 623	381 809	145 226	3 438 892
2002–03	1 593 798	1 160 513	570 204	431 342	148 333	3 904 190
2003–04	1 717 718	1 270 256	639 272	457 305	169 108	4 253 659
2004–05	1 910 441	1 375 610	726 147	467 313	170 585	4 650 096
2005–06	1 929 925	1 445 465	766 278	455 428	189 391	4 786 487
2006–07	2 093 611	1 620 121	875 045	505 082	219 117	5 312 976
2007–08	2 256 644	1 778 425	940 760	573 527	280 121	5 829 477
2008–09	2 157 352	1 783 920	896 167	565 491	276 545	5 679 475
2009–10	2 236 635	1 927 520	772 400	557 039	274 501	5 768 095
2010–11	2 392 974	2 020 151	828 379	598 250	297 701	6 137 455
2011–12	2 568 164	2 036 064	1 025 069	656 918	323 834	6 610 049

Source: BITRE (2012).

**Table T 7.9a** Summary of the Australian trading fleet—number of vessels

Financial year	Vessel capacity		Total Australian trading fleet	Flag	
	Major trading fleet (greater than 2000 dwt)	Other (minor) trading ships (greater than 150 gross registered tonnage and less than or equal to 2000 dwt)		Total Australian registered	Total Overseas registered
2001–02	94	23	117	62	55
2002–03	93	25	118	58	56
2003–04	89	26	115	60	55
2004–05	86	21	107	58	46
2005–06	82	23	105	59	46
2006–07	84	21	105	56	48
2007–08	89	19	108	54	53
2008–09	87	19	106	53	58
2009–10	92	20	112	52	56
2010–11	91	17	108	50	57
2011–12	82	22	104	48	20

Source: BITRE (2013a).

**Table T 7.9b** Summary of the Australian trading fleet—deadweight (tonnes)

Financial year	Vessel capacity		Total Australian trading fleet	Flag	
	Major trading fleet (greater than 2000 dwt)	Other (minor) trading ships (greater than 150 gross registered tonnage and less than or equal to 2000 dwt)		Total Australian registered	Total Overseas registered
2001–02	3 473 723	12 811	3 486 534	1 734 477	1 752 057
2002–03	3 457 486	14 622	3 472 108	1 580 392	1 891 716
2003–04	3 731 527	15 212	3 746 739	1 607 609	2 139 130
2004–05	3 302 358	12 917	3 315 275	1 464 396	1 850 879
2005–06	3 026 081	14 576	3 040 657	1 370 386	1 670 271
2006–07	3 214 782	14 225	3 229 007	1 371 980	1 857 027
2007–08	3 467 238	13 175	3 480 413	1 233 554	2 246 859
2008–09	3 250 209	11 813	3 262 022	1 162 610	2 099 412
2009–10	3 674 997	13 611	3 688 608	1 237 731	2 450 877
2010–11	3 592 675	10 959	3 603 634	1 081 495	2 522 139
2011–12	3 524 996	15 515	3 540 511	931 106	2 609 405

Source: BITRE (2013a).

**Table T 7.9c** Summary of the Australian trading fleet—gross tonnage (tonnes)

Financial year	Vessel capacity		Total Australian trading fleet	Total Australian registered	Flag Total Overseas registered
	Major trading fleet (greater than 2000 dwt)	Other (minor) trading ships (greater than 150 gross registered tonnage and less than or equal to 2000 dwt)			
2001–02	2 515 439	19 186	2 534 625	1 421 136	1 113 489
2002–03	2 438 734	28 565	2 467 299	1 275 626	1 191 673
2003–04	2 703 809	36 736	2 740 545	1 379 775	1 360 770
2004–05	2 446 408	25 250	2 471 658	1 307 557	1 164 101
2005–06	2 346 281	22 776	2 369 057	1 253 895	1 115 162
2006–07	2 485 101	24 467	2 509 568	1 231 762	1 277 806
2007–08	2 681 141	23 686	2 704 827	1 145 751	1 559 076
2008–09	2 614 447	28 462	2 642 909	1 099 421	1 543 488
2009–10	2 901 860	25 438	2 927 298	1 125 834	1 801 464
2010–11	2 863 768	16 743	2 880 511	1 044 048	1 836 463
2011–12	2 781 497	26 700	2 808 197	945 252	1 862 945

Source: BITRE (2013a).

**Table T 7.9d** Summary of the Australian trading fleet—age distribution (percentage of total deadweight (tonnes))

Financial year	0–4 years	5–9 years	10–14 years	15–19 years	20+ years	Average age (years)
2001–02	7.8	24.2	26.9	31.9	9.2	16.0
2002–03	7.6	22.6	26.5	27.1	16.1	15.5
2003–04	9.3	21.8	24.7	25.8	18.4	14.8
2004–05	3.1	31.6	22.7	15.3	27.2	16.0
2005–06	3.4	16.9	37.3	15.5	26.9	17.2
2006–07	0.5	10.5	26.1	36.3	26.7	18.0
2007–08	13.5	8.2	22.4	36.4	19.6	17.0
2008–09	21.5	7.5	23.0	23.7	24.3	16.9
2009–10	23.7	4.6	23.5	22.5	25.7	16.8
2010–11	25.5	5.0	16.6	29.8	23.1	16.9
2011–12	21.7	6.9	13.2	23.8	34.2	16.7

Source: BITRE (2013a).

**Table T 7.10a** Ships in the major trading fleet—overseas trades, 2011–12—tankers

Name	Products	Ports called at	
		Australian	Overseas
Araluen Spirit / Hippo	Petroleum products	Cairns, Sydney, Townsville	Singapore, South Africa
Astrid	LPG	Brisbane, Cairns, Darwin, Gladstone, Port Kembla, Sydney, Townsville	Fiji, New Caledonia, New Zealand, Philippines
Boral Gas	LPG	Brisbane, Gladstone, Sydney, Townsville	Fiji, Papua New Guinea, Tonga
Botany Tribute	Liquid bulk	Brisbane, Geelong, Gladstone, Melbourne, Newcastle, Rockhampton, Sydney	Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Taiwan
Dapeng Moon	LNG	Dampier	China
Dapeng Sun	LNG	Dampier	China
Dapeng Star	LNG	Dampier	China, Singapore
Maea	LPG	Hastings, Port Kembla, Sydney	Fiji, New Caledonia, New Zealand, French Polynesia
Northwest Sanderling	LNG	Dampier	Japan
Northwest Sandpiper	LNG	Dampier	Japan, Republic of Korea, Singapore
Northwest Seaeagle	LNG	Dampier	Japan, Republic of Korea, Singapore
Northwest Shearwater	LNG	Dampier	Japan, Singapore
Northwest Snipe	LNG	Dampier	Japan
Northwest Stormpetrel	LNG	Dampier	Japan
Pacific Gas	LPG	Brisbane, Darwin, Gladstone, Hastings, Hobart, Sydney	Fiji, Papua New Guinea, Tonga, Samoa
Sirius	Petroleum products	Fremantle, Melbourne	Malaysia, Singapore
Victoire	LPG	Brisbane, Hastings, Sydney	Fiji, New Caledonia, New Zealand, French Polynesia

Source: BITRE (2013a).

**Table T 7.10b** Ships in the major trading fleet—overseas trades, 2011–12—bulk carriers

Name	Products	Ports called at	
		Australian	Overseas
Cape Mary	Coal, dry bulk	Newcastle	China, Japan
Frontier	Coal	Newcastle	Canary Islands
Goodwill	Coal, dry bulk	Gladstone, Newcastle	Canary Islands, Republic of Korea
Goonyella Trader	Coal	Gladstone, Hay Point	Netherlands, Singapore
Orana	Timber products	Bell Bay, Hobart, Portland	China, Singapore
Pacific Triangle	Iron ore, coal	Newcastle, Port Hedland, Port Kembla	Japan
Pioneer	Sugar	Mackay, Sydney	Singapore
POS Ambition	Coal, dry bulk	Gladstone, Hay Point	Spain, Gibraltar, Republic of Korea
Tian Du Feng	Iron ore, dry bulk	Geraldton, Hay Point, Weipa	China, Singapore, USA

Source: BITRE (2013a).

**Table T 7.10c** Ships in the major trading fleet—overseas trades, 2011–12—container carriers

Name	Products	Ports called at	
		Australian	Overseas
ANL Binburra	General cargo	Melbourne, Sydney	New Zealand
ANL Kokoda / Orient Spirit	General cargo	Brisbane	Republic of Korea, Papua New Guinea
ANL Wangaratta	General cargo	Brisbane, Melbourne, Sydney	Japan, Taiwan
ANL Wyong	General cargo	Brisbane, Melbourne, Sydney	Japan, Taiwan
OOCL New Zealand	General cargo	Adelaide, Brisbane, Fremantle, Melbourne, Sydney	Malaysia, Singapore

Source: BITRE (2013a).

**Table T 7.10d** Ships in the major trading fleet—overseas trades, 2011–12—livestock carriers

Name	Products	Ports called at	
		Australian	Overseas
Devon Express	Livestock	Broome, Darwin, Fremantle, Port Hedland, Portland, Townsville, Wyndham	China, Indonesia, Israel, Phillipines, Singapore
Hereford Express	Livestock	Broome, Fremantle	Indonesia, Mauritius, Malaysia, Singapore
Maysora	Livestock	Adelaide, Fremantle	Egypt, Israel, Jordan, Saudi Arabia
Torrens	Livestock	Darwin, Fremantle, Portland	China, Indonesia, Pakistan, Singapore

Source: BITRE (2013a).

**Table T 7.10e** Ships in the major trading fleet—overseas trades, 2011–12—general cargo ships

Name	Products	Ports called at	
		Australian	Overseas
Danny Rose	General cargo	Adelaide, Port Kembla, Thevenard	Fiji
Green Water	General cargo	Cairns	Singapore
Hector / Red Resource	General Cargo	Dampier, Darwin, Fremantle, Geraldton, Gove, Port Hedland	Indonesia, India, Malaysia, Singapore, Thailand
Nine Eagle	General cargo	Broome, Cairns, Darwin, Karumba	Brisbane, Indonesia, Malaysia, Singapore
Norfolk Guardian	General cargo	Brisbane, Mackay, Yamba	New Zealand
Opal Harmony	General cargo	Dampier, Darwin, Esperance, Fremantle, Port Hedland	China
Pacific Guardian	General cargo	Brisbane, Bunbury, Fremantle, Geraldton, Gladstone, Melbourne, Newcastle, Townsville, Yamba	Malaysia, New Zealand, Singapore, Thailand

Source: BITRE (2013a).



**Table T 7.1 Ia** Ships in the major trading fleet—coastal trades, 2011–12—tankers

Name	Products	Ports called at	
		Australian	Overseas
Alexander Spirit	Petroleum products	Brisbane, Cairns, Devonport, Gladstone, Hobart, Mackay, Melbourne, Sydney, Townsville	
British Loyalty	Petroleum products	Adelaide, Brisbane, Geelong, Gladstone, Hobart, Mackay, Melbourne, Newcastle, Sydney, Townsville	
Maea	LPG	Brisbane, Cairns, Devonport, Gladstone, Hastings, Hobart, Sydney, Townsville	Fiji, New Caledonia, New Zealand, Papua New Guinea
Zemira	Petroleum products	Geelong, Melbourne, Sydney	

Source: BITRE (2013a).

**Table T 7.1 Ib** Ships in the major trading fleet—coastal trades, 2011–12—bulk carriers

Name	Products	Ports called at	
		Australian	Overseas
Aburri	Metal concentrates	Bing Bong	
CSL Atlantic	Cement, coal, gypsum	Adelaide, Ardrossan, Brisbane, Bundaberg, Geelong, Gladstone, Mackay, Melbourne, Newcastle, Port Kembla, Portland, Sydney, Thevenard, Townsville, Whyalla	Papua New Guinea
CSL Brisbane	Alumina, cement, gypsum	Adelaide, Bell Bay, Brisbane, Bunbury, Fremantle, Geelong, Geraldton, Gladstone, Melbourne, Port Kembla, Portland, Sydney, Thevenard, Townsville, Whyalla	New Caledonia
CSL Melbourne	Dry bulk	Gladstone, Newcastle, Townsville	Republic of Korea
CSL Pacific	Cement, coal, gypsum	Adelaide, Ardrossan, Brisbane, Bunbury, Devonport, Fremantle, Geelong, Geraldton, Gladstone, Melbourne, Portland, Sydney, Thevenard, Whyalla	
CSL Sams	Limestone	Adelaide, Brisbane, Gladstone	China, New Caledonia
CSL Thevenard	Cement	Adelaide, Ardrossan, Brisbane, Fremantle, Geelong, Geraldton, Gladstone, Melbourne, Port Kembla, Portland, Sydney, Thevenard	
Goliath	Cement	Adelaide, Devonport, Melbourne, Newcastle, Sydney	
Iron Chieftain	Iron ore, coal	Ardrossan, Gladstone, Port Kembla, Port Latta, Whyalla	
Iron Yandi	Iron ore, coal	Port Hedland, Port Kembla, Whyalla	China, Singapore
Lindesay Clark	Alumina, gypsum	Bunbury, Esperance, Fremantle, Geelong, Melbourne, Portland	
River Boyne	Bauxite	Brisbane, Gladstone, Sydney, Weipa	
River Embley	Bauxite	Gladstone, Weipa	Singapore
RTM Gladstone	Bauxite	Gladstone, Weipa	China
RTM Piiramu	Bauxite	Gladstone, Weipa	China, Vietnam
RTM Twarra	Bauxite	Brisbane, Gladston, Sydney, Weipa	
RTM Wakmatha	Bauxite	Gladstone, Weipa	China, Phillipines
RTM Weipa	Bauxite	Gladstone, Weipa	China, Phillipines
Stadacona	Dry bulk	Adelaide, Brisbane, Bunbury, Fremantle, Geraldton, Gladstone, Melbourne, Port Kembla, Portland, Thevenard, Townsville	New Caledonia, Taiwan

Source: BITRE (2013a).

**Table T 7.1 Ic** Ships in the major trading fleet—coastal trades, 2011–12—general cargo

Name	Products	Ports called at	
		Australian	Overseas
Accolade II	Limestone	Adelaide, Klein Point	
Antung / Scarlett Lucy	General cargo	Brisbane, Darwin, Melbourne	Singapore
Aurora Australis	General cargo	Brisbane, Fremantle, Hobart, Sydney	New Zealand
Hakula	General cargo	Adelaide, Bell Bay, Brisbane, Burnie, Devonport, Geelong, Hobart, Melbourne, Newcastle, Port Kembla, Port Pirie, Portland, Thevenard, Whyalla	New Zealand
Iron Monarch	General cargo	Hastings, Port Kembla	Singapore
Kimberley Queen	General cargo	Broome, Dampier, Fremantle, Port Hedland, Wyndham	Singapore
Melville Bay	General cargo	Darwin	
Newcastle Bay	General cargo	Cairns, Weipa	
Searoad Mersey	General cargo	Devonport, Melbourne	
Searoad Tamar	General cargo	Devonport, Melbourne	
Spirit of Tasmania I	General cargo, passengers	Devonport, Melbourne, Sydney	
Spirit of Tasmania II	General cargo, passengers	Devonport, Melbourne	
Tasmanian Achiever	General cargo, passengers	Burnie, Devonport, Melbourne	
Trinity Bay	General cargo, passengers	Cairns	
Victorian Reliance	General cargo	Burnie, Melbourne	

Source: BITRE (2013a).

# CHAPTER 8

## Safety

**Table T 8.1a** Number of fatalities and fatality accidents by transport mode—accidents

Calendar year	Road	Rail	Marine	Aviation
1971				14
1972				23
1973				15
1974				17
1975				22
1976				27
1977				31
1978				34
1979				31
1980				32
1981				27
1982				35
1983				30
1984				32
1985				29
1986				29
1987				25
1988				35
1989	2 407			46
1990	2 050			44
1991	1 874			28
1992	1 736			38
1993	1 737			30
1994	1 702			35
1995	1 822			33
1996	1 768			29
1997	1 601			25
1998	1 573			31
1999	1 553			25
2000	1 628			24
2001	1 584		32	27
2002	1 525		40	19
2003	1 445		39	21
2004	1 444		44	21
2005	1 472		37	24
2006	1 452		40	24
2007	1 453		41	29
2008	1 315		37	27
2009	1 345		43	25
2010	1 233			19
2011	1 151			24
2012	1 198			26

Note: Data are not readily available for missing years.

Source: ATSB (2013b), BITRE (2013e), Infrastructure (2012) and NMSC (2010).

**Table T 8.1b** Number of fatalities and fatality accidents by transport mode—fatalities

Calendar year	Road	Rail	Marine	Aviation
1971	3 590			35
1972	3 422			52
1973	3 679			26
1974	3 572			39
1975	3 694			49
1976	3 583			58
1977	3 578			55
1978	3 705			65
1979	3 508	49		45
1980	3 272	56		64
1981	3 321	72		58
1982	3 252	72		60
1983	2 755	66		54
1984	2 822	76		48
1985	2 941	66		54
1986	2 888	66		54
1987	2 772	54		39
1988	2 887	64		67
1989	2 801	67		82
1990	2 331	76		80
1991	2 113	42		52
1992	1 974	61		63
1993	1 953	52		56
1994	1 928	43		62
1995	2 017	46		51
1996	1 970	30		51
1997	1 767	43		38
1998	1 755	43		56
1999	1 764	43		46
2000	1 817	38		44
2001	1 737	53	47	46
2002	1 715	40	50	34
2003	1 621	33	43	44
2004	1 583	33	50	34
2005	1 627	35	41	45
2006	1 598	39	49	40
2007	1 603	42	53	44
2008	1 437	31	41	43
2009	1 488	28	53	27
2010	1 352	29		24
2011	1 277	33		38
2012	1 310			39

Note: Data are not readily available for missing years.

Source: ATSB (2004), ATSB (2012a), ATSB (2013b), BITRE (2013e), Infrastructure (2012) and NMSC (2010).

**Table T 8.2a** Fatality rate and injury rate, by transport mode—fatality rate

Calendar year	Road	Rail		Marine	Aviation
		<i>deaths per 100 000 population</i>			
1971	27.47				0.27
1972	25.72				0.39
1973	27.24				0.19
1974	26.03				0.28
1975	26.59				0.35
1976	25.53				0.41
1977	25.21				0.39
1978	25.80				0.45
1979	24.17	0.34			0.31
1980	22.27	0.38			0.44
1981	22.25	0.48			0.39
1982	21.42	0.47			0.40
1983	17.90	0.43			0.35
1984	18.11	0.49			0.31
1985	18.63	0.42			0.34
1986	18.03	0.41			0.34
1987	17.04	0.33			0.24
1988	17.46	0.39			0.41
1989	16.66	0.40			0.49
1990	13.66	0.45			0.47
1991	12.23	0.24			0.30
1992	11.28	0.35			0.36
1993	11.05	0.29			0.32
1994	10.80	0.24			0.35
1995	11.16	0.25			0.28
1996	10.76	0.16			0.28
1997	9.54	0.23			0.21
1998	9.38	0.23			0.30
1999	9.32	0.23			0.24
2000	9.49	0.20			0.23
2001	8.95	0.27		0.24	0.24
2002	8.73	0.20		0.25	0.17
2003	8.15	0.17		0.22	0.22
2004	7.87	0.16		0.25	0.17
2005	7.98	0.17		0.20	0.22
2006	7.72	0.19		0.24	0.19
2007	7.61	0.20		0.25	0.21
2008	6.68	0.14		0.19	0.20
2009	6.78	0.13		0.24	0.12
2010	6.06	0.13			0.11
2011	5.72	0.15			0.17
2012	5.78				0.17

Note: Data are not readily available for missing years.

Source: ABS (2013d), ATSB (2012a), ATSB (2013b), BITRE (2013e) and NMSC (2010)

**Table T 8.2b** Fatality rate and injury rate, by transport mode—injury rate

Calendar year	Road <sup>22</sup>	Rail	Marine	Aviation
	<i>serious injuries per 100 000 population</i>			
1971				0.18
1972				0.15
1973				0.17
1974				0.17
1975				0.19
1976				0.35
1977				0.36
1978				0.34
1979				0.34
1980				0.28
1981				0.33
1982				0.28
1983				0.29
1984				0.24
1985				0.23
1986				0.22
1987				0.36
1988				0.27
1989	254.97			0.45
1990	215.48			0.36
1991	188.51			0.23
1992	176.76			0.22
1993	176.43			0.33
1994	186.85			0.17
1995	190.13			0.27
1996	184.09			0.18
1997	175.98			0.16
1998				0.12
1999				0.11
2000				0.22
2001	<sup>23</sup> 137.52	0.43	0.45	0.16
2002	144.74	0.50	0.59	0.13
2003	138.37	0.26	0.40	0.13
2004	143.02	0.35	0.62	0.11
2005	146.38	0.35	0.67	0.03
2006	150.78	0.65	0.78	0.07
2007	155.56	0.87	0.61	0.08
2008	151.39	0.53	0.72	0.20
2009	155.43	0.41	0.45	0.09
2010		0.17		0.14
2011		0.30		0.17
2012				0.17

**22, 23** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013d), AIHW (2009) & updates, ATSB (2012a), ATSB (2013b), BITRE (2013e), Infrastructure (2012) and NMSC (2010).

**Table T 8.3a** Fatality rate and injury rate by transport mode—fatality rate

Calendar year	Road	Rail	Aviation
	<i>deaths per billion passenger km travelled</i>		
1971	29.69		6.17
1972	26.69		8.63
1973	27.58		4.03
1974	25.10		5.08
1975	24.87		5.92
1976	23.26		6.99
1977	22.15		6.88
1978	22.18		7.30
1979	20.46	5.77	4.79
1980	18.99	6.35	6.18
1981	18.92	7.78	5.42
1982	17.72	7.97	5.38
1983	14.89	7.43	5.26
1984	14.51	8.60	4.51
1985	14.50	7.43	4.76
1986	13.81	7.26	4.37
1987	12.96	5.77	2.96
1988	12.88	6.58	4.63
1989	11.93	6.70	5.44
1990	9.66	7.57	7.11
1991	8.80	4.13	3.26
1992	8.10	6.10	3.05
1993	7.80	5.32	2.67
1994	7.52	4.35	2.55
1995	7.64	4.45	1.90
1996	7.34	2.84	1.77
1997	6.55	3.96	1.27
1998	6.43	3.98	1.85
1999	6.33	3.90	1.49
2000	6.40	3.34	1.35
2001	6.16	4.42	1.30
2002	5.93	3.38	1.04
2003	5.47	2.79	1.24
2004	5.12	2.77	0.83
2005	5.24	2.95	0.99
2006	5.21	3.15	0.83
2007	5.15	3.23	0.84
2008	4.56	2.22	0.76
2009	4.72	1.90	0.47
2010	4.23	1.97	0.40
2011	3.94	2.21	0.60
2012	4.00		0.60

Note: Data are not readily available for missing years.

Source: ATSB (2012a), ATSB (2013b), BITRE (2013e), BTRE (2007) and BITRE estimates.

**Table T 8.3b** Fatality rate and injury rate by transport mode—injury rate

Calendar year	Road <sup>22</sup> <i>serious injuries per billion passenger km travelled</i>	Rail	Aviation
1971			4.23
1972			3.32
1973			3.57
1974			3.00
1975			3.26
1976			5.91
1977			6.38
1978			5.51
1979			5.32
1980			3.96
1981			4.58
1982			3.86
1983			4.38
1984			3.48
1985			3.18
1986			2.84
1987			4.41
1988			3.04
1989	182.56		4.98
1990	152.39		5.42
1991	135.66		2.45
1992	126.82		1.84
1993	124.44		2.77
1994	130.15		1.27
1995	130.07		1.79
1996	125.63		1.14
1997	120.77		0.97
1998			0.73
1999			0.65
2000			1.28
2001	<sup>23</sup> 94.66	6.93	0.87
2002	98.38	8.29	0.79
2003	92.83	4.32	0.73
2004	93.03	5.96	0.56
2005	96.18	6.07	0.15
2006	101.77	10.92	0.31
2007	105.29	14.09	0.32
2008	103.32	8.15	0.74
2009	108.15	6.17	0.33
2010		2.58	0.54
2011		4.42	0.57
2012			0.00

<sup>22, 23</sup> See end notes.

Note: Data are not readily available for missing years.

Source: AIHW (2009) & updates, AwTSB (2012a), ATSB (2013b), BITRE (2013e), BTRE (2007) and BITRE estimates.



**Table T 8.4a** Number of road accidents and casualties by accident severity—  
accidents

Calendar year	Fatal	Serious injuries <sup>22</sup>
1989	2 407	22 158
1990	2 050	20 014
1991	1 874	17 844
1992	1 736	17 108
1993	1 737	17 164
1994	1 702	17 560
1995	1 822	17 803
1996	1 768	17 505
1997	1 601	17 150
1998	1 573	
1999	1 553	
2000	1 628	
2001	1 584	
2002	1 525	
2003	1 445	
2004	1 444	
2005	1 472	
2006	1 452	
2007	1 453	
2008	1 315	
2009	1 345	
2010	1 233	
2011	1 151	
2012	1 198	

<sup>22</sup> See end notes.

Note: Data are not readily available for missing years.

Source: BITRE (2013e), Infrastructure (2012)

**Table T 8.4b** Number of road accidents and casualties by accident severity—  
casualties

Calendar year	Fatal	Serious injuries <sup>22</sup>
1971	3 590	
1972	3 422	
1973	3 679	
1974	3 572	
1975	3 694	
1976	3 583	
1977	3 578	
1978	3 705	
1979	3 508	
1980	3 272	
1981	3 321	
1982	3 252	
1983	2 755	
1984	2 822	
1985	2 941	
1986	2 888	
1987	2 772	
1988	2 887	
1989	2 801	42 872
1990	2 331	36 772
1991	2 113	32 583
1992	1 974	30 924
1993	1 953	31 170
1994	1 928	33 356
1995	2 017	34 354
1996	1 970	33 703
1997	1 767	32 583
1998	1 755	
1999	1 764	
2000	1 817	
2001	1 737	<sup>23</sup> 26 694
2002	1 715	28 440
2003	1 621	27 526
2004	1 583	28 782
2005	1 627	29 850
2006	1 598	31 204
2007	1 603	32 777
2008	1 437	32 543
2009	1 488	34 116
2010	1 352	
2011	1 277	
2012	1 310	

<sup>22, 23</sup> See end notes.

Note: Data are not readily available for missing years.

Source: AIHW (2009) &amp; updates, BITRE (2013e), Infrastructure (2012).

**Table T 8.5a** Road accident rate and casualty rate, by accident severity—accident rate

Calendar year	Fatal <i>accidents per 100,000 population</i>	Serious injuries <sup>22</sup>
1989	14.32	140.34
1990	12.01	124.94
1991	10.84	109.72
1992	9.92	103.48
1993	9.83	102.08
1994	9.53	102.90
1995	10.08	103.00
1996	9.66	100.06
1997	8.65	97.07
1998	8.41	
1999	8.21	
2000	8.50	
2001	8.16	
2002	7.76	
2003	7.26	
2004	7.18	
2005	7.22	
2006	7.02	
2007	6.90	
2008	6.15	
2009	6.18	
2010	5.59	
2011	5.16	
2012	5.28	

<sup>22</sup> See end notes

Note: Data are not readily available for missing years.

Source: ABS (2013d), BITRE (2013e), Infrastructure (2012)

**Table T 8.5b** Road accident rate and casualty rate, by accident severity—casualty rate

Calendar year	Fatal <i>casualties per 100,000 population</i>	Serious injuries <sup>22</sup>
1971	27.47	
1972	25.72	
1973	27.24	
1974	26.03	
1975	26.59	
1976	25.53	
1977	25.21	
1978	25.80	
1979	24.17	
1980	22.27	
1981	22.25	
1982	21.42	
1983	17.90	
1984	18.11	
1985	18.63	
1986	18.03	
1987	17.04	
1988	17.46	
1989	16.66	263.60
1990	13.66	222.43
1991	12.23	193.78
1992	11.28	181.21
1993	11.05	180.34
1994	10.80	190.66
1995	11.16	194.45
1996	10.76	188.79
1997	9.54	180.33
1998	9.38	
1999	9.32	
2000	9.49	
2001	8.95	<sup>23</sup> 137.52
2002	8.73	144.74
2003	8.15	138.37
2004	7.87	143.02
2005	7.98	146.38
2006	7.72	150.78
2007	7.61	155.56
2008	6.68	151.39
2009	6.78	155.43
2010	6.06	
2011	5.72	
2012	5.78	

<sup>22, 23</sup> See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013d), AIHW (2009) & updates, BITRE (2013e), Infrastructure (2012).

**Table T 8.6a** Number of fatal road accidents and fatalities, by state/territory—  
accidents

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
1989	784	681	376	201	214	68	57	26	2 407
1990	702	492	347	187	181	63	54	24	2 050
1991	585	435	359	166	187	66	60	16	1 874
1992	576	365	363	142	171	59	42	18	1 736
1993	518	381	357	191	191	47	41	11	1 737
1994	552	345	364	143	195	52	36	15	1 702
1995	563	371	408	163	194	53	56	14	1 822
1996	538	382	338	162	220	53	58	17	1 768
1997	525	346	321	123	184	29	56	17	1 601
1998	491	348	257	152	199	47	59	20	1 573
1999	506	345	273	132	189	47	44	17	1 553
2000	543	373	275	151	184	38	48	16	1 628
2001	486	404	296	137	151	52	43	15	1 584
2002	501	361	283	138	159	35	40	8	1 525
2003	483	294	284	136	155	39	44	10	1 445
2004	458	312	289	128	162	52	34	9	1 444
2005	459	314	296	127	151	49	51	25	1 472
2006	449	309	313	104	181	43	41	12	1 452
2007	405	289	338	107	214	39	47	14	1 453
2008	353	278	294	87	185	37	67	14	1 315
2009	408	268	296	104	176	52	30	11	1 345
2010	365	260	236	105	176	29	46	16	1 233
2011	336	259	227	95	168	23	37	6	1 151
2012	341	261	255	86	173	31	39	12	1 198

Source: BITRE (2013e).

**Table T 8.6b** Number of fatal road accidents and fatalities, by state/territory—  
fatalities

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
1971	1 249	923	594	292	332	130	50	20	3 590
1972	1 092	915	572	312	340	106	53	32	3 422
1973	1 230	935	638	329	358	105	55	29	3 679
1974	1 275	806	589	382	334	111	44	31	3 572
1975	1 288	910	635	339	304	122	64	32	3 694
1976	1 264	938	569	307	308	108	51	38	3 583
1977	1 268	954	572	306	290	112	47	29	3 578
1978	1 384	869	612	291	345	106	68	30	3 705
1979	1 288	846	616	309	279	93	53	24	3 508
1980	1 303	657	557	269	293	100	63	30	3 272
1981	1 291	766	594	222	238	111	70	29	3 321
1982	1 253	709	602	270	236	96	60	26	3 252
1983	966	664	510	266	203	70	48	28	2 755
1984	1 037	657	505	232	221	83	50	37	2 822
1985	1 067	683	502	268	243	78	67	33	2 941
1986	1 029	668	481	288	228	91	71	32	2 888
1987	959	705	442	256	213	77	84	36	2 772
1988	1 037	701	539	223	230	75	51	31	2 887
1989	960	776	428	222	242	80	61	32	2 801
1990	797	548	399	226	196	71	68	26	2 331
1991	663	503	395	184	207	77	67	17	2 113
1992	649	396	416	165	200	74	54	20	1 974
1993	581	435	396	218	209	58	44	12	1 953
1994	646	377	418	159	211	59	41	17	1 928
1995	620	418	456	181	209	57	61	15	2 017
1996	581	417	385	181	247	64	72	23	1 970
1997	576	377	360	148	197	32	60	17	1 767
1998	556	390	279	168	223	48	69	22	1 755
1999	577	383	314	151	218	53	49	19	1 764
2000	603	407	317	166	212	43	51	18	1 817
2001	524	444	324	153	165	61	50	16	1 737
2002	561	397	322	154	179	37	55	10	1 715
2003	539	330	310	157	180	41	53	11	1 621
2004	510	343	311	139	178	58	35	9	1 583
2005	508	346	330	148	163	51	55	26	1 627
2006	496	337	335	117	200	55	45	13	1 598
2007	435	332	360	124	235	45	58	14	1 603
2008	374	303	328	99	205	39	75	14	1 437
2009	453	290	331	119	190	63	30	12	1 488
2010	405	288	249	118	193	31	49	19	1 352
2011	364	287	269	103	180	24	44	6	1 277
2012	376	282	280	94	185	33	48	12	1 310

Source: BITRE (2013e)

**Table T 8.7a** Fatal road accident rate and fatality rate, by state/territory—accident rate

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>fatal accidents per 100 000 population</i>								
1989	13.57	15.76	13.30	14.16	13.56	14.94	35.36	9.41	14.32
1990	12.03	11.24	11.97	13.06	11.22	13.63	32.98	8.50	12.01
1991	9.92	9.84	12.12	11.48	11.43	14.14	36.26	5.53	10.84
1992	9.66	8.19	11.98	9.75	10.31	12.56	24.99	6.11	9.92
1993	8.63	8.52	11.48	13.08	11.38	9.96	24.01	3.68	9.83
1994	9.11	7.69	11.42	9.75	11.45	11.00	20.76	4.98	9.53
1995	9.19	8.21	12.50	11.09	11.19	11.19	31.54	4.59	10.08
1996	8.67	8.38	10.12	10.99	12.46	11.17	31.90	5.51	9.66
1997	8.36	7.53	9.46	8.30	10.25	6.12	29.96	5.50	8.65
1998	7.75	7.50	7.45	10.20	10.92	9.96	31.07	6.45	8.41
1999	7.89	7.36	7.80	8.81	10.22	9.97	22.83	5.44	8.21
2000	8.37	7.87	7.72	10.03	9.82	8.06	24.54	5.08	8.50
2001	7.39	8.41	8.16	9.06	7.94	11.02	21.74	4.70	8.16
2002	7.56	7.42	7.62	9.07	8.25	7.40	20.06	2.48	7.76
2003	7.24	5.97	7.46	8.88	7.94	8.17	21.99	3.07	7.26
2004	6.83	6.26	7.41	8.31	8.17	10.77	16.83	2.75	7.18
2005	6.79	6.22	7.41	8.18	7.49	10.08	24.71	7.57	7.22
2006	6.59	6.03	7.65	6.63	8.79	8.78	19.47	3.59	7.02
2007	5.87	5.54	8.06	6.75	10.13	7.91	21.88	4.10	6.90
2008	5.03	5.22	6.82	5.42	8.50	7.43	30.39	4.04	6.12
2009	5.72	4.92	6.69	6.40	7.84	10.33	13.26	3.12	6.13
2010	5.06	4.70	5.24	6.39	7.67	5.72	20.05	4.46	5.53
2011	4.66	4.68	5.07	5.80	7.14	4.50	15.99	1.63	5.16
2012	4.68	4.64	5.59	5.20	7.12	6.05	16.61	3.20	5.28

Source: ABS (2013d), BITRE (2013e).

**Table T 8.7b** Fatal road accident rate and fatality rate, by state/territory—fatality rate

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	<i>fatalities per 100 000 population</i>								
1971	26.43	25.63	32.08	24.33	31.50	32.66	58.32	13.23	27.47
1972	22.77	24.99	30.13	25.69	31.42	26.48	57.56	20.03	25.72
1973	25.40	25.22	32.69	26.78	32.51	26.05	56.63	16.73	27.24
1974	26.05	21.46	29.33	30.77	29.62	27.33	42.75	16.65	26.03
1975	26.12	24.03	30.96	26.79	26.32	29.75	68.91	16.08	26.59
1976	25.49	24.62	27.19	24.10	26.14	26.19	51.92	18.29	25.53
1977	25.35	24.86	26.86	23.79	24.08	26.99	45.22	13.57	25.21
1978	27.39	22.49	28.18	22.45	28.10	25.38	61.83	13.76	25.80
1979	25.20	21.77	27.81	23.75	22.38	22.10	46.43	10.87	24.17
1980	25.20	16.78	24.58	20.56	23.09	23.61	53.28	13.38	22.27
1981	24.66	19.41	25.33	16.83	18.31	25.98	57.09	12.74	22.25
1982	23.63	17.76	24.83	20.28	17.63	22.33	46.04	11.16	21.42
1983	18.05	16.45	20.55	19.77	14.83	16.17	35.32	11.72	17.90
1984	19.19	16.12	20.01	17.06	15.89	18.96	35.17	15.10	18.11
1985	19.53	16.58	19.52	19.54	17.13	17.61	45.11	13.13	18.63
1986	18.60	16.05	18.33	20.83	15.63	20.38	45.98	12.36	18.03
1987	17.07	16.75	16.52	18.38	14.24	17.14	53.10	13.56	17.04
1988	18.17	16.45	19.67	15.87	14.98	16.62	32.07	11.39	17.46
1989	16.62	17.96	15.14	15.64	15.33	17.57	37.85	11.58	16.66
1990	13.66	12.52	13.76	15.78	12.15	15.36	41.53	9.21	13.66
1991	11.24	11.38	13.34	12.72	12.65	16.50	40.49	5.88	12.23
1992	10.88	8.89	13.73	11.33	12.06	15.75	32.13	6.79	11.28
1993	9.68	9.73	12.73	14.92	12.46	12.30	25.77	4.01	11.05
1994	10.66	8.40	13.12	10.84	12.39	12.48	23.65	5.64	10.80
1995	10.12	9.25	13.97	12.32	12.05	12.03	34.36	4.92	11.16
1996	9.36	9.14	11.53	12.28	13.99	13.49	39.59	7.46	10.76
1997	9.18	8.20	10.60	9.99	10.97	6.76	32.10	5.50	9.54
1998	8.77	8.41	8.09	11.28	12.23	10.17	36.34	7.10	9.38
1999	9.00	8.17	8.97	10.08	11.79	11.24	25.42	6.08	9.32
2000	9.30	8.58	8.90	11.03	11.31	9.12	26.08	5.71	9.49
2001	7.97	9.24	8.93	10.12	8.68	12.93	25.28	5.01	8.95
2002	8.46	8.16	8.67	10.12	9.29	7.83	27.58	3.10	8.73
2003	8.08	6.70	8.14	10.25	9.22	8.58	26.49	3.38	8.15
2004	7.60	6.89	7.97	9.02	8.98	12.01	17.32	2.75	7.87
2005	7.52	6.85	8.26	9.53	8.08	10.49	26.65	7.87	7.98
2006	7.28	6.57	8.19	7.46	9.71	11.23	21.36	3.89	7.72
2007	6.30	6.36	8.58	7.82	11.12	9.12	27.00	4.10	7.61
2008	5.33	5.69	7.61	6.17	9.42	7.83	34.01	4.04	6.68
2009	6.36	5.32	7.48	7.33	8.47	12.52	13.26	3.41	6.78
2010	5.61	5.20	5.53	7.18	8.42	6.11	21.35	5.29	6.06
2011	5.05	5.19	6.01	6.29	7.65	4.69	19.02	1.63	5.72
2012	5.16	5.01	6.14	5.68	7.61	6.45	20.44	3.20	5.78

Source: ABS (2013d), BITRE (2013e).



**Table T 8.8a** Number of road accidents involving serious injuries, by state/territory—accidents involving serious injuries but no fatalities

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
1989	6 493	7 270	3 079	1 930	2 312	542	350	182	22 158
1990	6 092	5 759	3 123	1 926	2 073	477	387	177	20 014
1991	5 473	4 967	2 926	1 567	2 002	424	306	179	17 844
1992	5 135	4 768	3 199	1 227	1 952	377	295	155	17 108
1993	5 132	4 830	3 186	1 189	1 984	385	315	143	17 164
1994	5 024	4 858	3 598	1 184	2 027	404	304	161	17 560
1995	4 927	4 934	3 630	1 186	2 259	408	313	146	17 803
1996	4 887	4 834	3 551	1 309	2 041	348	334	201	17 505
1997	4 954	4 671	3 327	1 168	2 219	328	310	173	17 150
1998		5 093	3 517	1 223	2 266	359	324	162	
1999		4 957	3 565	1 239	1 881	363	325	133	
2000		5 187	3 810	1 215	1 665	399	316	130	

Note: Data are not readily available for missing years.

Source: Infrastructure (2012).

**Table T 8.8b** Number of road accidents involving serious injuries, by state/territory—serious injuries<sup>b,22</sup>

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
1989	10 384	19 416	4 519	2 884	3 434	1 133	835	267	42 872
1990	9 435	14 902	4 534	2 829	2 948	1 236	633	255	36 772
1991	8 385	12 942	4 245	2 375	2 860	1 037	496	243	32 583
1992	7 801	12 318	4 583	1 802	2 797	975	443	205	30 924
1993	7 893	12 225	4 661	1 767	2 905	1 015	503	201	31 170
1994	7 520	12 570	5 313	1 754	4 484	1 022	463	230	33 356
1995	7 690	12 879	5 373	1 771	4 917	1 052	463	209	34 354
1996	7 448	12 820	5 319	2 070	4 476	791	548	231	33 703
1997	7 264	12 149	4 872	1 788	4 981	776	501	252	32 583
1998		13 287	5 139	1 840	5 018	831	535	247	
1999		12 741	5 231	2 567	4 155	865	539	159	
2000		13 203	5 501	2 497	3 633	923	506	147	
2000–01 <sup>23</sup>									26 694
2001–02									28 440
2002–03									27 526
2003–04	9 243	7 834	5 376	2 271	2 293	602	328	431	28 782
2004–05	9 393	8 196	5 874	2 348	2 221	640	361	392	29 850
2005–06	10 108	8 235	5 986	2 454	2 347	736	492	406	31 204
2006–07	10 296	8 551	6 542	2 723	2 411	739	539	498	32 777
2007–08	9 466	8 849	6 717	2 840	2 475	714	568	511	32 543
2008–09	10 050	8 818	7 170	3 152	2 445	775	613	513	34 116

<sup>b</sup> Includes non-fatal serious injuries that were sustained in an accident that involved a fatality.

<sup>22, 23</sup> See end notes.

Note: Data are not readily available for missing years.

Source: AIHW (2009) & updates, Infrastructure (2012)

**Table T 8.9a** Road accident rate and serious injury rate, by state/territory—  
accident rate

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
<i>serious injury accidents per 100 000 population</i>									
1989	112.41	168.28	108.89	136.01	146.47	119.05	217.15	65.84	131.78
1990	104.42	131.53	107.72	134.49	128.51	103.20	236.37	62.72	117.28
1991	92.78	112.37	98.82	108.35	122.37	90.83	184.90	61.87	103.24
1992	86.12	107.03	105.58	84.24	117.73	80.24	175.51	52.60	97.79
1993	85.46	108.00	102.45	81.40	118.26	81.63	184.50	47.78	97.15
1994	82.90	108.25	112.89	80.76	119.02	85.42	175.34	53.40	98.37
1995	80.41	109.22	111.18	80.71	130.29	86.14	176.29	47.90	98.53
1996	78.76	106.01	106.36	88.79	115.62	73.35	183.67	65.21	95.62
1997	78.92	101.61	98.01	78.85	123.62	69.26	165.85	55.98	92.63
1998		109.81	102.01	82.11	124.32	76.06	170.63	52.28	
1999		105.77	101.82	82.72	101.69	77.00	168.63	42.58	
2000		109.40	106.98	80.73	88.83	84.64	161.59	41.24	

Note: Data are not readily available for missing years.

Source: ABS (2013d), Infrastructure (2012)

**Table T 8.9b** Road accident rate and serious injury rate, by state/territory—  
injury rate<sup>22</sup>

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
<i>serious injuries per 100 000 population</i>									
1989	179.77	449.43	159.82	203.24	217.56	248.87	518.06	96.59	254.97
1990	161.72	340.34	156.38	197.55	182.76	267.42	386.62	90.36	215.48
1991	142.15	292.78	143.37	164.21	174.81	222.15	299.71	83.99	188.51
1992	130.83	276.50	151.26	123.72	168.69	207.52	263.56	69.57	176.76
1993	131.44	273.34	149.88	120.97	173.16	215.20	294.61	67.16	176.43
1994	124.09	280.11	166.70	119.63	263.30	216.10	267.05	76.29	186.85
1995	125.51	285.10	164.56	120.52	283.60	222.09	260.77	68.57	190.13
1996	120.04	281.13	159.31	140.41	253.56	166.72	301.36	74.94	184.09
1997	115.72	264.27	143.52	120.70	277.49	163.85	268.04	81.54	175.98
1998		286.49	149.05	123.53	275.31	176.07	281.76	79.71	
1999		271.87	149.40	171.38	224.63	183.48	279.66	50.91	
2000		278.47	154.46	165.91	193.82	195.80	258.74	46.63	
2000–01 <sup>23</sup>	130.76	157.39	127.48	149.23	105.62	130.57	219.95	72.34	137.52
2001–02	136.16	169.58	139.36	145.68	107.06	118.87	228.17	90.80	144.74
2002–03	127.21	163.54	133.10	150.07	102.45	119.54	221.95	74.62	138.37
2003–04	137.81	157.26	137.81	148.85	114.54	124.70	213.30	100.16	143.02
2004–05	139.02	162.34	147.04	143.06	116.41	131.60	189.95	109.34	146.38
2005–06	148.30	160.63	146.32	149.69	119.16	150.22	192.76	147.25	150.78
2006–07	149.11	163.77	155.91	152.04	128.87	149.84	231.84	158.04	155.56
2007–08	134.94	166.12	155.90	154.30	130.46	143.40	231.74	164.02	151.39
2008–09	141.01	161.90	162.04	150.51	140.44	153.99	226.78	174.01	155.43

<sup>22, 23</sup> See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013d), AIHW (2009) & updates, Infrastructure (2012).

**Table T 8.10** Number of rail casualties, by severity

Calendar year	Fatal	Serious injuries
1979	49	
1980	56	
1981	72	
1982	72	
1983	66	
1984	76	
1985	66	
1986	66	
1987	54	
1988	64	
1989	67	
1990	76	
1991	42	
1992	61	
1993	52	
1994	43	
1995	46	
1996	30	
1997	43	
1998	43	
1999	43	
2000	38	
2001	53	83
2002	40	98
2003	33	51
2004	33	71
2005	35	72
2006	39	135
2007	42	183
2008	31	114
2009	28	91
2010	29	38
2011	34	84

Note: Data are not readily available for missing years.

Note: Serious injury data from NSW are not included.

Source: ATSB (2004), ATSB (2012a).

**Table T 8.11** Number of rail fatalities, by state/territory

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT 24	Total
2001	34	10	5	2	2	0	0	0	53
2002	16	14	3	4	2	0	1	0	40
2003	18	10	3	0	2	0	0	0	33
2004	15	12	2	2	1	0	1	0	33
2005	11	14	6	4	0	0	0	0	35
2006	9	14	9	2	4	1	0	0	39
2007	8	23	3	5	3	0	0	0	42
2008	7	17	6	1	0	0	0	0	31
2009	5	15	3	2	2	0	1	0	28
2010	10	9	4	2	3	1	0	0	29
2011	13	8	5	3	3	1	1	0	34

24 See end notes.

Source: ATSB (2004), ATSB (2012a)

**Table T 8.12** Rail fatality rate per 100 000 population, by state/territory

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT 24	Total
2001	0.52	0.21	0.14	0.13	0.11	0.00	0.00		0.27
2002	0.24	0.29	0.08	0.26	0.10	0.00	0.50		0.20
2003	0.27	0.20	0.08	0.00	0.10	0.00	0.00		0.17
2004	0.22	0.24	0.05	0.13	0.05	0.00	0.49		0.16
2005	0.16	0.28	0.15	0.26	0.00	0.00	0.00		0.17
2006	0.13	0.27	0.22	0.13	0.19	0.20	0.00		0.19
2007	0.12	0.44	0.07	0.32	0.14	0.00	0.00		0.20
2008	0.10	0.32	0.14	0.06	0.00	0.00	0.00		0.14
2009	0.07	0.28	0.07	0.12	0.09	0.00	0.44		0.13
2010	0.14	0.16	0.09	0.12	0.13	0.20	0.00		0.13
2011	0.18	0.14	0.11	0.18	0.13	0.20	0.43		0.15

24 See end notes.

Source: ABS (2013d), ATSB (2004), ATSB (2012a).

**Table T 8.13** Number of aviation accidents and casualties by severity

Calendar year	Accidents		Casualties	
	Fatal accidents	Non-fatal accidents	Fatalities	Serious injuries
1971	14	225	35	24
1972	23	177	52	20
1973	15	227	26	23
1974	17	241	39	23
1975	22	206	49	27
1976	27	285	58	49
1977	31	259	55	51
1978	34	274	65	49
1979	31	284	45	50
1980	32	269	64	41
1981	27	254	58	49
1982	35	223	60	43
1983	30	275	54	45
1984	32	234	48	37
1985	29	212	54	36
1986	29	218	54	35
1987	25	264	39	58
1988	35	289	67	44
1989	46	300	82	75
1990	44	299	80	61
1991	28	291	52	39
1992	38	267	63	38
1993	30	283	56	58
1994	35	228	62	31
1995	33	235	51	48
1996	29	214	51	33
1997	25	231	38	29
1998	31	197	56	22
1999	25	167	46	20
2000	24	193	44	42
2001	27	169	46	31
2002	19	145	34	26
2003	21	133	44	26
2004	21	142	34	23
2005	24	109	45	7
2006	24	82	40	15
2007	29	133	44	17
2008	27	162	43	42
2009	25	143	27	20
2010	19	183	24	32
2011	24	162	38	38
2012	26	172	39	39

Note: Includes civilian aviation accidents (VH and non-VH registered aircraft) inside Australia only.

Source: ATSB (2013b).

**Table T 8.14** Aviation accident rate and casualty rate, by accident severity

Calendar year	Accidents		Casualties	
	Fatal	Non-fatal	Fatalities	Non-fatal injuries
1971	0.11	1.72	0.27	0.18
1972	0.17	1.33	0.39	0.15
1973	0.11	1.68	0.19	0.17
1974	0.12	1.76	0.28	0.17
1975	0.16	1.48	0.35	0.19
1976	0.19	2.03	0.41	0.35
1977	0.22	1.82	0.39	0.36
1978	0.24	1.91	0.45	0.34
1979	0.21	1.96	0.31	0.34
1980	0.22	1.83	0.44	0.28
1981	0.18	1.70	0.39	0.33
1982	0.23	1.47	0.40	0.28
1983	0.19	1.79	0.35	0.29
1984	0.21	1.50	0.31	0.24
1985	0.18	1.34	0.34	0.23
1986	0.18	1.36	0.34	0.22
1987	0.15	1.62	0.24	0.36
1988	0.21	1.75	0.41	0.27
1989	0.27	1.78	0.49	0.45
1990	0.26	1.75	0.47	0.36
1991	0.16	1.68	0.30	0.23
1992	0.22	1.53	0.36	0.22
1993	0.17	1.60	0.32	0.33
1994	0.20	1.28	0.35	0.17
1995	0.18	1.30	0.28	0.27
1996	0.16	1.17	0.28	0.18
1997	0.14	1.25	0.21	0.16
1998	0.17	1.05	0.30	0.12
1999	0.13	0.88	0.24	0.11
2000	0.13	1.01	0.23	0.22
2001	0.14	0.87	0.24	0.16
2002	0.10	0.74	0.17	0.13
2003	0.11	0.67	0.22	0.13
2004	0.10	0.71	0.17	0.11
2005	0.12	0.53	0.22	0.03
2006	0.12	0.40	0.19	0.07
2007	0.14	0.63	0.21	0.08
2008	0.13	0.75	0.20	0.20
2009	0.11	0.65	0.12	0.09
2010	0.09	0.82	0.11	0.14
2011	0.11	0.73	0.17	0.17
2012	0.11	0.76	0.17	0.17

Note: Includes civilian aviation accidents (VH and non-VH registered aircraft) inside Australia only.

Source: ABS (2013d), ATSB (2013b).

**Table T 8.15a** Number of aviation accidents and casualties, by state/territory—  
accidents

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Other <sup>c</sup>	Total
1971	79	27	39	24	47	6	15	2	0	239
1972	45	46	39	20	25	9	15	1	0	200
1973	76	54	37	22	27	10	13	3	0	242
1974	58	52	46	33	40	10	16	1	2	258
1975	68	48	45	24	27	5	9	2	0	228
1976	95	70	47	42	38	8	12	0	0	312
1977	78	67	45	33	41	7	16	3	0	290
1978	78	57	69	29	51	2	20	2	0	308
1979	102	52	62	31	42	4	20	2	0	315
1980	88	43	68	27	48	5	19	2	1	301
1981	68	33	83	35	44	4	14	0	0	281
1982	74	37	73	21	37	3	10	2	1	258
1983	97	36	92	22	33	10	11	4	0	305
1984	83	38	68	20	36	8	13	0	0	266
1985	82	27	64	14	35	8	10	1	0	241
1986	76	47	52	20	29	5	17	1	0	247
1987	91	43	81	23	22	7	22	0	0	289
1988	89	36	103	27	36	6	23	4	0	324
1989	98	45	117	22	28	6	25	5	0	346
1990	122	39	90	16	47	6	23	0	0	343
1991	88	43	90	16	50	6	23	2	1	319
1992	93	47	66	24	47	9	18	1	0	305
1993	92	40	88	23	40	10	19	1	0	313
1994	79	35	71	20	32	3	23	0	0	263
1995	67	31	96	16	41	4	11	2	0	268
1996	66	25	77	15	42	9	9	0	0	243
1997	71	30	74	18	32	5	24	2	0	256
1998	64	25	68	13	33	8	14	3	0	228
1999	47	32	50	18	26	4	11	3	1	192
2000	59	31	63	10	34	2	17	1	0	217
2001	41	24	57	15	35	4	18	2	0	196
2002	51	21	42	9	25	6	10	0	0	164
2003	45	22	37	8	21	5	12	4	0	154
2004	38	26	55	11	17	5	11	0	0	163
2005	45	17	37	10	17	0	7	0	0	133
2006	30	15	27	3	15	5	10	1	0	106
2007	42	28	40	10	22	5	14	0	1	162
2008	55	27	47	12	32	4	12	0	0	189
2009	48	26	45	6	25	6	10	1	1	168
2010	43	32	58	18	31	4	16	0	0	202
2011	48	24	53	11	29	6	15	0	0	186
2012	53	41	55	13	20	4	11	1	0	198

<sup>c</sup> Other refers to accidents that occur in Australian waters beyond 200nm off the Australian coastline up to mid 2006. From 2006, 'other' refers to accidents that occur in Australian waters beyond 12 nautical miles off the coastline.

Source: ATSB (2013b).

**Table T 8.15b** Number of aviation accidents and casualties, by state/territory—fatalities

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Other <sup>c</sup>	Total
1971	11	5	0	2	17	0	0	0	0	35
1972	10	3	9	14	1	2	13	0	0	52
1973	14	0	1	5	5	1	0	0	0	26
1974	10	6	9	7	3	2	2	0	0	39
1975	11	6	13	5	7	0	6	1	0	49
1976	33	4	9	11	0	1	0	0	0	58
1977	20	6	9	8	4	2	6	0	0	55
1978	12	23	17	4	7	0	2	0	0	65
1979	13	15	6	4	5	0	2	0	0	45
1980	30	16	6	4	8	0	0	0	0	64
1981	14	14	18	2	5	0	5	0	0	58
1982	21	12	23	0	4	0	0	0	0	60
1983	10	8	25	2	6	3	0	0	0	54
1984	15	7	11	4	8	3	0	0	0	48
1985	17	7	12	7	7	0	4	0	0	54
1986	15	12	13	8	5	0	1	0	0	54
1987	13	5	18	1	1	1	0	0	0	39
1988	24	7	21	2	12	0	1	0	0	67
1989	26	6	23	5	2	0	20	0	0	82
1990	29	7	33	3	5	0	3	0	0	80
1991	15	6	15	3	3	4	2	4	0	52
1992	26	10	9	3	8	5	1	1	0	63
1993	21	5	18	2	1	6	1	2	0	56
1994	29	5	20	6	2	0	0	0	0	62
1995	19	8	17	0	0	3	4	0	0	51
1996	15	3	19	1	10	3	0	0	0	51
1997	16	2	10	2	1	1	6	0	0	38
1998	24	4	13	1	8	5	1	0	0	56
1999	11	8	17	6	2	0	1	1	0	46
2000	2	6	21	9	4	0	2	0	0	44
2001	6	5	18	2	8	2	1	4	0	46
2002	11	7	11	0	0	0	5	0	0	34
2003	16	0	13	2	9	4	0	0	0	44
2004	7	13	10	0	2	1	1	0	0	34
2005	12	6	23	2	1	0	1	0	0	45
2006	16	5	14	0	2	0	3	0	0	40
2007	8	12	9	0	8	3	4	0	0	44
2008	16	3	11	1	8	0	4	0	0	43
2009	7	7	5	1	7	0	0	0	0	27
2010	7	2	7	1	4	0	3	0	0	24
2011	14	4	12	3	3	1	1	0	0	38
2012	13	8	15	1	2	0	0	0	0	39

<sup>c</sup> Other refers to accidents that occur in Australian waters beyond 200nm off the Australian coastline up to mid 2006. From 2006, 'other' refers to accidents that occur in Australian waters beyond 12nm off the coastline.

Source: ATSB (2013b).



# CHAPTER 9

## Energy and the environment

**Table T 9.1** Total transport petroleum sales, by fuel type

Financial year	Automotive gasoline	Automotive LPG	Automotive diesel	Industrial & marine diesel	Aviation gasoline	Aviation turbine fuel
	<i>megalitres</i>					
1977–78	14 411.3					
1978–79	14 843.9					
1979–80	14 735.7					
1980–81	14 801.9					
1981–82	15 224.8		7 841.4			
1982–83	14 983.4		7 456.5			
1983–84	15 336.5		7 933.8			
1984–85	15 577.6		8 152.4			
1985–86	15 870.0		8 297.2			
1986–87	16 006.0		8 695.8			
1987–88	16 567.0		9 093.8			2 788.2
1988–89	17 079.0		9 756.1			2 981.1
1989–90	17 348.0		10 087.0			2 843.0
1990–91	16 874.0		9 795.0			3 229.0
1991–92	16 963.0		9 984.4			3 459.1
1992–93	17 293.0		10 321.4			3 684.6
1993–94	17 506.7		10 721.3		76.5	3 823.1
1994–95	17 751.5		11 174.7		104.5	4 301.8
1995–96	17 885.8		11 923.2		101.6	4 664.9
1996–97	17 889.0		12 315.8		102.3	4 847.8
1997–98	17 912.7		12 557.4		104.1	4 863.0
1998–99	18 202.1		12 823.2		105.9	4 793.8
1999–00	18 476.6	1 902.9	13 245.1	17.7	103.3	5 022.8
2000–01	18 167.6	2 221.4	12 952.4	22.1	101.4	5 318.5
2001–02	18 668.8	2 422.2	13 441.2	45.8	96.5	4 602.6
2002–03	18 872.5	2 416.3	13 888.0	18.1	90.2	4 249.7
2003–04	19 962.0	2 546.8	14 461.5	17.0	89.9	4 328.8
2004–05	19 875.7	2 338.8	15 185.0	14.7	90.7	4 729.9
2005–06	19 047.9	2 563.7	15 803.6	19.4	86.4	5 359.4
2006–07	19 250.7	2 335.3	17 027.6	15.2	89.5	5 837.0
2007–08	19 234.2	2 240.5	18 244.9	11.5	87.8	6 211.8
2008–09	18 734.2	2 253.1	18 587.0	16.2	96.1	6 316.7
2009–10	18 643.6	2 083.1	19 043.9	25.8	79.7	6 675.2
2010–11	18 725.1	2 022.0	20 053.8	7.2	78.6	7 067.6
2011–12	18 761.6	1 908.2	21 630.2	0.5	84.1	7 336.4

Note: Data are not readily available for missing years.

Source: RET (2013).

**Table T 9.2a** Australian petroleum production, imports and exports—production

Financial year	Automotive gasoline	LPG 25	Automotive diesel	Industrial & marine diesel	Aviation gasoline	Aviation turbine fuel
<i>megalitres</i>						
1999–00	18 652.4	1 674.4	12 736.8	59.6	158.1	5 538.7
2000–01	17 886.9	1 794.7	13 212.1	98.1	137.5	5 836.3
2001–02	17 999.6	1 718.2	13 064.1	105.4	146.8	5 389.7
2002–03	17 984.1	1 657.2	13 334.8	116.7	134.1	5 148.9
2003–04	17 375.3	1 061.8	12 544.1	84.1	113.8	4 964.3
2004–05	17 668.4	974.4	12 661.1	22.0	139.7	5 275.0
2005–06	16 527.6	1 124.7	10 153.7	30.8	119.5	5 215.5
2006–07	17 732.1	1 386.7	11 055.3	20.7	119.3	5 332.1
2007–08	17 049.0	1 514.9	12 176.6	3.4	119.0	5 181.8
2008–09	17 159.5	1 476.9	12 230.9	13.0	104.6	5 494.3
2009–10	16 771.1	1 203.6	11 719.6	3.0	103.6	5 340.7
2010–11	16 642.7	1 467.4	12 858.4	0.4	91.4	5 447.7
2011–12	15 638.4	1 198.1	12 312.3	0.0	89.8	5 449.7

25 See end notes.

Source: RET (2013).

**Table T 9.2b** Australian petroleum production, imports and exports—imports<sup>26</sup>

Financial year	Automotive gasoline	LPG 25	Automotive diesel	Industrial & marine diesel	Aviation gasoline	Aviation turbine fuel
<i>megalitres</i>						
1999–00	1 065.1	518.9	1 399.7		0.0	170.6
2000–01	1 188.7	633.4	1 129.0		0.0	387.4
2001–02	1 436.2	588.0	1 280.3		0.0	224.7
2002–03	1 686.1	299.0	1 645.6		55.8	440.8
2003–04	3 213.2	789.4	3 383.0		203.8	725.9
2004–05	3 166.0	540.0	3 965.1		47.0	986.9
2005–06	3 696.0	631.5	6 127.1		10.5	827.5
2006–07	2 815.5	749.3	5 931.5		0.8	1 089.4
2007–08	3 533.1	964.8	7 476.2		0.1	1 845.5
2008–09	4 087.5	1 003.8	8 245.9		0.0	2 026.5
2009–10	3 887.4	1 066.8	8 680.5		0.0	2 168.4
2010–11	2 652.8	888.2	8 832.4		0.0	2 085.9
2011–12	3 671.7	1 022.7	11 224.9		5.8	2 251.9

25, 26 See end notes.

Note: Data are not separately available for missing years.

Source: RET (2013).

**Table T 9.2c** Australian petroleum production, imports and exports—exports

Financial year	Automotive gasoline	LPG 25	Automotive diesel	Industrial & marine diesel	Aviation gasoline	Aviation turbine fuel
	<i>megalitres</i>					
1999–00	1 372.6	2 858.9	1 018.1	51.3	78.9	578.3
2000–01	1 286.0	2 784.6	1 150.1	119.5	28.5	755.5
2001–02	1 184.8	3 211.2	886.2	60.0	73.8	549.0
2002–03	1 052.6	3 195.2	1 044.1	0.0	52.5	651.7
2003–04	755.5	2 936.9	840.7	0.0	29.6	518.7
2004–05	770.6	2 846.6	293.9	0.0	35.7	227.0
2005–06	629.5	2 799.9	418.8	0.0	174.4	126.5
2006–07	763.5	2 850.9	283.6	0.0	97.0	121.7
2007–08	628.3	2 589.0	461.7	0.0	96.4	149.5
2008–09	243.8	2 499.7	357.2	0.0	56.2	112.7
2009–10	221.9	2 776.3	187.0	0.0	32.5	71.9
2010–11	174.5	2 470.8	117.2	0.0	19.8	11.8
2011–12	175.2	2 114.7	129.6	0.0	17.0	2.4

25 See end notes.

Source: RET (2013).

**Table T 9.3** Average retail petrol prices in Australia, by capital city

Average over financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
	<i>cents per litre</i>							
1994–95	67.4	68.3	60.3	69.3	70.3	73.1	72.9	71.3
1995–96	71.0	71.2	62.5	72.4	74.0	75.4	76.0	74.5
1996–97	73.2	72.0	64.4	73.3	74.4	76.5	79.1	76.3
1997–98	72.0	70.5	63.3	71.2	72.7	77.6	79.9	73.9
1998–99	68.9	66.5	59.4	67.6	68.9	74.1	75.7	71.6
1999–00	80.3	77.4	70.9	79.0	79.8	85.8	87.1	83.2
2000–01	93.5	92.0	83.1	92.9	93.0	96.6	101.6	96.2
2001–02	85.0	83.8	77.2	84.7	85.1	88.7	92.7	87.4
2002–03	90.5	88.8	81.4	89.7	91.7	95.4	97.1	93.0
2003–04	92.8	91.0	84.1	92.7	92.3	98.2	99.6	95.0
2004–05	104.2	101.0	94.5	103.3	101.0	109.6	109.9	104.4
2005–06	123.1	122.5	115.2	123.7	121.3	129.8	129.9	126.3
2006–07	123.2	123.6	116.5	122.2	122.4	126.7	133.2	126.8
2007–08	136.5	136.5	128.5	135.3	135.3	140.5	146.3	138.5
2008–09	128.5	129.8	122.0	128.3	125.8	134.5	140.5	130.8
2009–10	123.5	125.0	126.0	123.0	123.0	130.5	133.3	127.5
2010–11	132.5	131.5	134.0	129.5	132.3	139.3	140.0	133.0

Source: ABS (2011a).

**Table T 9.4** Transport direct greenhouse gas (carbon dioxide equivalent) emissions by transport mode

Financial year	Road Vehicles	Rail (excl electric)	Domestic Maritime	Domestic Aviation	Total (including off-road vehicles)
	<i>gigagrams of CO<sub>2</sub> equivalent</i>				
1974–75	33 059	1 910	3 441	2 791	41 231
1975–76	34 587	1 911	3 286	2 615	42 430
1976–77	36 615	1 950	3 587	2 484	44 668
1977–78	38 159	1 977	3 940	2 742	46 852
1978–79	39 951	2 023	3 573	2 648	48 230
1979–80	40 683	2 023	3 748	2 765	49 253
1980–81	41 555	2 003	3 788	2 748	50 129
1981–82	43 534	1 959	3 259	3 124	51 912
1982–83	43 061	1 799	2 973	3 010	50 878
1983–84	45 110	1 956	3 033	2 936	53 071
1984–85	46 873	2 040	2 888	3 017	54 854
1985–86	48 022	1 985	2 964	3 244	56 256
1986–87	48 919	2 016	2 939	3 331	57 249
1987–88	51 440	1 985	2 904	3 600	59 980
1988–89	53 458	1 820	2 671	3 536	61 541
1989–90	54 747	1 753	2 383	2 833	61 776
1990–91	53 719	1 745	2 080	3 517	61 121
1991–92	54 420	1 696	2 140	3 817	62 134
1992–93	56 137	1 699	1 950	4 012	63 862
1993–94	57 674	1 800	1 815	4 245	65 601
1994–95	59 935	1 755	2 319	5 003	69 080
1995–96	61 362	1 707	2 442	5 491	71 073
1996–97	62 359	1 739	2 434	5 863	72 467
1997–98	63 402	1 779	2 134	5 318	72 706
1998–99	64 557	1 829	1 983	5 120	73 565
1999–00	65 785	1 884	2 085	5 352	75 184
2000–01	65 315	1 854	2 063	5 963	75 273
2001–02	67 162	1 939	2 152	5 347	76 680
2002–03	68 967	1 991	2 234	5 103	78 378
2003–04	71 861	2 127	2 369	5 337	81 782
2004–05	72 319	2 304	2 518	5 810	83 039
2005–06	71 976	2 318	2 443	6 111	82 933
2006–07	73 376	2 498	2 623	6 643	85 226
2007–08	74 461	2 578	2 661	7 153	86 942
2008–09	74 390	2 582	2 479	7 301	86 842
2009–10	75 257	2 682	2 652	7 406	88 088
2010–11	76 549	2 743	2 555	7 862	89 802
2011–12	77 811	2 865	2 616	8 018	91 405

Source: BITRE (2009) and BITRE estimates.

**Table T 9.5** Road transport direct greenhouse gas (carbon dioxide equivalent) emissions, by vehicle type

Financial year	Cars	Light commercial vehicles	Articulated trucks	Rigid and other trucks	Buses	Motor cycles	Total road
<i>gigagrams of CO<sub>2</sub> equivalent</i>							
1989–90	34 880	7 619	5 629	5 099	1 269	251	54 747
1990–91	34 797	7 365	5 544	4 560	1 225	226	53 719
1991–92	35 435	7 590	5 592	4 393	1 183	226	54 420
1992–93	36 580	7 817	6 008	4 332	1 175	226	56 137
1993–94	37 526	8 049	6 187	4 483	1 206	223	57 674
1994–95	38 585	8 518	6 658	4 723	1 229	221	59 935
1995–96	39 075	8 816	7 003	4 999	1 255	214	61 362
1996–97	39 309	8 898	7 312	5 381	1 246	213	62 359
1997–98	39 536	9 310	7 626	5 461	1 264	205	63 402
1998–99	40 233	9 540	7 891	5 428	1 267	197	64 557
1999–00	40 900	9 731	8 148	5 517	1 290	200	65 785
2000–01	40 483	9 853	8 079	5 393	1 301	206	65 315
2001–02	41 435	10 271	8 358	5 587	1 294	218	67 162
2002–03	42 379	10 561	8 668	5 810	1 335	214	68 967
2003–04	44 452	10 909	8 993	5 937	1 345	226	71 861
2004–05	44 313	10 968	9 285	6 157	1 353	243	72 319
2005–06	43 159	11 262	9 513	6 407	1 372	265	71 976
2006–07	43 506	11 659	9 931	6 611	1 375	294	73 376
2007–08	43 585	12 172	10 192	6 792	1 398	322	74 461
2008–09	43 132	12 705	10 081	6 697	1 430	344	74 390
2009–10	43 244	13 162	10 219	6 824	1 439	370	75 257
2010–11	43 449	13 544	10 637	7 067	1 467	386	76 549
2011–12	43 616	13 927	11 096	7 274	1 494	405	77 811

Source: BITRE (2009) and BITRE estimates.

**Table T 9.6** Transport direct emissions, by transport mode—carbon dioxide

Financial year	Road Vehicles	Rail (excluding electric)	Domestic Maritime (including small craft)	Domestic Aviation	Total (including off-road vehicles)
			<i>gigagrams of CO<sub>2</sub></i>		
1989–90	53 599	1 714	2 315	2 803	60 490
1990–91	52 504	1 706	2 013	3 481	59 764
1991–92	53 114	1 659	2 070	3 779	60 681
1992–93	54 722	1 661	1 878	3 972	62 296
1993–94	56 153	1 760	1 742	4 203	63 923
1994–95	58 290	1 716	2 237	4 954	67 264
1995–96	59 621	1 669	2 357	5 438	69 154
1996–97	60 548	1 700	2 346	5 806	70 471
1997–98	61 521	1 740	2 046	5 266	70 644
1998–99	62 595	1 789	1 893	5 070	71 422
1999–00	63 750	1 843	1 991	5 300	72 961
2000–01	63 258	1 813	1 968	5 905	73 021
2001–02	65 026	1 897	2 053	5 295	74 350
2002–03	66 777	1 948	2 131	5 053	75 990
2003–04	69 586	2 081	2 261	5 286	79 298
2004–05	70 068	2 254	2 406	5 755	80 569
2005–06	69 812	2 267	2 337	6 050	80 550
2006–07	71 207	2 443	2 514	6 577	82 826
2007–08	72 301	2 522	2 551	7 085	84 547
2008–09	72 287	2 526	2 370	7 231	84 503
2009–10	73 165	2 623	2 539	7 334	85 751
2010–11	74 478	2 683	2 440	7 788	87 481
2011–12	75 766	2 802	2 499	7 942	89 103

Source: BITRE (2009) and BITRE estimates.

**Table T 9.7** Transport direct emissions, by transport mode—methane

Financial year	Road Vehicles	Rail (excluding electric)	Domestic Maritime (including small craft)	Domestic Aviation	Total (including off-road vehicles)
<i>gigagrams of methane</i>					
1989–90	23.27	1.24	2.33	0.29	27.16
1990–91	22.91	1.23	2.37	0.25	26.79
1991–92	23.28	1.20	2.50	0.24	27.26
1992–93	23.88	1.20	2.65	0.26	28.02
1993–94	24.23	1.27	2.79	0.26	28.57
1994–95	24.77	1.24	2.97	0.27	29.29
1995–96	24.79	1.21	3.12	0.27	29.42
1996–97	24.64	1.23	3.24	0.28	29.42
1997–98	24.45	1.26	3.34	0.28	29.36
1998–99	24.12	1.29	3.50	0.28	29.22
1999–00	23.67	1.33	3.67	0.28	28.98
2000–01	22.65	1.31	3.73	0.28	28.01
2001–02	22.30	1.37	3.87	0.26	27.85
2002–03	21.84	1.41	4.04	0.25	27.58
2003–04	21.72	1.50	4.26	0.25	27.77
2004–05	20.58	1.63	4.36	0.26	26.87
2005–06	18.90	1.64	4.11	0.26	24.94
2006–07	17.99	1.77	4.16	0.27	24.23
2007–08	16.90	1.82	4.21	0.28	23.26
2008–09	15.62	1.83	4.24	0.29	22.02
2009–10	14.65	1.90	4.36	0.29	21.24
2010–11	13.53	1.94	4.46	0.30	20.26
2011–12	12.46	2.02	4.58	0.30	19.41

Source: BITRE (2009) and BITRE estimates.

**Table T 9.8** Transport direct emissions, by transport mode—nitrous oxide

Financial year	Road Vehicles	Rail (excluding electric)	Domestic Maritime (including small craft)	Domestic Aviation	Total (including off-road vehicles)
<i>gigagrams of nitrous oxide</i>					
1989–90	2.13	0.04	0.06	0.08	2.31
1990–91	2.37	0.04	0.05	0.10	2.56
1991–92	2.64	0.04	0.06	0.11	2.84
1992–93	2.95	0.04	0.05	0.11	3.15
1993–94	3.27	0.04	0.05	0.12	3.48
1994–95	3.63	0.04	0.06	0.14	3.87
1995–96	3.94	0.04	0.06	0.15	4.20
1996–97	4.17	0.04	0.06	0.17	4.44
1997–98	4.41	0.04	0.06	0.15	4.66
1998–99	4.70	0.04	0.05	0.14	4.93
1999–00	4.96	0.04	0.05	0.15	5.21
2000–01	5.10	0.04	0.05	0.17	5.37
2001–02	5.38	0.04	0.06	0.15	5.63
2002–03	5.58	0.05	0.06	0.14	5.83
2003–04	5.87	0.05	0.06	0.15	6.13
2004–05	5.87	0.05	0.07	0.16	6.15
2005–06	5.70	0.05	0.06	0.18	6.00
2006–07	5.78	0.06	0.07	0.19	6.10
2007–08	5.82	0.06	0.07	0.20	6.15
2008–09	5.72	0.06	0.06	0.21	6.05
2009–10	5.76	0.06	0.07	0.21	6.10
2010–11	5.77	0.06	0.07	0.22	6.12
2011–12	5.75	0.06	0.07	0.22	6.11

Source: BITRE (2009) and BITRE estimates.



PART E: Energy

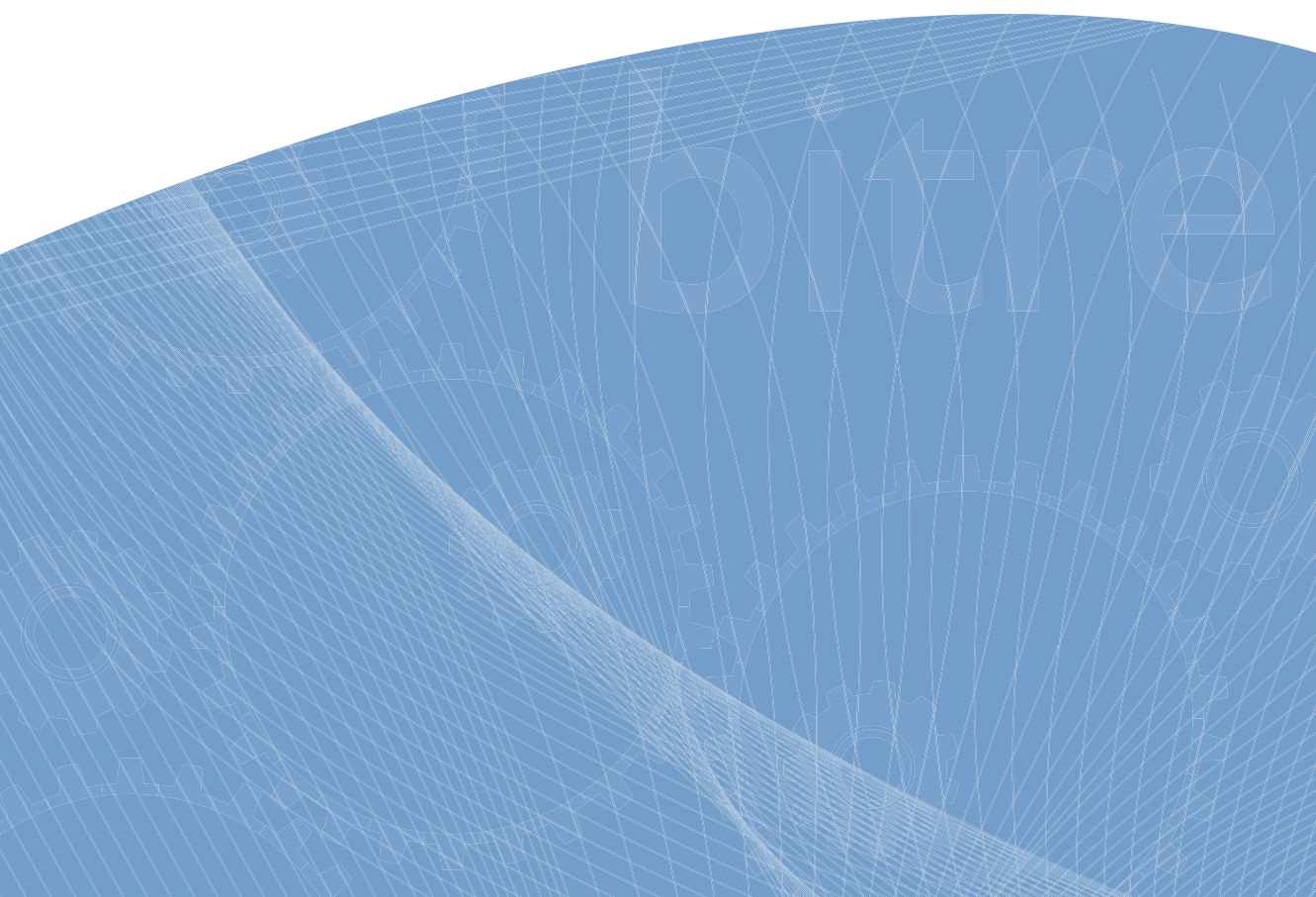
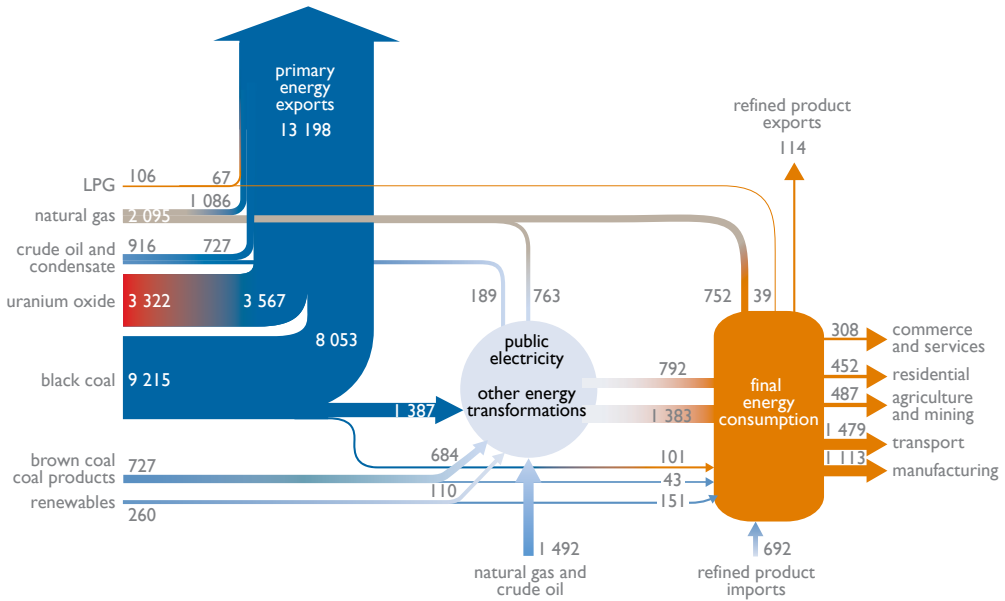


Figure E I Australian energy flows in petajoules, 2010–11



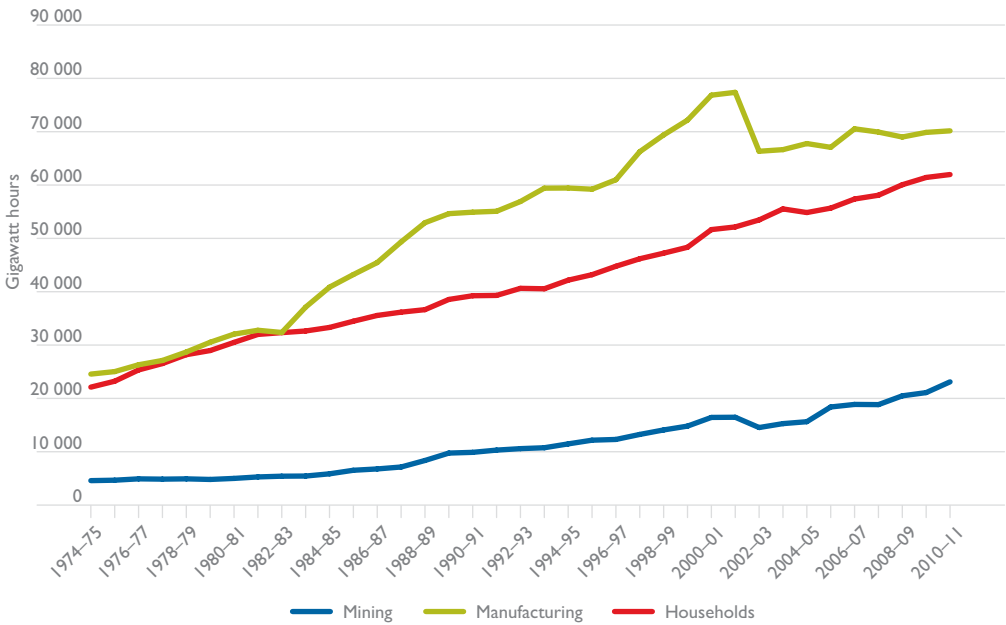
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# PART E

## Energy

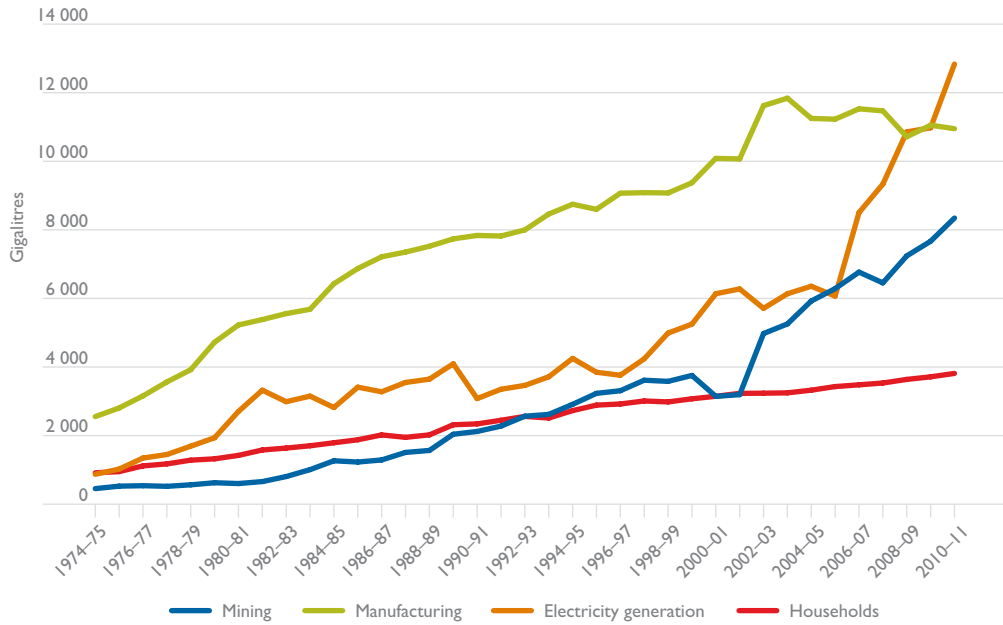
Statistics are provided for the production of energy, the conversion of primary forms of energy into electricity and the distribution of energy through electricity and gas networks.

**Figure E 2** Australian electricity consumption, by broad industry



The three largest groups of electricity consumers are the manufacturing industry, households and the mining industry. The acceleration of electricity consumption by the manufacturing industry up to 2001–02 was influenced by a rapid increase in consumption by businesses manufacturing basic non-ferrous metals. Consumption by the mining industry increased significantly in 2009–10 and 2010–11 due to the mining boom.

Figure E 3 Australian gas consumption, by broad industry



The consumption of gas by the electricity generation industry increased sharply from 2006–07 to 2010–11. The growth reflected a sharp increase in gas consumption by the electricity generation industry in Western Australia and New South Wales (in the later case, usage increased sharply in 2009–10 to 2010–11).

# CHAPTER I

## Energy infrastructure

**Table E I.1a** Flow of new infrastructure—value of energy infrastructure engineering construction work done by the private sector for the private sector, adjusted by chain volume index

Financial year	Electricity generation, transmission and distribution	Pipelines		Total major infrastructure engineering construction	Energy percentage of total
		\$ million			
1986–87	191.5	217.8	2 085.4	19.63	
1987–88	244.5	153.2	2 304.6	17.26	
1988–89	198.3	172.0	2 513.8	14.73	
1989–90	134.1	151.4	2 733.4	10.44	
1990–91	166.0	119.7	2 574.4	11.10	
1991–92	169.6	168.3	2 436.6	13.87	
1992–93	134.0	317.8	2 572.8	17.56	
1993–94	256.7	236.6	3 197.7	15.43	
1994–95	271.0	283.5	3 182.0	17.43	
1995–96	721.4	441.4	4 126.6	28.18	
1996–97	665.0	384.4	4 322.4	24.28	
1997–98	961.0	473.6	5 513.0	26.02	
1998–99	1 172.9	628.6	6 366.8	28.29	
1999–00	2 036.7	621.1	6 748.0	39.39	
2000–01	2 123.8	344.6	6 072.2	40.65	
2001–02	1 941.9	717.4	6 411.3	41.48	
2002–03	1 839.2	1 266.9	8 676.3	35.80	
2003–04	1 989.5	1 876.1	12 089.7	31.97	
2004–05	2 721.0	883.9	13 834.0	26.06	
2005–06	2 412.2	1 092.1	14 350.8	24.42	
2006–07	3 351.6	1 006.3	17 376.1	25.08	
2007–08	3 826.0	647.7	18 731.1	23.88	
2008–09	5 119.9	870.7	20 008.2	29.94	
2009–10	4 291.6	1 000.7	18 968.7	27.90	
2010–11	4 213.0	1 733.6	23 398.3	25.41	
2011–12	4 563.0	2 422.9	28 010.1	24.94	

Source: ABS (2013a) adjusted by chain volume index.

**Table E I.1b** Flow of new infrastructure—value of energy infrastructure engineering construction work done by the private sector for the public sector, adjusted by chain volume index

Financial year	Electricity generation, transmission and distribution	Pipelines	Total major infrastructure engineering construction	Energy percentage of total
		\$ million		per cent
1986–87	1 284.5	44.8	4 704.8	28.26
1987–88	830.8	31.7	3 470.3	24.85
1988–89	775.9	73.2	3 117.7	27.23
1989–90	639.6	151.0	3 344.2	23.64
1990–91	1 077.7	73.9	4 099.8	28.09
1991–92	1 200.9	14.3	4 174.5	29.11
1992–93	1 002.6	39.3	4 518.5	23.06
1993–94	928.6	23.5	5 290.5	18.00
1994–95	710.4	68.4	4 624.8	16.84
1995–96	477.7	370.2	4 512.7	18.79
1996–97	819.9	127.6	5 001.7	18.94
1997–98	623.5	50.6	5 527.3	12.20
1998–99	390.3	19.6	5 905.5	6.94
1999–00	417.1	32.8	6 314.1	7.12
2000–01	365.8	39.7	5 859.8	6.92
2001–02	508.4	23.5	5 161.0	10.31
2002–03	603.2	11.7	5 290.7	11.62
2003–04	369.4	11.8	5 243.5	7.27
2004–05	633.6	12.6	7 037.5	9.18
2005–06	868.4	5.2	7 559.3	11.56
2006–07	560.2	3.8	7 939.4	7.10
2007–08	451.5	9.9	11 309.2	4.08
2008–09	661.3	3.4	13 844.2	4.80
2009–10	927.9	8.9	14 367.6	6.52
2010–11	951.9	29.6	15 107.1	6.50
2011–12	1 141.1	100.9	15 629.3	7.95

Source: ABS (2013a), adjusted by chain volume index.

**Table E 1.1c** Flow of new infrastructure—value of energy infrastructure engineering construction work done by the public sector, adjusted by chain volume index

Financial year	Electricity generation, transmission and distribution	Pipelines	Total major infrastructure engineering construction	Energy percentage of total
		\$ million		per cent
1986–87	1 322.3	26.8	9 376.1	14.39
1987–88	1 231.2	109.4	8 645.7	15.51
1988–89	1 219.2	111.1	8 756.2	15.19
1989–90	1 738.7	99.0	10 020.4	18.34
1990–91	1 427.6	105.5	9 921.5	15.45
1991–92	1 306.0	73.2	8 477.9	16.27
1992–93	1 388.0	52.1	9 122.1	15.79
1993–94	1 294.3	174.2	8 741.5	16.80
1994–95	1 370.6	141.1	9 849.8	15.35
1995–96	983.3	146.4	10 073.2	11.21
1996–97	894.6	32.2	9 437.2	9.82
1997–98	947.2	54.4	9 408.8	10.65
1998–99	1 193.0	144.6	10 114.9	13.22
1999–00	1 596.5	43.1	11 206.2	14.63
2000–01	1 887.2	35.6	10 192.8	18.86
2001–02	2 023.7	44.8	10 136.9	20.41
2002–03	2 159.0	32.2	10 081.1	21.74
2003–04	2 476.0	28.2	9 846.2	25.43
2004–05	2 591.6	6.9	10 269.5	25.30
2005–06	3 528.3	133.8	12 536.8	29.21
2006–07	4 278.0	219.5	11 525.0	39.02
2007–08	4 718.8	32.1	11 168.1	42.54
2008–09	5 651.4	7.4	12 914.3	43.82
2009–10	6 020.9	6.3	14 596.5	41.29
2010–11	5 499.8	3.1	14 345.8	38.36
2011–12	5 724.2	1.2	14 847.6	38.56

Source: ABS (2013a), adjusted by chain volume index.

**Table E 1.1d** Flow of new infrastructure—total value of energy infrastructure engineering construction work done, adjusted by chain volume index

Financial year	Electricity generation, transmission and distribution	Pipelines	Total major infrastructure engineering construction	Energy percentage of total
		<i>\$ million</i>		<i>per cent</i>
1986–87	2 798.3	289.5	16 166.3	19.10
1987–88	2 306.5	294.4	14 420.7	18.04
1988–89	2 193.4	356.3	14 387.8	17.72
1989–90	2 512.4	401.4	16 098.0	18.10
1990–91	2 671.3	299.1	16 595.6	17.90
1991–92	2 676.5	255.8	15 088.9	19.43
1992–93	2 524.6	409.2	16 213.4	18.09
1993–94	2 479.6	434.3	17 229.8	16.91
1994–95	2 351.9	493.1	17 656.6	16.11
1995–96	2 182.4	958.0	18 712.5	16.78
1996–97	2 379.4	544.2	18 761.3	15.58
1997–98	2 531.6	578.6	20 449.0	15.21
1998–99	2 756.2	792.8	22 387.1	15.85
1999–00	4 050.3	697.0	24 268.3	19.56
2000–01	4 376.8	419.9	22 124.8	21.68
2001–02	4 474.1	785.6	21 709.2	24.23
2002–03	4 601.4	1 310.8	24 048.1	24.59
2003–04	4 834.9	1 916.0	27 179.5	24.84
2004–05	5 946.2	903.4	31 141.1	22.00
2005–06	6 808.9	1 231.1	34 447.0	23.34
2006–07	8 189.7	1 229.6	36 840.6	25.57
2007–08	8 996.3	689.7	41 208.3	23.51
2008–09	11 432.6	881.5	46 766.8	26.33
2009–10	11 240.3	1 015.9	47 932.8	25.57
2010–11	10 664.6	1 766.4	52 851.3	23.52
2011–12	11 428.3	2 525.1	58 486.9	23.86

Source: ABS (2013a), adjusted by chain volume index.



**Table E 1.2a** Length of energy transmission networks—electricity transmission networks—overhead lines

End of financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Snowy Mountains Hydro Electric Authority
	<i>circuit kilometres</i>								
1978–79	198 652	115 947	105 033	64 606	52 029	20 925	1 574	2 276	518
1979–80	203 846	117 103	110 057	65 573	57 787	21 276	1 663	2 316	518
1980–81	202 814	119 125	109 362	66 235	60 120	21 863	1 716	2 349	518
1981–82	211 235	120 305	113 637	66 882	62 379	22 175	2 092	2 452	518
1982–83	210 619	120 493	121 374	67 568	64 773	22 175	2 135	2 491	518
1983–84	213 987	121 805	126 237	68 245	66 501	23 016	2 484	2 540	518
1984–85	214 657	122 784	131 949	69 271	68 528	22 761	2 992	2 405	510
1985–86	235 346	124 089	137 527	69 646	70 706	23 277	2 992	2 543	510
1986–87	237 065	127 455	143 012	69 829	71 199	23 764	3 301	2 548	510
1987–88	239 878	128 709	149 643	70 094	71 642	24 153	3 349	2 605	510
1988–89	243 437	130 728	155 246	70 815	71 801	24 619	2 341	2 639	529
1989–90	241 851	147 892	160 962	71 416	88 615	25 400	3 408	2 627	529
1990–91	243 561	129 609	159 807	71 786	89 965	25 577	3 715	2 703	522
1991–92	246 283	121 509	162 503	71 873	91 849	25 464	3 925	2 708	522
1992–93	247 086	123 543	163 945	72 357	92 172	25 736	4 157	2 710	527
1993–94	254 487	124 224	166 113	81 557	74 896	25 947	4 861	2 717	425
1994–95									
1995–96									
1996–97									
1997–98	256 859	135 001	176 468	<sup>a</sup> 69 560	80 075	26 239	5 435		
1998–99	257 032	135 348	174 997	71 334	81 898	27 787	5 714		
1999–00	268 816	138 050	182 002	71 294	<sup>b</sup> 99 302	27 095	5 255		
2000–01	268 821	139 125	182 780	72 382	79 743	27 027	5 331		
2001–02	268 117	138 268	182 818	73 962	80 866	27 014	5 614		
2002–03	261 285	126 929	184 358	74 104	81 269	28 519	5 413		
2003–04	261 184	142 417	192 318	74 482	81 454	26 054	5 236		
2004–05	261 031	129 257	186 838	75 092	80 823	26 139	5 427		
2005–06	268 187	129 445	187 126	75 548	78 349	26 966	5 422		
2006–07	270 727	129 022	189 776	76 720	83 552	26 065	5 521		
2007–08	268 147	129 582	190 688	76 558	83 485	25 834	5 622		
2008–09	268 186	130 033	192 018	76 725	82 183	25 596	5 994		
2009–10	268 378	130 158	198 612	76 918	81 821	25 734	5 676		
2010–11	270 428	130 502	194 927	76 695	81 581	25 666	5 555		

**a** Measures of circuit kilometres for South Australia were recalculated in 1997–98 due to a field audit. Measures from 1997–98 onwards should not be compared with earlier estimates.

**b** Prior to 1999–2000, Western Australian estimates for circuit kilometres were compiled using a different methodology and should not be compared with later results.

Note: Data are not readily available for missing years.

Source: esaa (2005) and esaa updates.

**Table E 1.2b** Length of energy transmission networks—electricity transmission networks—underground cables

End of financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Snowy Mountains Hydro Electric Authority
	<i>circuit kilometres</i>								
1978–79	8 934	4 907	3 071	2 580	481	979	194	660	0
1979–80	9 729	4 918	3 318	2 858	579	1 039	245	744	0
1980–81	10 182	5 109	3 393	2 984	685	1 072	270	805	0
1981–82	12 850	5 271	3 702	3 199	843	1 111	333	908	0
1982–83	11 720	5 418	3 986	3 336	966	1 199	568	984	0
1983–84	12 299	5 613	4 244	3 640	1 081	1 058	702	1 029	0
1984–85	12 889	5 729	4 531	4 167	1 252	1 188	1 205	1 146	0
1985–86	15 977	6 162	4 837	4 822	1 478	1 246	1 205	1 232	0
1986–87	16 896	6 507	5 116	5 372	1 684	1 304	983	1 336	0
1987–88	17 504	7 010	5 305	5 795	1 872	1 360	993	1 382	0
1988–89	18 867	7 904	5 552	6 360	1 872	1 419	427	1 443	0
1989–90	19 572	8 749	5 877	6 824	2 552	1 470	1 059	1 528	0
1990–91	20 497	6 399	6 175	7 339	2 702	1 508	692	1 595	0
1991–92	21 324	5 792	6 436	7 700	2 772	1 534	724	1 721	3
1992–93	21 257	5 669	6 829	7 963	2 830	1 596	776	1 829	3
1993–94	23 210	5 764	7 238	7 954	4 541	1 627	825	1 920	4
1994–95									
1995–96									
1996–97									
1997–98	23 989	8 282	10 874	<sup>a</sup> 6 443	6 798	1 655	1 079		
1998–99	25 587	14 387	8 572	6 858	7 264	1 741	2 000		
1999–00	26 649	15 622	9 615	7 382	<sup>b</sup> 11 855	1 548	2 251		
2000–01	28 770	16 659	12 390	8 243	9 596	1 578	2 315		
2001–02	29 486	16 625	14 668	9 206	10 865	1 583	2 315		
2002–03	29 068	15 388	16 763	10 178	10 923	1 622	2 332		
2003–04	29 545	18 712	16 370	10 891	11 952	1 636	2 284		
2004–05	29 101	15 758	15 282	11 193	12 724	1 651	2 295		
2005–06	30 567	16 824	16 211	12 217	14 233	1 819	2 290		
2006–07	32 194	16 960	18 475	14 311	16 420	1 980	2 385		
2007–08	35 546	16 883	19 666	14 850	17 425	2 043	2 405		
2008–09	36 439	17 471	21 395	15 500	18 174	2 129	2 597		
2009–10	37 208	18 655	23 080	15 895	19 947	2 192	2 534		
2010–11	38 149	19 505	23 994	16 142	21 304	2 313	2 577		

**a** Measures of circuit kilometres for South Australia were recalculated in 1997–98 due to a field audit. Measures from 1997–98 onwards should not be compared with earlier estimates.

**b** Prior to 1999–2000, Western Australian estimates for circuit kilometres were compiled using a different methodology and should not be compared with later results.

Note: Data are not readily available for missing years.

Source: esaa (2005) and esaa updates.

**Table E 1.3a** Infrastructure capacity—generation capacity, by type of plant—  
New South Wales

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	140		6 074	45	24	0	0		6 283
1976–77	290		6 089	50	24	0	0		6 453
1977–78	370		6 899	49	24	0	0		7 343
1978–79	370		7 359	52	24	0	0		7 805
1979–80	370		7 345	48	24	0	0		7 788
1980–81	370		7 846	50	24	0	0		8 290
1981–82	370		8 506	50	319	0	0		9 245
1982–83	370		9 150	44	319	0	0		9 883
1983–84	370		10 470	44	319	0	0		11 204
1984–85	370		10 905	44	319	0	0		11 639
1985–86	370		10 826	43	319	0	0		11 558
1986–87	370		11 459	41	269	0	0		12 138
1987–88	345		11 496	37	295	0	0		12 172
1988–89	345		11 336	38	295	0	0		12 014
1989–90	345		10 775	28	295	0	0		11 443
1990–91	345		10 175	1	295	0	0		10 816
1991–92	345		10 215	1	295	0	0		10 856
1992–93	345		10 875	1	295	0	0		11 516
1993–94	345		11 535	1	295	0	0		12 176
1994–95									12 177
1995–96									12 177
1996–97									12 201
1997–98	120	240	11 520	0	295	0	0		12 175
1998–99 <sup>c</sup>	25	240	11 520	0	250	162			12 197
1999–00	25	240	11 520	0	146	162			12 093
2000–01	25	240	11 670	0	100	162			12 197
2001–02	25	240	11 670	0	50	162			12 147
2002–03	29	240	11 750	0	50	162	0		12 231
2003–04	<sup>d</sup> 109	240	11 670	0	50	160	0		12 229
2004–05	109	240	11 670	0	50	160	0		12 229
2005–06	109	240	11 670	0	50	160	0		12 229
2006–07	109	240	11 730	0	50	160	0	0	12 289
2007–08	109	240	11 730	0	50	160	0	0	12 289
2008–09 <sup>e</sup>	2 285	240	11 730	0	690	595	0	0	15 540
2009–10	2 285	240	11 797	0	1 438	595	0	0	16 355
2010–11	2 285	240	11 937	0	1 382	595	0	0	16 439

<sup>c</sup> From 1998–99, non-schedule small hydro plants are excluded from estimates.

<sup>d</sup> From 2003–04, generation capacity of Blowering is included in NSW hydro figures, where previously they were shown in Snowy Mountains Hydro Electric Authority.

<sup>e</sup> From 2008–09, SMHEA generation capacity is recorded by state.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.3b** Infrastructure capacity—generation capacity, by type of plant—  
Victoria

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	319		3 342	0	0	0	0		3 661
1976–77	319		3 342	0	0	0	0		3 661
1977–78	319		3 342	0	0	0	0		3 661
1978–79	319		3 317	0	225	0	0		3 861
1979–80	319		3 317	0	465	0	0		4 101
1980–81	469		3 749	0	465	0	0		4 683
1981–82	469		4 301	0	465	0	0		5 235
1982–83	469		4 301	0	465	0	0		5 235
1983–84	469		4 801	0	465	0	0		5 735
1984–85	469		4 560	0	465	0	0		5 494
1985–86	469		4 960	0	465	0	0		5 894
1986–87	469		5 460	0	465	0	0		6 394
1987–88	469		5 460	0	465	0	0		6 394
1988–89	469		5 720	0	465	0	0		6 654
1989–90	469		5 720	0	465	0	0		6 654
1990–91	469		5 720	0	465	0	0		6 654
1991–92	469		5 720	0	465	0	0		6 654
1992–93	469		5 720	0	465	0	0		6 654
1993–94	469		6 050	0	466	0	0		6 985
1994–95									7 155
1995–96									7 155
1996–97									7 673
1997–98	479	0	6 881	0	295	0	0		7 826
1998–99 <sup>c</sup>	453	0	6 891	0	466	0			7 810
1999–00	453	0	6 905	0	466	0			7 824
2000–01	453	0	6 905	0	506	0			7 864
2001–02	453	0	6 905	0	979	0			8 337
2002–03	490	0	6 950	0	1 001	0	0		8 441
2003–04	511	0	7 015	0	1 001	0	0		8 527
2004–05	511	0	7 065	0	1 001	0	0		8 577
2005–06	526	0	7 065	0	1 001	0	0		8 592
2006–07	526	0	7 065	0	1 321	0	0	0	8 912
2007–08	526	0	7 065	0	1 321	0	0	0	8 912
2008–09 <sup>e</sup>	2 026	0	7 065	0	1 321	0	0	0	10 412
2009–10	2 176	0	7 065	0	1 321	0	0	0	10 562
2010–11	2 206	0	7 140	0	1 321	0	0	0	10 667

<sup>c</sup> From 1998–99, non-schedule small hydro plants are excluded from estimates.

<sup>e</sup> From 2008–09, SMHEA generation capacity is recorded by state.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.3c** Infrastructure capacity—generation capacity, by type of plant—  
Queensland<sup>f</sup>

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	132		1 789	38	132	0	0		2 091
1976–77	132		1 999	52	163	0	0		2 345
1977–78	132		2 511	48	163	0	0		2 854
1978–79	132		2 734	48	163	0	0		3 076
1979–80	132		2 696	49	163	0	0		3 040
1980–81	132		2 971	48	163	0	0		3 314
1981–82	132		3 246	50	163	0	0		3 591
1982–83	132		3 246	58	178	0	0		3 614
1983–84	382		3 596	60	178	0	0		4 216
1984–85	632		3 946	60	178	0	0		4 816
1985–86	632		3 906	60	178	0	0		4 776
1986–87	632		3 752	59	178	0	0		4 621
1987–88	632		4 042	46	178	0	0		4 898
1988–89	632		4 242	41	178	0	0		5 093
1989–90	632		4 242	46	178	0	0		5 098
1990–91	632		4 242	41	178	0	0		5 093
1991–92	632		4 428	47	178	0	0		5 285
1992–93	632		4 910	29	178	0	0		5 749
1993–94	632		5 435	28	188	0	0		6 283
1994–95									6 896
1995–96									7 040
1996–97									7 041
1997–98	132	500	6 353	29	250	0	0		7 264
1998–99 <sup>c</sup>	132	500	6 517	0	736	216			8 101
1999–00	139	500	6 517	0	1 025	214			8 395
2000–01	139	500	6 937	0	1 026	214			8 816
2001–02	132	500	8 105	0	1 478	476			10 691
2002–03	132	500	8 394	0	1 201	419	0		10 646
2003–04	132	500	8 464	0	1 223	158	0		10 477
2004–05	144	500	8 187	0	741	840	0		10 412
2005–06	144	500	8 187	0	741	840	0		10 412
2006–07	144	500	8 187	0	1 245	840	0	0	10 916
2007–08	144	500	8 937	0	1 245	840	0	0	11 666
2008–09	144	500	8 937	0	1 695	840	0	0	12 116
2009–10	144	500	8 937	0	1 883	1 610	0	0	13 074
2010–11	144	500	8 937	0	2 043	1 610	0	0	13 234

**c** From 1998–99, non-schedule small hydro plants are excluded from estimates.

**f** Prior to 2003–04, Queensland generation capacity did not include generating capacity at Mt Isa.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.3d** Infrastructure capacity—generation capacity, by type of plant—  
South Australia

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	0		1 077	15	156	0	0		1 248
1976–77	0		1 455	16	156	0	0		1 627
1977–78	0		1 455	13	156	0	0		1 624
1978–79	0		1 455	12	231	0	0		1 698
1979–80	0		1 655	13	231	0	0		1 899
1980–81	0		1 855	14	231	0	0		2 100
1981–82	0		1 855	16	231	0	0		2 102
1982–83	0		1 855	17	231	0	0		2 103
1983–84	0		1 855	17	321	0	0		2 193
1984–85	0		2 105	17	321	0	0		2 443
1985–86	0		2 355	17	321	0	0		2 693
1986–87	0		2 355	18	321	0	0		2 694
1987–88	0		2 355	19	321	0	0		2 695
1988–89	0		2 265	19	321	0	0		2 605
1989–90	0		2 025	22	321	0	0		2 368
1990–91	0		2 025	21	321	0	0		2 367
1991–92	0		2 025	21	321	0	0		2 367
1992–93	0		2 025	15	321	0	0		2 361
1993–94	0		1 905	21	321	0	0		2 247
1994–95									2 248
1995–96									2 248
1996–97									2 322
1997–98	0	0	2 080	0	246	0	0		2 326
1998–99	0	0	2 040	0	359	180			2 579
1999–00	0	0	2 010	0	429	180			2 619
2000–01	0	0	2 040	0	439	658			3 137
2001–02	0	0	2 040	0	759	680			3 479
2002–03	0	0	2 040	0	759	660	0		3 459
2003–04	0	0	2 040	0	718	663	0		3 421
2004–05	0	0	2 050	40	718	663	0		3 471
2005–06	0	0	2 050	40	718	663	0		3 471
2006–07	0	0	2 060	50	718	663	0	0	3 491
2007–08	0	0	2 060	50	718	663	95	0	3 586
2008–09	0	0	2 060	50	846	663	353	0	3 972
2009–10	0	0	2 060	50	846	663	481	0	4 100
2010–11	0	0	2 060	50	890	663	764	0	4 426

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.3e** Infrastructure capacity—generation capacity, by type of plant—  
Western Australia

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	2		1 195	85	40	0	0		1 322
1976–77	2		1 195	111	40	0	0		1 348
1977–78	2		1 195	126	40	0	0		1 363
1978–79	2		1 395	113	40	0	0		1 550
1979–80	2		1 395	128	40	0	0		1 565
1980–81	2		1 595	156	40	0	0		1 793
1981–82	2		1 795	162	40	0	0		1 999
1982–83	2		1 740	169	40	0	0		1 951
1983–84	2		1 740	172	40	0	0		1 954
1984–85	2		1 915	155	60	0	0		2 132
1985–86	2		2 040	162	60	0	0		2 264
1986–87	2		2 040	170	60	0	0		2 272
1987–88	0		2 040	172	60	0	0		2 272
1988–89	0		2 040	180	60	0	0		2 280
1989–90	0		2 040	184	240	0	0		2 464
1990–91	0		2 040	192	312	0	0		2 544
1991–92	2		2 040	181	596	0	0		2 819
1992–93	2		2 040	175	596	0	0		2 813
1993–94	2		2 042	198	712	0	2		2 956
1994–95									2 958
1995–96									2 958
1996–97									3 086
1997–98	2	0	2 040	116	932	0	2		3 092
1998–99 <sup>c</sup>	2	0	2 370	131	806	0			3 308
1999–00	2	0	2 310	130	838	0			3 280
2000–01	2	0	2 406	105	802	0			3 315
2001–02	2	0	2 406	106	802	0			3 316
2002–03	2	0	2 250	98	802	0	25		3 273
2003–04	2	0	2 348	0	958	240	22		3 570
2004–05	2	0	2 250	0	958	240	23		3 473
2005–06	2	0	2 250	0	960	240	23		3 475
2006–07 <sup>g</sup>	0	0	2 477	0	2 110	360	191		4 887
2007–08	0	0	2 477	0	2 110	360	191	0	5 138
2008–09	0	0	2 445	0	2 110	680	191	0	5 426
2009–10	0	0	2 653	0	2 440	680	191	0	5 964
2010–11	0	0	2 653	0	2 440	800	191	0	6 084

<sup>c</sup> From 1998–99, non-schedule small hydro plants are excluded from estimates.

<sup>g</sup> The Wholesale Electricity Market commenced in WA in September 2006. From 2006–07, generation capacity includes all market generators in the SWIS with a capacity greater than 10 MW.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.3f** Infrastructure capacity—generation capacity, by type of plant—  
Tasmania

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	1 202		240	6	20	0	0		1 469
1976–77	1 202		240	4	0	0	0		1 447
1977–78	1 396		240	1	0	0	0		1 638
1978–79	1 540		240	2	0	0	0		1 782
1979–80	1 540		240	2	0	0	0		1 782
1980–81	1 540		240	2	0	0	0		1 782
1981–82	1 620		240	2	0	0	0		1 862
1982–83	1 620		240	2	0	0	0		1 863
1983–84	1 700		240	2	0	0	0		1 943
1984–85	1 700		240	3	0	0	0		1 943
1985–86	1 816		240	5	0	0	0		2 061
1986–87	1 931		240	5	0	0	0		2 176
1987–88	2 075		240	5	0	0	0		2 320
1988–89	2 075		240	5	0	0	0		2 320
1989–90	2 075		240	5	0	0	0		2 320
1990–91	2 076		240	5	0	0	0		2 321
1991–92	2 219		240	5	0	0	0		2 464
1992–93	2 195		240	6	0	0	0		2 441
1993–94	2 254		240	6	0	0	0		2 500
1994–95									2 509
1995–96									2 509
1996–97									2 502
1997–98	2 262	0	240	6	0	0	1		2 509
1998–99 <sup>c</sup>	2 262	0	240	6	0	0			2 508
1999–00	2 262	0	240	6	0	0			2 508
2000–01	2 262	0	240	6	0	0			2 508
2001–02	2 276	0	240	26	0	0			2 542
2002–03	2 276	0	240	26	0	0	0		2 542
2003–04	2 266	0	240	0	0	0	65		2 571
2004–05	2 265	0	240	0	0	0	65		2 570
2005–06	2 278	0	240	0	0	0	65		2 583
2006–07	2 274	0	240	0	105	0	140		2 759
2007–08	2 274	0	240	0	105	0	140	0	2 759
2008–09	2 274	0	0	0	165	210	140	0	2 789
2009–10	2 283	0	0	0	283	208	140	0	2 914
2010–11	2 283	0	0	0	283	208	140	0	2 914

<sup>c</sup> From 1998–99, non-schedule small hydro plants are excluded from estimates.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.



**Table E 1.3g** Infrastructure capacity—generation capacity, by type of plant—Northern Territory<sup>h</sup>

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
<i>megawatts</i>									
1975–76	0		94	40	10	0	0		144
1976–77	0		94	40	10	0	0		144
1977–78	0		118	40	10	0	0		168
1978–79	0		141	47	10	0	0		198
1979–80	0		141	47	40	0	0		228
1980–81	0		141	56	40	0	0		237
1981–82	0		141	62	40	0	0		243
1982–83	0		141	66	40	0	0		247
1983–84	0		141	66	40	0	0		247
1984–85	0		141	72	30	0	0		243
1985–86	0		141	72	30	0	0		243
1986–87	0		141	81	190	0	0		412
1987–88	0		0	72	162	95	0		330
1988–89	0		0	69	175	95	0		340
1989–90	0		0	92	175	95	0		362
1990–91	0		0	94	180	95	0		369
1991–92	0		0	99	184	95	0		378
1992–93	0		0	99	186	95	0		381
1993–94	0		0	85	188	95	0		368
1994–95									417
1995–96									427
1996–97									436
1997–98	0	0	0	101	209	124	0		434
1998–99	0	0	0	103	229	124			455
1999–00	0	0	0	149	229	123			500
2000–01	0	0	0	136	236	123			495
2001–02	0	0	0	136	245	123			504
2002–03	0	0	0	136	245	123	0		504
2003–04	0	0	0	36	316	96	0		449
2004–05	0	0	0	74	277	131	0		482
2005–06	0	0	0	72	272	131	0		475
2006–07	0	0	0	74	266	131	0	0	472
2007–08	0	0	0	76	309	131	0	0	516
2008–09	0	0	0	76	352	131	0	0	560
2009–10	0	0	0	77	352	131	0	0	561
2010–11	0	0	0	77	352	131	0	0	561

**h** The basis for reporting generating plant in Northern Territory changed in 2003–04 and should not be compared to previous years.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E I.3h** Infrastructure capacity—generation capacity, by type of plant—Snowy Mountains Hydro Electric Authority

End of financial year	Hydro	Pump storage	Steam	Internal combustion	Gas turbine	Combined cycle	Wind	Photovoltaic	Total
	<i>megawatts</i>								
1975–76	3 740		0	0	0	0	0		3 740
1976–77	3 740		0	0	0	0	0		3 740
1977–78	3 740		0	0	0	0	0		3 740
1978–79	3 740		0	0	0	0	0		3 740
1979–80	3 740		0	0	0	0	0		3 740
1980–81	3 740		0	0	0	0	0		3 740
1981–82	3 740		0	0	0	0	0		3 740
1982–83	3 740		0	0	0	0	0		3 740
1983–84	3 740		0	0	0	0	0		3 740
1984–85	3 740		0	0	0	0	0		3 740
1985–86	3 740		0	0	0	0	0		3 740
1986–87	3 740		0	0	0	0	0		3 740
1987–88	3 740		0	0	0	0	0		3 740
1988–89	3 740		0	0	0	0	0		3 740
1989–90	3 740		0	0	0	0	0		3 740
1990–91	3 740		0	0	0	0	0		3 740
1991–92	3 740		0	0	0	0	0		3 740
1992–93	3 740		0	0	0	0	0		3 740
1993–94	3 740		0	0	0	0	0		3 740
1994–95									3 756
1995–96									3 756
1996–97									3 756
1997–98	3 006	750	0	0	0	0	0		3 756
1998–99 <sup>c</sup>	3 006	750	0	0	0	0	0		3 756
1999–00	3 006	750	0	0	0	0	0		3 756
2000–01	3 006	750	0	0	0	0	0		3 756
2001–02	3 006	750	0	0	0	0	0		3 756
2002–03	3 006	750	0	0	0	0	0		3 756
2003–04	<sup>d</sup> 3 000	676	0	0	0	0	0		3 676
2004–05	3 676	0	0	0	0	0	0		3 676
2005–06	3 676	0	0	0	0	0	0		3 676
2006–07	3 676	0	0	0	0	0	0	0	3 676
2007–08 <sup>e</sup>	3 676	0	0	0	0	0	0	0	3 676

<sup>c</sup> From 1998–99, non-schedule small hydro plants are excluded from estimates.

<sup>d</sup> From 2003–04, generation capacity of Blowering is included in NSW hydro figures, where previously they were shown in Snowy Mountains Hydro Electric Authority.

<sup>e</sup> From 2008–09, SMHEA generation capacity is recorded by state.

Note: Data are not readily available for missing years.

Note: Figures represent commissioned scheduled and semi-scheduled generators only and exclude embedded, non-grid private generators and non-scheduled intermittent generators.

Source: esaa (2005) and esaa updates.

**Table E 1.4a** Infrastructure quality—electricity distribution supply reliability measures, National Electricity Market, by state—System Average Interruption Duration Index (SAIDI)

Financial year	New South Wales and the Australian Capital Territory	Victoria	Queensland	South Australia	Tasmania	National Electricity Market weighted average	Western Australia
<i>minutes</i>							
1999–2000		156					
2000–01	175	152	314	164	198	198	
2001–02	324	151	275	147	198	243	
2002–03	193	161	265	184	214	200	
2003–04	279	132	434	164	324	261	
2004–05	218	165	283	169	314	215	
2005–06	285	165	629	199	292	285	
2006–07	461	197	233	184	256	267	325
2007–08	269	228	263	150	304	213	317
2008–09	303	255	365	161	266	255	
2009–10	248	170	366	217	457	225	
2010–11	313	175	1122	365	304	420	

Note: Data are not readily available for missing years.

Source: AER (2012).

**Table E 1.4b** Infrastructure quality—electricity distribution supply reliability measures, National Electricity Market, by state—System Average Interruption Frequency Index (SAIFI)

Financial year	New South Wales and the Australian Capital Territory	Victoria	Queensland	South Australia	Tasmania	National Electricity Market weighted average	Western Australia
<i>average number of times a customer's supply is interrupted per year</i>							
1999–2000	1.7	2.1			2.3		
2000–01	2.5	2.0	3.0	1.7	2.8	2.4	
2001–02	2.6	2.0	2.8	1.6	2.3	2.4	
2002–03	1.4	2.2	2.7	1.8	2.4	2.0	
2003–04	1.6	1.9	3.4	1.7	3.1	2.3	
2004–05	1.6	1.8	2.7	1.7	3.1	2.0	
2005–06	2.8	1.9	3.1	1.9	2.9	2.2	
2006–07	2.8	2.1	2.1	1.8	2.6	2.0	3.3
2007–08	2.5	1.7	2.4	1.5	2.6	1.9	3.3
2008–09	2.7	2.5	2.9	1.5	2.1	2.3	
2009–10	2.4	1.7	2.4	1.9	2.5	1.9	
2010–11	2.6	1.6	2.4	2.5	2.3	1.9	

Note: Data are not readily available for missing years.

Source: AER (2012).



## CHAPTER 2

# Inputs to energy supply

**Table E 2.1** Energy inputs—Australia’s economic demonstrated mineral energy reserves

End of calendar year	Black coal	Brown coal (lignite)	Uranium	Crude oil	Condensate	LPG	Natural gas
	<i>gigatonnes</i>	<i>gigatonnes</i>	<i>kilotonnes</i>	<i>gigalitres</i>	<i>gigalitres</i>	<i>gigalitres</i>	<i>billion cubic metres</i>
1982				260	83	123	641
1983				235	74	87	629
1984				240	81	86	689
1985				217	86	88	709
1986				242	116	99	902
1987				246	119	97	1 069
1988				255	122	130	1 033
1989				260	119	114	955
1990				270	118	114	927
1991				258	124	131	950
1992				244	133	135	1 006
1993				249	136	133	992
1994				297	156	154	1 292
1995				277	183	144	1 264
1996				240	193	174	1 360
1997				266	192	184	1 494
1998	51.1	41.1	607	243	273	243	1 989
1999	44.4	37.7	571	215	277	262	1 989
2000	42.6	37.7	654	194	300	292	2 203
2001	40.8	37.7	648	206	289	293	2 667
2002	39.7	37.6	689	176	277	274	2 528
2003	38.3	37.5	675	186	247	210	2 462
2004	40.4	37.5	701	157	301	214	2 587
2005	39.2	37.4	716	169	257	214	2 428
2006	39.6	37.3	714	160	236	203	2 421
2007	38.9	37.3	983	162	228	191	2 362
2008	39.2	37.2	1 163	188	340	174	3 145
2009	43.8	37.1	1 223	170	340	166	2 984
2010	49.2	44.2	1 158	154	335	153	2 918
2011	57.5	44.2					

Note: Data are not readily available for missing years.

Source: GA (2013), GA (2012)

**Table E 2.2a** Energy inputs—Australian electricity generation, input fuel—energy units

Financial year	Black coal	Brown coal (including briquettes)	Petroleum products	Natural gas	Electricity
			<i>petajoules</i>		
1974–75	375.1	243.6	49.5	34.3	37.3
1975–76	373.4	263.6	51.4	40.3	38.9
1976–77	438.7	282.2	53.0	53.0	43.5
1977–78	471.4	276.2	58.7	57.0	45.1
1978–79	481.8	291.6	59.8	66.6	49.9
1979–80	544.8	300.6	51.2	76.3	52.6
1980–81	570.6	293.3	49.9	106.5	55.9
1981–82	578.4	338.7	54.0	130.9	57.2
1982–83	619.1	313.4	47.6	117.7	55.7
1983–84	659.1	302.3	46.5	124.1	58.7
1984–85	695.1	352.2	41.5	111.0	66.6
1985–86	708.9	332.1	36.1	134.4	67.0
1986–87	730.9	389.2	27.7	129.1	69.4
1987–88	753.3	407.6	22.2	139.8	67.9
1988–89	799.0	460.8	29.5	143.6	73.7
1989–90	836.0	437.6	40.0	161.2	74.5
1990–91	848.7	470.0	40.8	121.3	71.6
1991–92	872.4	481.4	28.8	132.0	75.9
1992–93	905.6	456.9	29.0	136.4	75.2
1993–94	917.4	462.5	29.1	146.3	75.6
1994–95	946.6	480.5	32.8	167.4	79.4
1995–96	1 001.4	503.8	34.2	151.5	80.9
1996–97	1 018.5	546.5	27.2	148.1	81.3
1997–98	1 061.4	627.3	25.1	166.9	91.3
1998–99	1 081.2	662.7	23.7	196.5	97.8
1999–00	1 100.2	665.4	22.2	206.8	99.8
2000–01	1 176.1	665.8	19.2	241.7	102.7
2001–02	1 213.7	670.0	19.2	247.2	104.2
2002–03	1 176.2	693.5	28.0	224.9	102.0
2003–04	1 245.1	711.1	34.6	241.7	113.5
2004–05	1 279.5	708.0	36.1	250.3	108.0
2005–06	1 304.0	724.0	38.6	239.0	109.1
2006–07	1 325.4	721.1	37.1	334.9	111.6
2007–08	1 297.4	723.9	52.5	367.6	108.7
2008–09	1 361.2	803.8	38.9	427.6	115.8
2009–10	1 223.2	741.7	34.2	432.3	115.0
2010–11	1 147.9	728.1	34.1	505.5	108.3

Source: BREE (2012a).

**Table E 2.2b** Australian electricity generation, input fuel—physical units

Financial year	Black coal	Brown coal (including briquettes)	Petroleum products	Natural gas	Electricity
	<i>million tonnes</i>	<i>million tonnes</i>	<i>megalitres</i>	<i>megalitres</i>	<i>gigawatt hours</i>
1974–75	15.0	24.6	1 447	870 874	10 361
1975–76	15.0	26.7	1 503	1 023 214	10 806
1976–77	17.8	28.4	1 550	1 345 666	12 083
1977–78	19.3	27.8	1 716	1 447 225	12 528
1978–79	19.7	29.2	1 749	1 690 968	13 861
1979–80	22.4	30.0	1 497	1 937 251	14 611
1980–81	23.5	29.3	1 459	2 704 026	15 528
1981–82	23.5	34.1	1 579	3 323 540	15 889
1982–83	25.3	31.7	1 392	2 988 393	15 472
1983–84	27.4	30.5	1 360	3 150 889	16 306
1984–85	28.8	35.7	1 213	2 818 281	18 500
1985–86	29.4	33.6	1 056	3 412 405	18 611
1986–87	30.7	39.4	810	3 277 838	19 278
1987–88	31.5	41.3	649	3 549 510	18 861
1988–89	33.6	46.8	863	3 645 992	20 472
1989–90	35.3	44.4	1 170	4 092 855	20 694
1990–91	36.0	47.8	1 193	3 079 797	19 889
1991–92	37.0	49.0	842	3 351 469	21 083
1992–93	38.4	46.5	848	3 463 185	20 889
1993–94	39.1	47.1	851	3 714 545	21 000
1994–95	40.2	48.9	959	4 250 272	22 056
1995–96	43.0	51.3	1 000	3 846 572	22 472
1996–97	43.6	55.6	795	3 760 247	22 583
1997–98	45.8	63.9	734	4 237 577	25 361
1998–99	46.8	67.5	693	4 989 119	27 167
1999–00	46.0	67.7	649	5 250 635	27 722
2000–01	50.5	67.2	561	6 136 743	28 528
2001–02	51.9	67.6	561	6 276 387	28 944
2002–03	52.8	70.1	819	5 710 192	28 333
2003–04	55.8	72.0	1 011	6 136 743	31 528
2004–05	57.3	71.6	1 055	6 355 096	30 000
2005–06	58.4	73.2	1 129	6 068 190	30 306
2006–07	59.3	73.0	1 084	8 503 083	31 000
2007–08	58.0	73.3	1 534	9 333 333	30 194
2008–09	60.5	81.6	1 139	10 856 728	32 167
2009–10	54.8	75.3	999	10 976 061	31 944
2010–11	51.6	73.8	998	12 834 646	30 081

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 2.3a** Energy inputs—Australian gas production and distribution, input fuel—energy units

Financial year	Black coal	LPG and other petroleum products	Natural gas	Town gas	Electricity
	<i>petajoules</i>				
1974–75	1.8	18.4	8.1	1.9	0.1
1975–76	1.5	17.1	8.1	1.9	0.1
1976–77	1.6	10.8	16.6	2.1	0.1
1977–78	1.1	4.3	19.3	2.1	0.1
1978–79	0.8	4.2	18.9	1.9	0.1
1979–80	0.6	4.2	20.3	1.9	0.1
1980–81	0.7	4.1	19.3	2.0	0.1
1981–82	0.3	4.0	21.0	1.9	0.1
1982–83	0.2	3.3	22.0	1.7	0.1
1983–84	0.1	3.2	22.3	1.5	0.1
1984–85	0.0	2.0	23.0	1.3	0.1
1985–86	0.0	1.8	21.8	1.0	0.1
1986–87	0.0	1.6	21.8	0.8	0.1
1987–88	0.0	1.4	19.4	0.7	0.1
1988–89	0.0	1.4	18.4	0.4	0.1
1989–90	0.0	1.5	17.9	0.4	0.1
1990–91	0.0	1.3	15.8	0.2	0.1
1991–92	0.0	1.3	15.7	0.2	0.0
1992–93	0.0	1.3	14.7	0.2	0.0
1993–94	0.0	0.9	14.0	0.2	0.0
1994–95	0.0	1.0	13.7	0.2	0.0
1995–96	0.0	1.0	12.9	0.2	0.0
1996–97	0.0	1.0	13.0	0.1	0.0
1997–98	0.0	1.0	13.6	0.0	0.0
1998–99	0.0	1.0	14.2	0.0	0.0
1999–00	0.0	1.1	14.7	0.0	0.1
2000–01	0.0	1.0	15.3	0.0	0.1
2001–02	0.0	1.0	16.8	0.0	0.1
2002–03	0.0	0.9	17.9	0.0	0.1
2003–04	0.0	1.1	20.0	0.0	0.1
2004–05	0.0	1.4	15.3	0.0	0.0
2005–06	0.0	1.4	15.2	0.0	0.0
2006–07	0.0	0.9	12.3	0.0	0.0
2007–08	0.0	0.7	12.6	0.0	0.0
2008–09	0.0	0.5	12.3	0.0	0.0
2009–10	0.0	0.4	12.2	0.0	0.0
2010–11	0.0	0.3	12.1	0.0	0.0

Source: BREE (2012a).



**Table E 2.3b** Australian natural gas production and distribution, input fuel—physical units

Financial year	Black coal	LPG and other petroleum products	Natural gas	Town gas	Electricity
	<i>million tonnes</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>gigawatt hours</i>
1974–75	0.1	543	205 658	48 241	28
1975–76	0.1	517	205 658	48 241	28
1976–77	0.1	333	421 473	53 319	28
1977–78	0.0	144	490 025	53 319	28
1978–79	0.0	141	479 869	48 241	28
1979–80	0.0	143	515 415	48 241	28
1980–81	0.0	138	490 025	50 780	28
1981–82	0.0	135	533 188	48 241	28
1982–83	0.0	111	558 578	43 163	28
1983–84	0.0	110	566 195	38 085	28
1984–85	0.0	75	583 968	33 007	28
1985–86	0.0	68	553 500	25 390	28
1986–87	0.0	60	553 500	20 312	28
1987–88	0.0	53	492 564	17 773	28
1988–89	0.0	53	467 174	10 156	28
1989–90	0.0	57	454 480	10 156	28
1990–91	0.0	49	401 161	5 078	28
1991–92	0.0	49	398 622	5 078	0
1992–93	0.0	49	373 232	5 078	0
1993–94	0.0	34	355 459	5 078	0
1994–95	0.0	38	347 842	5 078	0
1995–96	0.0	38	327 530	5 078	0
1996–97	0.0	38	330 069	2 539	0
1997–98	0.0	38	345 303	0	0
1998–99	0.0	38	360 537	0	0
1999–00	0.0	42	373 232	0	28
2000–01	0.0	38	388 466	0	28
2001–02	0.0	38	426 551	0	28
2002–03	0.0	34	454 480	0	22
2003–04	0.0	42	507 798	0	22
2004–05	0.0	51	388 466	0	3
2005–06	0.0	54	385 927	0	3
2006–07	0.0	36	312 296	0	6
2007–08	0.0	27	319 913	0	3
2008–09	0.0	20	312 296	0	3
2009–10	0.0	15	309 757	0	3
2010–11	0.0	11	307 513	0	3

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



## CHAPTER 3

# Energy production and usage

**Table E 3.1a** Energy production and trade—Australian energy production (primary fuels), by fuel type—New South Wales

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>i</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>j</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	34 828		1 418		0		7 489		
1975–76	33 312		1 371		0		7 986		
1976–77	38 262		1 337		0		5 529		
1977–78	40 592		1 285		0		6 231		
1978–79	40 995		1 309		0		7 169		
1979–80	39 970		1 341		0		4 786		
1980–81	47 923		1 359		0		5 586		
1981–82	50 077		1 376		0		5 455		
1982–83	56 669		1 405		0		4 029		
1983–84	55 014		1 507		0		4 161		
1984–85	57 496		1 552		0		5 288		
1985–86	63 159		1 590		0		5 310		
1986–87	72 343		1 624		0		4 487		
1987–88	62 403		1 657		0		4 463		
1988–89	66 605		1 688		0		4 568		
1989–90	76 479		1 754		0		4 741		
1990–91	78 491		1 805		0		6 237		
1991–92	82 339		1 888		0		5 298		
1992–93	82 745		1 950		0		6 642		
1993–94	82 779		1 970		0		5 770		
1994–95	87 410		1 992		0		5 728		
1995–96	90 856		1 975		0		5 058		
1996–97	98 287		1 983		50		5 279		
1997–98	107 708		2 006		112		4 056		
1998–99	103 421		2 040		190		4 805		
1999–00	105 193		2 027		216		5 030		
2000–01	110 240		1 969		222		5 157		
2001–02	114 329		1 257		230		4 274		
2002–03	111 533		1 624		211		4 868		
2003–04	114 239		1 212		213		4 811		
2004–05	119 835		1 178		210		4 434		
2005–06	124 611		1 356		260		5 621		
2006–07	130 885		1 562		285		4 639		
2007–08	134 978		1 673		140		2 642		
2008–09	137 798		1 812		125		3 174		
2009–10	147 299		1 977		147		3 821		
2010–11	146 209		2 106		146		5 267		

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.1b** Energy production and trade—Australian energy production (primary fuels), by fuel type—Victoria

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>j</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>i</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	0	np	1 874	23 103	2 414	64	991		
1975–76	0	np	1 827	24 027	2 793	73	810		
1976–77	0	np	1 739	25 177	3 171	103	538		
1977–78	0	np	1 764	26 377	3 366	129	515		
1978–79	0	np	1 786	26 239	3 810	144	557		
1979–80	0	np	1 793	25 192	4 347	147	584		
1980–81	0	np	1 853	24 405	5 264	139	670		
1981–82	0	np	1 921	24 024	5 919	150	737		
1982–83	0	np	1 979	23 093	5 631	168	929		
1983–84	0	np	1 885	27 181	5 957	175	532		
1984–85	0	np	1 822	29 541	5 444	172	525		
1985–86	0	np	1 856	28 716	5 643	159	697		
1986–87	0	np	1 871	27 325	5 422	154	706		
1987–88	0	np	1 834	25 800	5 376	153	945		
1988–89	0	np	1 870	21 387	5 645	153	688		
1989–90	0	np	1 953	21 362	6 393	158	803		
1990–91	0	np	1 960	19 983	5 679	146	765		
1991–92	0	np	1 981	19 431	5 899	149	734		
1992–93	0	np	2 031	20 580	6 053	162	713		
1993–94	0	np	2 106	19 267	5 793	162	1 117		
1994–95	0	np	2 110	16 948	6 415	181	1 042		
1995–96	0	np	2 141	14 499	6 520	165	642		
1996–97	0	np	2 154	14 052	5 924	156	1 024		
1997–98	0	np	2 088	15 856	5 975	176	1 152		
1998–99	0	np	2 067	11 366	5 655	121	748		
1999–00	0	np	2 049	13 528	5 860	140	512		
2000–01	0	np	2 003	11 134	6 359	332	625		
2001–02	0	np	1 995	10 884	6 533	269	761		
2002–03	0	np	2 197	9 704	6 532	163	1 064		
2003–04	0	np	2 093	8 851	7 747	172	854		
2004–05	0	np	1 940	7 449	7 758	182	817		
2005–06	0	np	1 727	6 399	7 435	187	465		
2006–07	0	np	1 542	6 323	7 686	190	590		
2007–08	0	np	1 864	6 087	8 020	195	1 583		
2008–09	0	np	1 416	6 290	7 022	139	558		
2009–10	0	np	1 441	6 295	9 080	191	844		
2010–11	0	np	1 466	6 119	9 841	164	1 119		

np: Not available for publication but included in total.

i NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

j Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.1c** Energy production and trade—Australian energy production (primary fuels), by fuel type—Queensland

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>i</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>j</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	23 902		572	73	258		694		0
1975–76	23 921		552	73	238		804		120
1976–77	25 671		526	65	237		814		486
1977–78	24 954		533	62	277		598		493
1978–79	26 939		543	71	280		710		680
1979–80	27 510		565	80	313		569		813
1980–81	32 849		517	81	338		727		836
1981–82	34 276		466	86	356		720		907
1982–83	35 812		409	103	434		428		354
1983–84	44 036		394	284	434		480		0
1984–85	54 288		397	1 263	479		1 118		0
1985–86	63 997		399	1 809	517		1 123		0
1986–87	68 820		386	1 937	524		979		0
1987–88	65 819		390	1 663	601		770		0
1988–89	74 118		406	1 661	541		874		0
1989–90	74 931		433	1 565	579		978		0
1990–91	78 363		443	1 407	977		1 027		0
1991–92	84 085		483	1 328	1 031		758		0
1992–93	85 301		498	1 220	1 038		685		0
1993–94	85 648		502	1 192	1 169		834		0
1994–95	94 381		508	1 206	1 180		756		0
1995–96	93 763		493	1 144	1 250		883		0
1996–97	99 437		498	1 029	1 247		897		0
1997–98	105 752		506	901	1 333		600		0
1998–99	112 634		510	873	1 555		896		0
1999–00	124 348		502	781	1 940		926		0
2000–01	138 286		505	735	2 143		868		0
2001–02	148 587		501	719	2 247		594		0
2002–03	153 602		651	721	2 098		354		0
2003–04	160 183		681	665	1 942		562		0
2004–05	173 736		698	847	1 679		528		0
2005–06	171 689		731	681	2 341		552		0
2006–07	184 082		650	965	2 834		880		0
2007–08	180 518		679	1 100	3 782		924		0
2008–09	190 450		586	1 011	4 083		820		0
2009–10	204 068		574	861	5 353		573		0
2010–11	205 521		482	897	6 040		966		0

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years

Source: BREE (2012a)

**Table E 3.1d** Energy production and trade—Australian energy production (primary fuels), by fuel type—Western Australia

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>j</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>j</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	1 877		701	2 095	831		13		
1975–76	2 143		685	1 962	843		10		
1976–77	2 376		628	1 843	858		1		
1977–78	2 424		603	1 802	819		1		
1978–79	2 407		610	1 708	842		0		
1979–80	3 029		621	1 507	867		0		
1980–81	3 118		586	1 530	880		0		
1981–82	3 415		530	1 241	836		1		
1982–83	3 962		526	1 325	1 003		2		
1983–84	3 925		522	1 260	1 012		0		
1984–85	3 654		537	1 415	1 911		2		
1985–86	3 750		503	1 812	2 928		3		
1986–87	3 782		503	2 174	3 377		0		
1987–88	3 686		541	3 100	3 887		0		
1988–89	3 891		597	3 205	4 071		0		
1989–90	4 125		633	5 809	7 446		1		
1990–91	5 206		656	6 897	9 389		0		
1991–92	5 477		622	7 350	10 439		1		
1992–93	5 395		638	6 693	11 866		6		
1993–94	5 153		682	7 639	13 579		4		
1994–95	5 824		695	12 680	15 774		4		
1995–96	5 971		702	14 322	16 407		2		
1996–97	5 593		713	15 974	16 734		6		
1997–98	5 798		715	17 561	18 140		200		
1998–99	5 741		719	16 848	18 545		206		
1999–00	6 628		723	19 489	18 885		207		
2000–01	6 193		724	20 623	19 178		202		
2001–02	6 595		770	23 135	19 444		212		
2002–03	6 136		724	22 863	20 179		207		
2003–04	5 981		691	21 166	20 561		206		
2004–05	6 099		547	20 048	24 582		212		
2005–06	6 701		611	18 811	25 887		163		
2006–07	6 018		700	21 219	27 198		150		
2007–08	6 231		743	19 397	27 499		51		
2008–09	6 998		641	19 559	29 712		np		
2009–10	6 713		592	18 693	31 939		np		
2010–11	6 035		602	18 097	33 530		np		

np: Not available for publication.

i NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

j Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.1e** Energy production and trade—Australian energy production (primary fuels), by fuel type—South Australia

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>i</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>i</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	1 793		666	35	1 314	0			0
1975–76	1 819		655	42	1 502	0			0
1976–77	1 945		550	43	2 132	0			0
1977–78	1 780		533	46	2 591	0			0
1978–79	1 471		532	49	2 932	0			0
1979–80	1 717		562	44	3 567	0			0
1980–81	1 732		581	61	4 037	0			0
1981–82	1 436		568	65	4 537	0			0
1982–83	1 451		606	453	4 686	0			0
1983–84	1 328		555	1 233	4 907	0			0
1984–85	1 745		563	2 525	5 307	28			0
1985–86	2 167		606	3 225	5 373	37			0
1986–87	2 426		612	3 034	5 444	26			0
1987–88	2 519		620	3 043	5 348	36			0
1988–89	2 758		632	3 222	5 452	32			912
1989–90	2 943		656	3 137	5 512	26			1 005
1990–91	2 527		686	3 053	5 037	26			1 458
1991–92	2 887		711	2 895	5 166	27			1 349
1992–93	2 785		753	2 596	5 242	23			1 351
1993–94	2 692		875	2 428	5 512	17			1 271
1994–95	3 039		865	2 213	5 568	21			1 073
1995–96	2 447		863	2 014	5 272	38			1 635
1996–97	2 594		868	1 862	5 444	279			1 737
1997–98	2 697		838	1 851	5 627	390			1 626
1998–99	2 799		840	1 946	5 958	441			2 012
1999–00	2 874		830	1 767	6 105	472			4 073
2000–01	3 160		824	1 722	6 059	344			4 963
2001–02	3 365		551	1 636	6 045	269			4 017
2002–03	3 240		742	1 546	5 037	243			3 860
2003–04	3 208		717	1 448	3 774	207			4 902
2004–05	3 381		659	1 285	1 538	225			5 420
2005–06	3 479		653	1 294	1 524	269			4 790
2006–07	3 880		704	1 852	1 467	249			4 328
2007–08	3 874		784	2 094	1 180	259			4 850
2008–09	3 785		635	2 653	1 178	256			4 633
2009–10	3 840		578	2 769	1 368	120			2 847
2010–11	3 840		565	2 872	1 053	131			4 392

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.1f** Energy production and trade—Australian energy production (primary fuels), by fuel type—Tasmania

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>j</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>i</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	101		395				5 918		
1975–76	133		385				5 899		
1976–77	163		378				6 789		
1977–78	156		378				7 113		
1978–79	195		381				7 599		
1979–80	163		385				7 843		
1980–81	208		405				7 844		
1981–82	249		448				7 659		
1982–83	329		451				7 526		
1983–84	280		524				7 715		
1984–85	321		554				8 033		
1985–86	310		587				8 381		
1986–87	394		621				8 378		
1987–88	380		689				8 786		
1988–89	407		750				8 900		
1989–90	356		763				8 357		
1990–91	350		783				8 076		
1991–92	342		733				8 977		
1992–93	301		758				8 907		
1993–94	378		723				8 924		
1994–95	401		736				8 709		
1995–96	400		751				9 146		
1996–97	392		761				9 646		
1997–98	414		764				9 725		
1998–99	419		732				9 908		
1999–00	387		724				10 045		
2000–01	339		717				10 081		
2001–02	360		784				10 213		
2002–03	343		711				9 997		
2003–04	350		716				9 898		
2004–05	388		702				9 620		
2005–06	436		653				9 236		
2006–07	562		808				8 258		
2007–08	616		790				6 854		
2008–09	616		753				7 314		
2009–10	616		715				8 307		
2010–11	616		627				9 452		

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).



**Table E 3.1g** Energy production and trade—Australian energy production (primary fuels), by fuel type—Northern Territory

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>i</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>j</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75			19	0	0				0
1975–76			19	0	0				0
1976–77			19	0	0				0
1977–78			19	0	0				0
1978–79			19	0	0				0
1979–80			19	0	0				0
1980–81			19	0	0				0
1981–82			19	0	0				4 157
1982–83			19	0	0				4 231
1983–84			19	0	3				4 384
1984–85			20	75	26				4 327
1985–86			21	187	31				4 450
1986–87			21	935	127				4 505
1987–88			21	1 478	276				4 193
1988–89			21	2 542	259				3 595
1989–90			22	3 907	324				3 084
1990–91			23	4 164	341				2 909
1991–92			24	3 893	353				2 980
1992–93			25	3 425	354				1 335
1993–94			26	2 120	351				1 462
1994–95			27	1 734	378				1 548
1995–96			27	1 545	441				3 453
1996–97			25	1 140	462				4 238
1997–98			25	936	479				4 162
1998–99			25	770	494				4 375
1999–00			25	6 268	535				4 144
2000–01			10	9 682	529				4 586
2001–02			6	6 059	540				3 806
2002–03			6	4 871	452				5 312
2003–04			6	3 223	424				4 667
2004–05			3	2 309	479				5 544
2005–06			2	1 852	494				5 184
2006–07			3	1 843	532				5 261
2007–08			3	903	541				5 273
2008–09			0	824	537				5 678
2009–10			0	1 061	796				4 262
2010–11			0	668	930				2 677

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.1h** Energy production and trade—Australian energy production (primary fuels), by fuel type—Australia

Financial year	Black coal	Brown coal	Bagasse and wood	Crude oil, NGL <sup>i</sup> and naturally occurring LPG	Natural gas <sup>j</sup>	Ethane	Hydro-electricity	Solar hotwater	Uranium <sup>i</sup>
	kilotonnes	kilotonnes	kilotonnes	megalitres	gigalitres	gigalitres	GWh	petajoules	tonnes
1974–75	62 501	29 335	11 887	25 306	4 817	64	15 105	0.14	0
1975–76	61 328	31 031	12 085	26 059	5 376	73	15 509	0.19	484
1976–77	68 417	32 939	12 314	27 128	6 398	103	13 670	0.27	480
1977–78	69 906	32 253	12 255	28 287	7 053	129	14 458	0.39	696
1978–79	72 007	33 572	11 448	28 067	7 864	144	16 035	0.57	951
1979–80	72 389	34 612	11 604	26 823	9 094	147	13 782	0.81	1 837
1980–81	85 830	33 835	12 492	26 077	10 519	139	14 827	1.03	3 944
1981–82	89 453	39 003	13 083	25 419	11 648	150	14 572	1.27	5 968
1982–83	98 223	36 159	12 921	24 978	11 754	168	12 914	1.55	4 334
1983–84	104 583	34 585	12 629	29 960	12 312	175	12 888	1.81	5 836
1984–85	117 504	40 125	13 070	34 820	13 167	200	14 966	2.11	4 327
1985–86	133 383	38 242	13 036	35 750	14 495	195	15 514	2.49	4 450
1986–87	147 765	44 230	13 316	35 431	14 895	180	14 550	2.40	4 505
1987–88	134 807	45 918	13 480	35 187	15 483	196	14 964	2.40	4 193
1988–89	147 778	51 047	14 409	32 018	15 964	189	15 030	2.41	4 507
1989–90	158 834	48 932	14 744	35 779	20 077	191	14 880	2.41	4 089
1990–91	164 937	51 913	14 539	35 502	21 049	180	16 103	2.41	4 367
1991–92	175 130	53 610	13 088	34 898	23 297	182	15 768	2.46	4 329
1992–93	176 527	50 433	14 811	34 483	24 417	194	16 953	2.46	2 686
1993–94	176 650	51 444	15 687	32 646	26 567	188	16 649	2.48	2 733
1994–95	191 055	53 790	16 488	34 799	29 264	203	16 239	2.53	2 622
1995–96	193 437	56 159	17 572	33 900	29 890	203	15 731	2.56	5 088
1996–97	206 303	60 750	18 452	34 838	29 861	435	16 852	2.57	5 975
1997–98	222 369	67 971	18 718	38 398	31 666	566	15 733	2.59	5 788
1998–99	225 014	69 447	18 346	31 802	32 397	562	16 563	2.63	6 387
1999–00	239 430	70 237	17 891	41 833	33 541	612	16 720	2.65	8 217
2000–01	258 218	68 118	17 013	43 895	34 490	676	16 933	2.60	9 549
2001–02	273 236	70 026	15 420	42 432	35 039	538	16 054	2.71	7 823
2002–03	271 613	70 049	16 561	39 704	34 510	406	16 490	2.78	9 172
2003–04	280 753	69 551	16 648	35 352	34 660	380	16 331	2.62	9 569
2004–05	300 057	70 533	17 009	31 939	36 247	407	15 612	2.62	10 964
2005–06	303 437	71 216	17 093	29 038	37 941	456	16 029	2.43	9 974
2006–07	321 547	69 493	17 514	32 201	40 002	439	14 517	6.00	9 589
2007–08	322 343	69 907	18 082	29 581	41 163	454	12 057	6.67	10 123
2008–09	335 861	72 037	11 347	30 337	42 656	395	11 869	8.24	10 311
2009–10	358 697	72 591	11 103	29 680	48 682	311	13 549	10.13	7 109
2010–11	358 381	69 502	10 310	28 652	51 539	295	16 807	10.99	7 069

<sup>i</sup> NGL represents natural gas liquid hydrocarbons other than methane, while LNG represents liquid natural gas (principally methane).

<sup>j</sup> Australian energy production of uranium is measured in terms of tonnes of uranium metal equivalent, rather than ore extracted.

Note: Data are not readily available for missing years.

Source: BREE (2012a).

**Table E 3.2** Energy production and trade—Australian energy imports, by fuel type

Financial year	Petroleum products								
	Natural gas	Crude oil and other refinery fuel	LPG	Automotive gasoline	Aviation turbine fuel	Automotive diesel oil	Fuel oil	Bitumen, lubricants and greases	Other petroleum products
	<i>gigalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>	<i>megalitres</i>
1974–75	0	10 171	0	407	96	479	2 574	69	457
1975–76	0	9 702	0	876	101	377	2 123	59	473
1976–77	0	10 116	0	922	129	492	2 234	28	388
1977–78	0	11 214	0	758	100	529	2 001	57	658
1978–79	0	10 407	0	708	193	411	2 482	61	360
1979–80	0	11 263	0	488	178	620	2 649	77	528
1980–81	0	11 450	1	419	150	637	2 070	71	400
1981–82	0	12 460	2	399	106	523	1 529	61	319
1982–83	0	11 780	2	553	107	468	1 180	50	306
1983–84	0	8 553	6	338	63	322	1 419	30	348
1984–85	0	7 294	4	590	95	679	1 102	54	300
1985–86	0	6 186	1	505	165	715	1 093	53	230
1986–87	0	7 724	38	1 276	219	1 016	1 180	57	294
1987–88	0	9 577	42	908	171	708	1 010	54	460
1988–89	0	12 058	39	1 565	197	847	309	52	396
1989–90	0	11 603	85	1 703	234	1 028	0	122	577
1990–91	0	13 389	36	717	104	462	0	30	525
1991–92	0	15 332	49	357	103	390	413	38	816
1992–93	0	19 421	115	440	36	702	1 124	30	1 523
1993–94	0	20 296	164	447	189	764	944	56	520
1994–95	0	20 639	266	745	231	767	948	64	490
1995–96	0	23 703	415	447	302	1 110	720	34	578
1996–97	0	24 768	588	1 074	306	952	809	36	547
1997–98	0	25 017	511	483	111	770	795	53	560
1998–99	0	29 729	496	890	140	1 435	596	71	549
1999–00	0	26 936	519	1 065	171	1 400	799	137	586
2000–01	0	26 489	633	1 189	387	1 129	814	102	527
2001–02	0	27 308	588	1 436	225	1 280	557	93	485
2002–03	0	27 959	299	1 673	429	1 627	611	313	545
2003–04	0	23 499	785	3 242	681	3 374	1 285	461	713
2004–05	0	26 056	540	3 131	983	3 944	1 281	716	592
2005–06	1 251	24 418	599	3 687	817	6 122	1 418	741	2 039
2006–07	5 604	25 345	748	2 912	1 045	5 439	1 363	715	7 400
2007–08	5 294	26 223	965	3 533	1 846	7 470	1 625	812	7 025
2008–09	6 239	24 302	1 002	4 087	2 026	8 246	1 682	752	8 140
2009–10	5 448	27 284	1 067	3 884	2 168	8 668	1 797	707	7 122
2010–11	6 301	31 766	888	2 653	2 086	8 820	1 559	820	8 236

Source: BREE (2012a).

**Table E 3.3a** Energy production and trade—Australian energy exports, by fuel type  
—petroleum exports

Financial year	Crude oil and other refinery feedstock	LPG	Automotive gasoline	Aviation gasoline	Aviation turbine fuel	Automotive diesel oil	Fuel oil	Bitumen, lubricants and greases	Other petroleum products
<i>megalitres</i>									
1974–75	0	2 000	249	24	356	336	540	0	448
1975–76	0	1 950	155	14	278	387	823	0	536
1976–77	0	2 253	211	21	271	263	713	0	636
1977–78	221	2 864	286	23	326	522	396	278	145
1978–79	371	3 031	339	20	314	735	253	259	424
1979–80	127	2 764	312	8	210	638	352	251	220
1980–81	86	2 569	268	18	277	705	323	173	227
1981–82	44	2 622	340	43	268	669	307	227	100
1982–83	61	2 334	513	57	267	793	466	222	109
1983–84	1 056	2 851	592	72	382	1 035	505	247	93
1984–85	5 819	2 620	342	83	375	576	517	245	68
1985–86	5 051	2 977	397	70	329	578	723	181	106
1986–87	5 702	2 675	251	68	303	444	765	230	209
1987–88	6 453	2 402	360	81	398	682	754	224	243
1988–89	4 789	2 178	288	63	514	941	639	236	141
1989–90	7 202	1 983	212	83	541	756	443	253	190
1990–91	8 830	1 508	314	63	321	882	878	299	260
1991–92	8 967	1 568	700	158	248	830	1 043	419	480
1992–93	10 098	1 483	678	69	390	657	1 053	402	535
1993–94	9 538	1 290	891	59	400	809	713	400	290
1994–95	11 445	1 189	648	42	284	673	853	448	409
1995–96	10 899	1 469	1 127	69	552	1 201	629	351	265
1996–97	12 401	2 421	1 293	43	708	1 363	928	363	399
1997–98	14 785	2 824	1 521	56	658	1 305	633	402	407
1998–99	14 291	2 486	1 533	74	547	1 231	253	320	293
1999–00	20 877	2 857	1 371	79	579	1 070	585	259	174
2000–01	24 044	2 785	1 288	28	755	1 276	724	281	213
2001–02	23 936	3 211	1 186	71	549	948	293	171	192
2002–03	20 950	3 194	1 058	52	645	1 052	95	182	56
2003–04	17 526	2 916	774	36	528	872	81	136	45
2004–05	15 731	2 844	774	38	240	367	201	174	52
2005–06	13 026	2 800	714	85	127	419	490	199	48
2006–07	15 965	2 824	771	81	120	288	209	231	52
2007–08	15 975	2 589	628	96	149	462	257	178	35
2008–09	16 588	2 500	244	56	106	357	188	183	29
2009–10	18 064	2 776	222	32	72	187	109	212	16
2010–11	19 638	2 471	175	20	12	117	194	223	19

Source: BREE (2012a).

**Table E 3.3b** Energy production and trade—Australian energy exports, by fuel type—non-petroleum exports

Financial year	Black coal		Uranium tonnes	Briquettes kilotonnes	Coke kilotonnes	LNG kilotonnes
	Coking kilotonnes	Steaming kilotonnes				
1974–75	28 666	85	0	1	421	0
1975–76	27 431	151	0	2	182	0
1976–77	32 219	164	750	44	189	0
1977–78	33 634	153	1 452	42	149	0
1978–79	33 257	108	1 317	25	147	0
1979–80	36 144	216	1 210	25	122	0
1980–81	36 404	169	1 625	39	21	0
1981–82	36 539	176	5 460	46	9	0
1982–83	38 866	179	3 233	47	5	0
1983–84	44 509	877	3 259	54	14	0
1984–85	50 800	2 080	3 441	47	11	0
1985–86	51 800	1 956	3 210	62	217	0
1986–87	54 400	181	4 364	53	108	0
1987–88	57 100	1 017	4 552	75	816	0
1988–89	57 208	3 756	5 061	24	986	0
1989–90	60 605	2 994	4 812	31	574	2 010
1990–91	61 904	3 153	6 129	44	897	3 400
1991–92	65 077	4 277	4 729	82	724	4 660
1992–93	69 533	5 021	2 289	61	599	4 984
1993–94	69 889	7 017	3 992	100	529	6 032
1994–95	73 335	10 844	4 069	105	295	7 018
1995–96	77 412	9 582	5 286	98	421	7 482
1996–97	78 688	15 779	5 701	95	329	7 486
1997–98	84 073	19 819	6 415	28	178	7 650
1998–99	85 260	35 300	5 989	0	67	7 819
1999–00	96 808	38 500	8 025	0	24	7 923
2000–01	105 527	43 300	9 722	1	19	7 530
2001–02	105 833	45 000	7 367	0	81	7 600
2002–03	107 794	40 448	9 593	0	262	7 826
2003–04	111 732	43 975	9 099	0	1	7 914
2004–05	124 915	51 468	11 249	0	0	10 589
2005–06	120 479	58 225	10 253	0	0	12 029
2006–07	131 965	59 651	9 519	0	0	14 332
2007–08	136 921	59 166	10 139	0	0	13 678
2008–09	125 238	62 901	10 114	0	0	15 410
2009–10	157 265	61 138	7 555	0	0	17 866
2010–11	140 455	67 064	6 950	0	0	19 957

Source: BREE (2012a).

**Table E 3.4** Electricity usage—Australian electricity consumption, by state/territory

Financial year	NSW	VIC	QLD	WA	SA	TAS	NT	Australia
	<i>gigawatt hours</i>							
1974–75	27 250	18 922	9 430	5 989	5 665	6 100	646	74 002
1975–76	27 879	19 962	9 779	6 508	5 966	6 034	701	76 828
1976–77	30 309	21 023	10 615	6 986	6 520	6 873	729	83 055
1977–78	31 787	21 395	11 300	7 229	6 797	7 201	775	86 484
1978–79	34 201	22 820	11 884	7 492	6 934	7 787	831	91 950
1979–80	36 708	23 595	12 558	7 733	7 074	7 950	1 100	96 717
1980–81	38 845	25 396	13 501	7 885	7 458	8 096	1 175	102 356
1981–82	39 666	26 587	14 640	8 199	7 618	8 173	1 183	106 065
1982–83	38 475	26 457	16 125	8 365	7 879	8 006	1 235	106 542
1983–84	41 253	27 152	18 551	8 647	7 681	8 173	1 296	112 752
1984–85	44 712	28 080	20 626	9 711	8 144	8 320	1 368	120 960
1985–86	46 895	29 176	22 267	10 321	8 370	8 451	1 456	126 936
1986–87	48 900	31 123	23 344	10 881	8 426	8 463	1 494	132 631
1987–88	50 011	33 909	24 313	11 455	8 824	9 011	1 564	139 088
1988–89	51 741	37 435	25 677	12 848	9 254	9 135	1 705	147 796
1989–90	54 216	38 226	27 473	14 261	9 791	9 223	1 828	155 019
1990–91	54 140	38 476	28 423	14 809	9 851	9 219	1 899	156 818
1991–92	54 542	38 907	29 823	15 208	9 979	9 131	1 966	159 556
1992–93	56 167	39 642	30 992	15 624	10 210	9 054	1 961	163 652
1993–94	58 229	39 229	32 214	16 295	10 433	9 099	1 967	167 466
1994–95	59 725	40 229	33 999	17 362	10 876	8 877	2 095	173 162
1995–96	61 371	40 062	35 555	18 106	10 879	9 277	2 351	177 602
1996–97	63 101	41 145	36 967	18 291	11 193	9 783	2 463	182 944
1997–98	65 653	44 258	41 909	19 542	11 571	9 882	2 559	195 375
1998–99	67 487	46 782	43 318	21 407	12 386	10 027	2 585	203 991
1999–00	69 215	47 576	44 911	22 869	12 816	10 137	2 706	210 230
2000–01	71 690	52 153	50 692	23 135	13 676	10 412	2 883	224 641
2001–02	72 547	53 091	51 363	23 378	13 492	10 724	2 969	227 563
2002–03	73 630	49 586	51 859	20 267	13 491	10 932	2 356	222 120
2003–04	75 740	50 230	55 436	20 535	14 185	11 269	2 388	229 784
2004–05	74 408	50 885	54 415	20 859	13 958	11 743	2 382	228 649
2005–06	75 644	52 139	54 478	22 298	14 270	11 470	2 530	232 829
2006–07	78 964	53 839	56 864	23 325	14 943	12 144	3 073	243 152
2007–08	78 511	53 580	56 898	24 281	14 860	12 035	3 052	243 217
2008–09	79 443	53 843	58 329	27 706	15 283	12 005	2 922	249 531
2009–10	80 836	53 232	58 223	28 832	15 537	12 215	3 263	252 138
2010–11	80 381	51 584	57 549	31 577	15 812	12 629	3 088	252 619

Source: BREE (2012a).

**Table E 3.5a** Electricity usage—Australian electricity consumption, by industry—  
New South Wales

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water		
<i>gigawatt hours</i>								
1974–75	889	np	np	8 833	3 917	222	4 278	9 111
1975–76	889	np	np	8 830	3 860	250	4 471	9 580
1976–77	945	np	np	9 029	4 778	250	4 834	10 473
1977–78	973	np	np	9 392	5 085	250	5 140	10 948
1978–79	1 000	np	np	9 724	5 834	278	5 557	11 808
1979–80	1 055	np	np	10 551	6 525	333	6 164	12 079
1980–81	1 167	np	np	11 281	6 502	417	6 641	12 837
1981–82	1 194	np	np	11 166	6 555	472	6 805	13 472
1982–83	1 222	np	np	10 306	6 306	472	6 806	13 362
1983–84	1 222	np	np	12 501	6 612	472	6 945	13 501
1984–85	1 305	np	np	14 636	7 276	444	7 387	13 664
1985–86	1 528	np	np	15 974	6 529	528	7 945	14 391
1986–87	1 584	np	np	16 782	6 835	500	8 363	14 837
1987–88	1 528	np	np	17 420	6 446	528	9 002	15 087
1988–89	1 639	np	np	17 997	7 054	528	9 498	15 025
1989–90	1 889	np	np	18 637	7 083	528	10 054	16 026
1990–91	1 889	np	np	18 639	6 278	528	10 584	16 223
1991–92	1 916	np	np	18 995	6 304	555	10 636	16 135
1992–93	1 944	np	np	19 806	6 361	556	10 722	16 778
1993–94	1 972	np	np	21 641	6 501	556	10 862	16 696
1994–95	2 083	np	np	21 668	6 889	556	11 417	17 112
1995–96	2 223	np	np	21 476	6 973	556	12 641	17 503
1996–97	2 194	np	np	22 274	6 888	583	12 970	18 192
1997–98	2 333	np	np	23 190	7 415	611	13 803	18 302
1998–99	2 417	np	np	23 866	7 418	611	14 614	18 560
1999–00	2 417	np	np	24 341	7 613	639	14 921	19 284
2000–01	3 212	np	np	24 304	8 101	1 052	14 781	20 239
2001–02	3 287	np	np	24 297	7 861	1 115	15 293	20 695
2002–03	3 043	np	np	21 484	8 315	1 211	18 596	20 981
2003–04	3 539	np	np	21 397	8 904	1 281	18 942	21 677
2004–05	3 446	np	np	20 789	8 897	1 234	18 711	21 332
2005–06	3 453	np	np	20 957	9 367	1 310	19 149	21 409
2006–07	3 709	np	np	22 540	9 496	1 374	20 100	21 746
2007–08	3 741	np	np	22 209	9 278	1 351	19 987	21 946
2008–09	3 757	np	np	22 074	9 439	1 043	20 284	22 846
2009–10	3 863	np	np	22 631	9 412	1 036	20 383	23 510
2010–11	3 856	np	np	22 365	8 994	917	20 381	23 868

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5b Electricity usage—Australian electricity consumption, by industry—Victoria**

Financial year	Mining	Manufacturing		Electricity, gas and water		Other industries	Household consumption	
	Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigawatt hours</i>								
1974–75	361	np	np	6 613	2 890	222	3 001	5 835
1975–76	416	np	np	6 885	3 137	222	3 221	6 080
1976–77	472	np	np	6 887	3 333	222	3 416	6 693
1977–78	500	np	np	6 974	3 223	250	3 501	6 946
1978–79	527	np	np	7 496	3 498	250	3 831	7 218
1979–80	500	np	np	7 865	3 502	278	4 030	7 420
1980–81	528	np	np	8 780	3 862	278	4 335	7 613
1981–82	583	np	np	9 223	4 167	306	4 445	7 862
1982–83	584	np	np	8 921	4 057	306	4 724	7 865
1983–84	639	np	np	9 301	4 109	305	4 886	7 912
1984–85	667	np	np	9 499	4 527	333	5 111	7 944
1985–86	750	np	np	9 920	4 585	306	5 446	8 169
1986–87	750	np	np	11 060	4 863	333	5 780	8 337
1987–88	778	np	np	13 136	5 027	333	6 276	8 359
1988–89	778	np	np	15 690	5 582	333	6 582	8 470
1989–90	778	np	np	15 807	5 445	361	7 084	8 751
1990–91	695	np	np	15 752	5 473	361	7 334	8 862
1991–92	722	np	np	15 802	5 832	361	7 387	8 803
1992–93	750	np	np	16 223	5 639	361	7 723	8 945
1993–94	750	np	np	16 058	5 445	361	7 946	8 668
1994–95	750	np	np	15 808	5 695	361	8 501	9 113
1995–96	666	np	np	15 297	5 442	389	8 829	9 439
1996–97	722	np	np	15 492	5 442	389	9 328	9 773
1997–98	750	np	np	16 392	6 779	417	9 641	10 280
1998–99	750	np	np	16 640	8 362	417	9 973	10 640
1999–00	805	np	np	17 081	8 526	417	10 332	10 415
2000–01	796	np	np	20 435	8 640	455	11 084	10 743
2001–02	796	np	np	21 185	8 787	455	11 403	10 465
2002–03	489	np	np	14 862	8 792	479	13 732	11 232
2003–04	477	np	np	14 951	8 804	520	14 057	11 422
2004–05	663	np	np	15 622	9 022	502	13 974	11 103
2005–06	646	np	np	15 861	9 283	547	14 335	11 466
2006–07	698	np	np	16 625	8 406	579	15 604	11 928
2007–08	718	np	np	16 796	7 996	566	15 575	11 929
2008–09	740	np	np	16 388	8 160	607	16 099	11 850
2009–10	777	np	np	15 644	7 994	749	16 244	11 825
2010–11	872	np	np	14 820	7 266	488	16 458	11 680

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



**Table E 3.5c** Electricity usage—Australian electricity consumption, by industry—  
Queensland

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water		
	<i>gigawatt hours</i>							
1974–75	1 248	np	np	2 247	1 331	56	1 609	2 940
1975–76	1 250	np	np	2 389	1 472	56	1 584	3 028
1976–77	1 334	np	np	2 529	1 584	55	1 834	3 279
1977–78	1 333	np	np	2 582	1 721	56	2 055	3 554
1978–79	1 361	np	np	2 610	1 944	55	2 166	3 748
1979–80	1 334	np	np	2 834	1 945	55	2 528	3 862
1980–81	1 417	np	np	2 889	2 195	55	2 834	4 111
1981–82	1 528	np	np	3 167	2 306	55	3 111	4 473
1982–83	1 637	np	np	4 080	2 359	83	3 219	4 746
1983–84	1 583	np	np	6 026	2 666	83	3 305	4 888
1984–85	1 693	np	np	6 774	3 498	83	3 553	5 025
1985–86	1 805	np	np	7 024	4 165	83	3 998	5 192
1986–87	1 971	np	np	7 272	4 191	111	4 413	5 385
1987–88	2 112	np	np	7 586	3 918	83	4 946	5 668
1988–89	2 276	np	np	7 828	4 053	83	5 524	5 913
1989–90	2 472	np	np	8 195	4 389	111	5 972	6 334
1990–91	2 584	np	np	8 363	4 473	111	6 335	6 557
1991–92	2 777	np	np	8 386	5 026	139	6 692	6 803
1992–93	2 916	np	np	8 692	5 138	111	7 054	7 082
1993–94	3 083	np	np	9 081	5 221	111	7 331	7 387
1994–95	3 222	np	np	9 305	5 555	112	8 055	7 750
1995–96	3 194	np	np	9 555	5 917	111	8 805	7 972
1996–97	3 333	np	np	9 776	6 166	139	9 332	8 221
1997–98	3 583	np	np	12 720	6 999	139	9 887	8 582
1998–99	3 888	np	np	13 301	7 053	139	10 108	8 830
1999–00	4 222	np	np	13 832	7 027	139	10 665	9 027
2000–01	6 150	np	np	15 524	7 672	150	11 136	10 061
2001–02	6 105	np	np	15 738	7 943	0	11 411	10 166
2002–03	4 647	np	np	16 055	7 579	0	13 038	10 540
2003–04	4 773	np	np	16 204	10 031	0	13 328	11 100
2004–05	4 771	np	np	16 834	8 177	164	13 324	11 145
2005–06	4 775	np	np	17 128	7 782	162	13 406	11 225
2006–07	4 728	np	np	16 658	9 393	171	14 295	11 620
2007–08	4 914	np	np	16 422	8 778	312	14 566	11 906
2008–09	5 165	np	np	15 831	9 603	389	14 973	12 368
2009–10	4 690	np	np	16 364	9 349	297	14 906	12 617
2010–11	5 170	np	np	16 660	7 933	240	14 707	12 839

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5d Electricity usage—Australian electricity consumption, by industry—  
South Australia**

Financial year	Mining	Manufacturing		Electricity, gas and water		Other industries	Household consumption	
	Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigawatt hours</i>								
1974–75	111	np	np	1 694	833	111	972	1 944
1975–76	111	np	np	1 693	860	166	1 082	2 053
1976–77	111	np	np	1 776	888	361	1 138	2 247
1977–78	111	np	np	1 803	943	416	1 248	2 275
1978–79	111	np	np	1 914	943	194	1 304	2 469
1979–80	139	np	np	1 970	999	194	1 359	2 413
1980–81	139	np	np	1 913	1 137	250	1 469	2 551
1981–82	139	np	np	2 002	1 084	195	1 529	2 669
1982–83	139	np	np	1 914	971	444	1 637	2 774
1983–84	250	np	np	1 830	1 109	194	1 636	2 662
1984–85	278	np	np	1 918	1 167	250	1 723	2 807
1985–86	278	np	np	2 002	1 224	278	1 780	2 809
1986–87	278	np	np	2 030	1 307	139	1 808	2 864
1987–88	277	np	np	2 137	1 332	139	1 970	2 969
1988–89	361	np	np	2 251	1 417	139	2 112	2 974
1989–90	416	np	np	2 524	1 359	139	2 219	3 134
1990–91	444	np	np	2 525	1 249	194	2 275	3 163
1991–92	445	np	np	2 585	1 390	195	2 252	3 113
1992–93	444	np	np	2 747	1 276	83	2 386	3 274
1993–94	416	np	np	2 830	1 360	194	2 442	3 191
1994–95	444	np	np	2 969	1 332	250	2 497	3 385
1995–96	444	np	np	2 970	1 415	139	2 525	3 386
1996–97	417	np	np	2 972	1 416	139	2 666	3 583
1997–98	416	np	np	3 080	1 415	194	2 775	3 691
1998–99	583	np	np	3 277	1 555	250	2 916	3 805
1999–00	612	np	np	3 336	1 640	306	2 975	3 948
2000–01	681	np	np	3 263	1 873	312	3 291	4 256
2001–02	655	np	np	3 103	1 964	313	3 444	4 013
2002–03	1 250	np	np	2 064	1 634	347	4 209	3 987
2003–04	1 241	np	np	2 155	1 696	345	4 329	4 419
2004–05	1 347	np	np	2 137	1 632	327	4 208	4 306
2005–06	1 311	np	np	2 386	1 562	321	4 318	4 371
2006–07	1 443	np	np	2 522	1 451	329	4 565	4 632
2007–08	1 406	np	np	2 485	1 428	323	4 567	4 651
2008–09	1 458	np	np	2 756	1 664	369	4 210	4 826
2009–10	1 318	np	np	3 013	1 612	366	4 246	4 983
2010–11	1 613	np	np	2 747	1 886	313	4 197	5 057

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5e** Electricity usage—Australian electricity consumption, by industry—  
Western Australia

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water		
	<i>gigawatt hours</i>							
1974–75	1 414	np	np	1 414	776	55	1 054	1 275
1975–76	1 474	np	np	1 585	807	56	1 168	1 418
1976–77	1 497	np	np	1 830	804	55	1 275	1 525
1977–78	1 418	np	np	1 891	890	56	1 362	1 613
1978–79	1 360	np	np	1 998	943	55	1 415	1 720
1979–80	1 168	np	np	2 142	946	56	1 586	1 836
1980–81	1 083	np	np	2 082	1 000	83	1 638	1 999
1981–82	1 195	np	np	2 057	1 056	56	1 751	2 084
1982–83	1 167	np	np	2 112	1 056	56	1 862	2 112
1983–84	1 168	np	np	2 280	1 057	56	1 946	2 141
1984–85	1 276	np	np	2 747	1 249	55	2 109	2 275
1985–86	1 554	np	np	2 941	1 304	83	2 136	2 303
1986–87	1 554	np	np	3 053	1 332	83	2 415	2 443
1987–88	1 779	np	np	3 225	1 390	56	2 586	2 419
1988–89	2 497	np	np	3 330	1 498	83	2 886	2 553
1989–90	3 308	np	np	3 558	1 585	83	3 086	2 641
1990–91	3 473	np	np	3 584	1 639	111	3 223	2 778
1991–92	3 663	np	np	3 746	1 637	111	3 247	2 803
1992–93	3 719	np	np	3 996	1 665	111	3 330	2 803
1993–94	3 720	np	np	4 331	1 749	83	3 525	2 887
1994–95	4 167	np	np	4 500	1 833	83	3 695	3 083
1995–96	4 554	np	np	4 665	1 944	111	3 749	3 082
1996–97	4 580	np	np	4 718	1 860	83	3 886	3 164
1997–98	4 997	np	np	5 108	1 915	83	4 025	3 414
1998–99	5 359	np	np	6 386	1 971	111	4 026	3 554
1999–00	5 669	np	np	7 197	2 084	111	4 113	3 696
2000–01	4 627	np	np	7 016	2 540	151	4 657	4 143
2001–02	4 730	np	np	6 628	2 681	151	4 880	4 308
2002–03	4 746	np	np	5 374	1 083	117	4 773	4 173
2003–04	4 717	np	np	5 431	1 132	127	4 926	4 202
2004–05	4 761	np	np	5 471	1 348	122	4 952	4 204
2005–06	7 471	np	np	4 031	1 416	133	4 873	4 374
2006–07	7 175	np	np	4 876	1 362	140	5 194	4 578
2007–08	6 959	np	np	4 880	1 870	528	5 300	4 744
2008–09	8 604	np	np	5 513	2 407	427	5 576	5 181
2009–10	9 628	np	np	5 656	2 553	400	5 259	5 336
2010–11	10 738	np	np	6 416	2 691	651	5 486	5 593

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5f** Electricity usage—Australian electricity consumption, by industry—Tasmania

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water		
<i>gigawatt hours</i>								
1974–75	499	np	np	3 521	582	28	582	887
1975–76	473	np	np	3 420	556	28	640	918
1976–77	473	np	np	4 063	612	28	696	1 002
1977–78	500	np	np	4 309	584	28	723	1 057
1978–79	501	np	np	4 756	640	28	751	1 112
1979–80	500	np	np	4 837	639	28	778	1 167
1980–81	499	np	np	4 741	776	28	860	1 192
1981–82	500	np	np	4 893	639	28	862	1 251
1982–83	500	np	np	4 726	612	28	862	1 279
1983–84	473	np	np	4 837	667	28	890	1 279
1984–85	471	np	np	4 909	693	0	943	1 303
1985–86	500	np	np	4 976	695	0	945	1 334
1986–87	499	np	np	4 939	666	0	971	1 387
1987–88	501	np	np	5 479	667	28	1 001	1 335
1988–89	555	np	np	5 470	750	28	1 000	1 333
1989–90	583	np	np	5 556	750	28	1 000	1 306
1990–91	500	np	np	5 665	694	28	1 027	1 305
1991–92	500	np	np	5 523	694	28	1 055	1 332
1992–93	500	np	np	5 444	667	28	1 055	1 361
1993–94	527	np	np	5 465	666	28	1 054	1 359
1994–95	472	np	np	5 160	666	0	1 248	1 332
1995–96	556	np	np	5 277	667	28	1 361	1 389
1996–97	528	np	np	5 753	695	28	1 390	1 390
1997–98	527	np	np	5 802	722	0	1 443	1 388
1998–99	556	np	np	5 888	694	28	1 444	1 417
1999–00	555	np	np	5 916	694	28	1 472	1 472
2000–01	851	np	np	5 646	709	28	1 674	1 504
2001–02	569	np	np	5 803	711	28	1 735	1 877
2002–03	231	np	np	5 964	746	25	2 057	1 909
2003–04	385	np	np	5 965	764	27	2 059	2 069
2004–05	409	np	np	6 454	735	25	1 937	2 183
2005–06	419	np	np	6 190	721	28	1 924	2 188
2006–07	434	np	np	6 751	678	29	2 032	2 221
2007–08	460	np	np	6 605	653	28	2 040	2 248
2008–09	470	np	np	6 408	654	31	2 133	2 310
2009–10	449	np	np	6 493	744	23	2 107	2 400
2010–11	510	np	np	6 554	1 055	61	2 094	2 354

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5g** Electricity usage—Australian electricity consumption, by industry—Northern Territory

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water		
<i>gigawatt hours</i>								
1974–75	56	np	np	np	28	28	421	112
1975–76	56	np	np	np	84	28	393	140
1976–77	56	np	np	np	84	28	421	140
1977–78	55	np	np	np	111	28	443	138
1978–79	55	np	np	np	83	55	471	166
1979–80	138	np	np	np	83	55	633	193
1980–81	140	np	np	np	84	56	671	224
1981–82	165	np	np	np	83	55	660	220
1982–83	137	np	np	np	82	55	741	220
1983–84	138	np	np	np	83	55	772	248
1984–85	140	np	np	np	112	56	782	279
1985–86	168	np	np	np	112	56	812	308
1986–87	166	np	np	np	111	28	885	304
1987–88	168	np	np	np	84	56	922	335
1988–89	252	np	np	np	140	28	950	335
1989–90	332	np	np	np	111	55	997	332
1990–91	335	np	np	np	140	28	1 061	335
1991–92	305	np	np	np	166	55	1 080	360
1992–93	304	np	np	np	138	28	1 132	359
1993–94	305	np	np	np	111	55	1 108	388
1994–95	335	np	np	np	140	28	1 173	419
1995–96	526	np	np	np	111	55	1 217	443
1996–97	581	np	np	np	111	55	1 273	443
1997–98	599	np	np	np	136	54	1 280	490
1998–99	528	np	np	np	139	56	1 418	445
1999–00	530	np	np	np	139	56	1 451	530
2000–01	425	np	np	np	152	91	1 669	546
2001–02	606	np	np	np	151	91	1 575	545
2002–03	131	np	np	np	181	66	1 341	636
2003–04	140	np	np	np	186	72	1 357	633
2004–05	234	np	np	np	178	69	1 330	571
2005–06	316	np	np	np	183	54	1 338	640
2006–07	685	np	np	np	221	59	1 450	657
2007–08	635	np	np	np	203	58	1 491	665
2008–09	288	np	np	np	243	181	1 530	679
2009–10	363	np	np	np	293	114	1 740	752
2010–11	347	np	np	np	257	22	1 884	579

np: Not available for publication but included in the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.5h Electricity usage—Australian electricity consumption, by industry—  
Australia**

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
	Iron and steel	Basic non-ferrous metals	Total manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigawatt hours</i>								
1974–75	4 583	4 500	6 972	13 084	10 361	694	11 695	22 112
1975–76	4 666	4 305	7 222	13 499	10 805	778	12 332	23 221
1976–77	4 917	4 250	7 972	14 083	12 083	1 000	13 417	25 333
1977–78	4 862	4 445	8 223	14 446	12 529	1 111	14 335	26 531
1978–79	4 917	4 861	8 695	15 140	13 862	945	15 334	28 196
1979–80	4 805	4 694	9 499	16 332	14 610	1 000	16 805	28 971
1980–81	5 000	4 833	10 555	16 666	15 527	1 167	18 110	30 498
1981–82	5 277	4 083	10 582	18 108	15 886	1 111	19 024	31 994
1982–83	5 416	3 472	11 165	17 720	15 470	1 389	19 581	32 329
1983–84	5 445	3 806	15 361	17 945	16 306	1 222	20 028	32 639
1984–85	5 861	3 916	18 304	18 637	18 498	1 250	21 192	33 302
1985–86	6 527	4 055	19 749	19 415	18 610	1 333	22 776	34 470
1986–87	6 777	4 083	21 193	20 193	19 277	1 194	24 360	35 553
1987–88	7 139	4 528	23 445	21 362	18 862	1 250	26 334	36 168
1988–89	8 361	4 527	25 776	22 637	20 471	1 250	28 137	36 637
1989–90	9 749	5 027	26 304	23 304	20 693	1 278	30 109	38 553
1990–91	9 888	4 777	26 581	23 553	19 887	1 389	31 497	39 246
1991–92	10 306	4 944	26 861	23 278	21 083	1 333	32 445	39 306
1992–93	10 582	5 138	27 748	24 026	20 887	1 278	33 358	40 635
1993–94	10 750	5 472	28 943	24 999	20 999	1 417	34 332	40 554
1994–95	11 472	5 722	27 860	25 860	22 055	1 500	36 527	42 166
1995–96	12 166	5 694	28 165	25 360	22 471	1 417	39 137	43 192
1996–97	12 304	5 832	29 440	25 718	22 580	1 444	40 855	44 771
1997–98	13 245	5 942	33 460	26 852	25 352	1 527	42 818	46 178
1998–99	14 085	6 084	35 864	27 447	27 169	1 611	44 504	47 227
1999–00	14 806	6 278	37 307	28 584	27 723	1 722	45 474	48 335
2000–01	16 434	6 250	45 686	24 912	29 715	2 199	47 798	51 647
2001–02	16 465	6 424	45 721	25 233	30 153	2 083	49 338	52 145
2002–03	14 538	3 270	35 220	27 842	28 333	2 241	57 216	53 458
2003–04	15 272	3 302	35 478	27 856	31 528	2 360	58 466	55 522
2004–05	15 631	3 853	36 985	26 939	30 000	2 433	57 964	54 844
2005–06	18 392	3 630	36 546	26 894	30 306	2 562	58 827	55 673
2006–07	18 872	3 848	38 232	28 460	31 000	2 687	62 671	57 381
2007–08	18 833	3 818	37 817	28 296	30 195	3 179	62 991	58 089
2008–09	20 482	3 585	38 721	26 697	32 167	3 049	64 771	60 059
2009–10	21 088	3 970	38 804	27 097	31 944	2 997	64 815	61 423
2010–11	23 106	4 432	39 047	26 684	30 081	2 692	64 607	61 970

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.6a** Electricity usage—Number of electricity customers, by state/territory—Residential

At end of financial year	NSW <sup>k</sup>	VIC	QLD	SA <sup>l</sup>	WA <sup>m</sup>	TAS	NT <sup>n</sup>	ACT <sup>k</sup>	Australia
	<i>number</i>								
1975–76	1 638 763	1 238 954	590 368	438 811	314 455	135 391	o 16 910	59 634	4 433 286
1976–77	1 670 130	1 267 648	609 173	453 501	337 193	139 132	o 18 540	63 732	4 559 049
1977–78	1 704 606	1 295 514	627 874	464 066	362 365	142 729	20 168	66 152	4 683 474
1978–79	1 736 954	1 319 274	641 056	471 670	372 467	145 780	20 254	69 954	4 777 409
1979–80	1 778 482	1 344 255	686 986	479 005	382 500	148 777	20 930	70 529	4 911 464
1980–81	1 827 382	1 368 502	715 571	486 018	397 740	151 615	21 537	72 518	5 040 883
1981–82	1 871 428	1 390 366	747 572	492 616	400 255	153 942	24 106	75 027	5 155 312
1982–83	1 910 929	1 410 782	778 871	500 328	407 679	156 016	25 678	77 517	5 267 800
1983–84	1 941 518	1 434 797	810 816	510 369	410 000	158 448	27 704	79 306	5 372 958
1984–85	1 977 262	1 463 053	841 251	522 654	443 222	161 755	30 842	81 784	5 521 823
1985–86	2 016 735	1 495 878	866 602	534 823	464 403	165 435	33 535	84 978	5 662 389
1986–87	2 047 229	1 523 100	889 389	544 326	481 310	168 796	33 883	88 542	5 776 575
1987–88	2 076 298	1 552 603	914 714	522 980	514 316	172 109	35 417	91 010	5 879 447
1988–89	2 110 063	1 585 877	954 244	561 293	520 623	175 472	36 592	93 549	6 037 713
1989–90	2 155 493	1 618 058	996 542	571 712	544 680	178 291	37 439	96 122	6 198 337
1990–91	2 197 765	1 639 066	1 031 612	581 503	556 378	182 340	38 252	99 078	6 325 994
1991–92	2 231 018	1 661 567	1 073 548	591 655	571 727	186 134	41 304	101 920	6 458 873
1992–93	2 302 524	1 684 837	1 123 671	594 229	590 546	190 308	42 588	105 588	6 634 291
1993–94	2 329 499	1 709 280	1 174 558	605 481	609 852	194 314	48 190	109 005	6 780 179
1994–95									
1995–96									
1996–97									
1997–98	2 555 906	1 804 169	1 346 548	630 060	673 571	206 926	54 998		7 272 178
1998–99	2 513 792	1 800 026	1 382 747	636 283	676 947	205 138	56 686		7 271 619
1999–00	2 572 324	1 871 775	1 426 420	642 878	692 475	207 285	58 550		7 471 707
2000–01	2 610 259	1 896 991	1 460 916	649 387	722 853	207 336	54 748		7 602 490
2001–02	2 661 016	1 942 595	1 487 968	657 209	736 100	208 380	55 779		7 749 047
2002–03	2 850 155	2 005 664	1 491 127	660 926	742 270	208 795	62 317		8 021 254
2003–04	2 876 498	2 048 182	1 558 783	659 211	748 903	211 422	62 330		8 165 329
2004–05	2 919 583	2 097 560	1 574 167	670 743	820 703	213 832	61 222		8 357 810
2005–06	2 949 376	2 109 756	1 603 756	679 069		216 983	61 555		
2006–07	2 923 107	2 141 284	1 629 232	688 524	807 136	219 809	61 783		8 470 875
2007–08	2 977 603	2 164 899	1 670 789	697 518	883 932	220 148	63 800		8 678 689
2008–09	3 000 551	2 190 588	1 697 545	708 242	909 680		60 805		
2009–10	3 058 479	2 248 207	1 742 545	717 813	928 654	229 420	62 522		8 987 640
2010–11	3 089 086	2 269 037	1 767 850	725 439	946 513	228 128	64 854		9 090 907

**k** From 1997–98, customer connections for ACT are included in the NSW figure.

**l** The method of compiling South Australian customer numbers changed from 2003–04 and is not comparable to earlier years.

**m** A breakdown of customer connections for Western Australia was not available for 2005–06. The method of compiling Western Australian customer numbers changed from 2007–08 and again in 2008–09. Estimates are not comparable to earlier years.

**n** The method of compiling Northern Territory customer numbers changed from 2005–06 and is not comparable to earlier years.

**o** Estimate only.

Note: Data are not readily available for missing years.

Source: esaa (2005) and esaa updates.

**Table E 3.6b Electricity usage—Number of electricity customers, by state/territory—Business**

At end of financial year	NSW <sup>k</sup>	VIC	QLD	SA <sup>l</sup>	WA <sup>m</sup>	TAS	NT <sup>n</sup>	ACT <sup>k</sup>	Australia
	<i>number</i>								
1975–76	189 831	212 722	103 590	76 372	33 852	31 999	3 725	6 886	658 977
1976–77	193 256	214 602	105 777	78 171	35 165	32 574	3 842	7 293	670 680
1977–78	197 424	215 600	109 315	79 736	37 812	33 141	3 957	7 698	684 683
1978–79	201 962	218 117	120 791	81 439	40 458	33 945	3 772	7 877	708 361
1979–80	205 546	221 392	110 348	83 387	42 675	34 689	4 201	7 593	709 831
1980–81	210 005	225 018	117 797	84 719	41 490	35 300	4 458	7 829	726 616
1981–82	214 174	226 919	126 009	85 849	59 156	35 609	4 659	7 319	759 694
1982–83	219 349	228 718	130 232	86 831	68 258	35 842	4 733	7 474	781 437
1983–84	223 425	232 144	135 705	87 792	80 639	36 755	4 795	7 636	808 892
1984–85	227 898	236 536	139 314	89 016	69 073	37 253	5 276	8 173	812 539
1985–86	233 894	238 419	146 119	90 830	71 707	37 849	5 768	8 507	833 093
1986–87	240 513	240 848	150 231	90 847	74 242	38 503	6 140	8 821	850 145
1987–88	247 375	246 856	156 614	91 283	70 558	39 209	6 617	9 369	867 881
1988–89	242 024	255 125	162 348	92 488	75 840	40 063	6 689	9 816	884 393
1989–90	248 015	255 895	165 650	93 570	78 318	40 670	6 950	10 244	899 312
1990–91	252 036	254 817	169 271	93 576	84 304	41 731	7 064	10 697	913 496
1991–92	264 021	256 222	172 743	93 784	85 050	42 000	8 330	10 820	932 970
1992–93	260 095	259 862	175 658	85 228	86 785	42 356	8 133	11 175	929 292
1993–94	270 419	262 286	181 103	85 559	89 622	43 086	9 315	11 669	953 059
1994–95									
1995–96									
1996–97									
1997–98	<sup>p</sup> 391 107	<sup>p</sup> 283 882	<sup>p</sup> 185 486	<sup>p</sup> 94 471	<sup>p</sup> 88 133	<sup>p</sup> 38 572	<sup>p</sup> 11 128		<sup>p</sup> 1 092 779
1998–99	337 090	285 271	<sup>p</sup> 193 566	66 303	<sup>p</sup> 98 655	27 821	<sup>p</sup> 11 663		<sup>p</sup> 1 020 369
1999–00	358 674	226 217	173 719	64 199	<sup>p</sup> 102 271	28 653	<sup>p</sup> 11 283		<sup>p</sup> 965 016
2000–01	337 054	265 878	162 095	<sup>p</sup> 66 672	<sup>p</sup> 87 715	<sup>p</sup> 40 563	10 762		<sup>p</sup> 970 739
2001–02	319 964	268 453	164 248	<sup>p</sup> 67 743	<sup>p</sup> 92 013	27 662	11 093		<sup>p</sup> 951 176
2002–03	319 156	301 925	195 682	95 061	104 788	42 098	12 664		1 071 374
2003–04	337 501	303 481	192 454	95 626	118 164	42 100	13 066		1 102 392
2004–05	343 345	271 844	199 802	86 885	109 215	42 190	15 305		1 068 586
2005–06	348 482	311 820	205 283	97 425		42 147	12 078		
2006–07	410 577	313 330	216 421	97 980	117 977	43 102	13 499		1 212 886
2007–08	394 249	313 735	221 671	98 695	128 965	44 159	11 874		1 213 348
2008–09	394 817	315 256	211 191	99 311	141 654		11 275		
2009–10	371 501	313 895	204 783	99 457	127 207	50 369	11 482		1 178 694
2010–11	374 819	316 665	212 902	99 779	113 756	47 408	11 749		1 177 078

**k** From 1997–98, customer connections for ACT are included in the NSW figure.

**l** The method of compiling South Australian customer numbers changed from 2003–04 and is not comparable to earlier years.

**m** A breakdown of customer connections for Western Australia was not available for 2005–06. The method of compiling Western Australian customer numbers changed from 2007–08 and again in 2008–09. Estimates are not comparable to earlier years.

**n** The method of compiling Northern Territory customer numbers changed from 2005–06 and is not comparable to earlier years.

**p** The number of "other" electricity customers is not separately available and has been included in estimates of the number of business customers.

Note: Data are not readily available for missing years.

Source: esaa (2005) and esaa updates.



**Table E 3.6c** Electricity usage—Number of electricity customers, by state/territory—Other (including public lighting and traction)

At end of financial year	NSW <sup>k</sup>	VIC	QLD	SA	WA	TAS	NT	ACT <sup>k</sup>	Australia
	<i>number</i>								
1975–76	661	377	131	145	190	117	3	660	2 284
1976–77	647	1 324	132	138	213	136	3	712	3 305
1977–78	683	1 424	132	145	237	135	0	755	3 511
1978–79	680	1 522	131	143	261	136	0	777	3 650
1979–80	877	1 582	132	133	281	141	0	823	3 969
1980–81	844	1 667	133	133	288	157	0	776	3 998
1981–82	701	1 732	133	134	169	176	0	792	3 837
1982–83	667	1 782	133	141	201	176	0	801	3 901
1983–84	729	1 836	133	145	179	184	0	986	4 192
1984–85	819	1 858	133	167	146	189	0	819	4 131
1985–86	732	1 926	133	165	144	205	0	821	4 126
1986–87	755	2 071	133	168	146	199	0	838	4 310
1987–88	749	2 073	133	172	146	209	5	867	4 354
1988–89	15 631	2 037	133	173	146	208	5	871	19 204
1989–90	16 723	2 009	133	172	148	208	5	912	20 310
1990–91	29 815	1 870	133	173	148	212	5	924	33 280
1991–92	29 300	2 007	133	166	150	214	5	950	32 925
1992–93	29 637	2 099	133	790	146	231	17	1 002	34 055
1993–94	25 461	14 121	132	1 496	151	207	33	1 005	42 606
1994–95									
1995–96									
1996–97									
1997–98	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>		<sup>p</sup>
1998–99	131 371	68 132	<sup>p</sup>	31 197	<sup>p</sup>	12 226	<sup>p</sup>		<sup>p</sup>
1999–00	84 338	58 399	29 356	29 307	<sup>p</sup>	12 322	<sup>p</sup>		<sup>p</sup>
2000–01	129 084	55 843	32 496	<sup>p</sup>	<sup>p</sup>	<sup>p</sup>	6 657		<sup>p</sup>
2001–02	132 889	57 418	32 272	<sup>p</sup>	<sup>p</sup>	12 502	6 939		<sup>p</sup>
2002–03									
2003–04									
2004–05									
2005–06									
2006–07									
2007–08									
2008–09									
2009–10									
2010–11									

<sup>k</sup> From 1997–98, customer connections for ACT are included in the NSW figure.

<sup>p</sup> The number of other electricity customers is not separately available and has been included in estimates of the number of business customers.

Note: Data are not readily available for missing years.

Source: esaa (2005) and esaa updates

**Table E 3.6d Electricity usage—Number of electricity customers, by state/territory—Total**

At end of financial year	NSW <sup>k</sup>	VIC	QLD	SA <sup>l</sup>	WA <sup>m</sup>	TAS	NT <sup>n</sup>	ACT <sup>k</sup>	Australia
	<i>number</i>								
1975–76	1 829 255	1 452 053	694 089	515 328	348 497	167 507	20 638	67 180	5 094 547
1976–77	1 864 033	1 483 574	715 082	531 810	372 571	171 842	22 385	71 737	5 233 034
1977–78	1 902 713	1 512 538	737 321	543 947	400 414	176 005	24 125	74 605	5 371 668
1978–79	1 939 596	1 538 913	761 978	553 252	413 186	179 861	24 026	78 608	5 489 420
1979–80	1 984 905	1 567 229	797 466	562 525	425 456	183 607	25 131	78 945	5 625 264
1980–81	2 038 231	1 595 187	833 501	570 870	439 518	187 072	25 995	81 123	5 771 497
1981–82	2 086 303	1 619 017	873 714	578 599	459 580	189 727	28 765	83 138	5 918 843
1982–83	2 130 945	1 641 282	909 236	587 300	476 138	192 034	30 411	85 792	6 053 138
1983–84	2 165 672	1 668 777	946 654	598 306	490 818	195 387	32 499	87 928	6 186 041
1984–85	2 205 979	1 701 447	980 698	611 837	512 441	199 197	36 118	90 776	6 338 493
1985–86	2 251 361	1 736 223	1 012 854	625 818	536 254	203 489	39 303	94 306	6 499 608
1986–87	2 288 497	1 766 019	1 039 753	635 341	555 698	207 498	40 023	98 201	6 631 030
1987–88	2 324 422	1 801 532	1 071 461	614 435	585 020	211 527	42 039	101 246	6 751 682
1988–89	2 367 718	1 843 039	1 116 725	653 954	596 609	215 743	43 286	104 236	6 941 310
1989–90	2 420 231	1 875 962	1 162 325	665 454	623 146	219 169	44 394	107 278	7 117 959
1990–91	2 479 616	1 895 753	1 201 016	675 252	640 830	224 283	45 321	110 699	7 272 770
1991–92	2 524 339	1 919 796	1 246 424	685 605	656 927	228 348	49 639	113 690	7 424 768
1992–93	2 592 256	1 946 798	1 299 462	680 247	677 477	232 895	50 738	117 765	7 597 638
1993–94	2 625 379	1 985 687	1 355 793	692 536	699 625	237 607	57 538	121 679	7 775 844
1994–95	2 797 616	2 002 363	1 410 842	704 156	706 634	239 876	59 226		7 920 713
1995–96	2 834 776	2 035 584	1 457 364	711 050	725 430	241 818	61 305		8 067 327
1996–97	2 875 350	2 062 587	1 495 900	713 333	742 150	243 522	63 533		8 196 375
1997–98	2 947 013	2 088 051	1 532 034	724 531	761 704	245 498	66 126		8 364 957
1998–99	2 982 253	2 153 429	1 576 313	733 783	775 602	245 185	68 349		8 534 914
1999–00	3 015 336	2 156 391	1 629 495	736 384	794 746	248 260	69 833		8 650 445
2000–01	3 076 397	2 218 712	1 655 507	744 128	810 568	247 899	72 167		8 825 378
2001–02	3 113 869	2 268 466	1 684 488	751 802	828 113	248 544	73 811		8 969 093
2002–03	3 169 311	2 307 589	1 686 809	755 987	847 058	250 893	74 981		9 092 628
2003–04	3 213 999	2 351 663	1 751 237	754 837	867 067	253 522	75 396		9 267 721
2004–05	3 262 928	2 369 404	1 773 969	757 628	929 918	256 022	76 527		9 426 396
2005–06	3 297 858	2 421 576	1 809 039	776 494	892 601	259 130	73 633		9 530 331
2006–07	3 333 684	2 454 614	1 845 653	786 504	925 113	262 911	75 282		9 683 761
2007–08	3 371 852	2 478 634	1 892 460	796 213	1 012 897	264 307	75 674		9 892 037
2008–09	3 395 368	2 505 844	1 908 736	807 553	1 051 334	269 556	72 080		10 010 718
2009–10	3 429 980	2 562 102	1 947 328	817 270	1 055 861	279 789	74 004		10 166 334
2010–11	3 463 905	2 585 702	1 980 752	825 218	1 060 269	275 536	76 603		10 267 985

**k** From 1997–98, customer connections for ACT are included in the NSW figure.

**l** The method of compiling South Australian customer numbers changed from 2003–04 and is not comparable to earlier years.

**m** A breakdown of customer connections for Western Australia was not available for 2005–06. The method of compiling Western Australian customer numbers changed from 2007–08 and again in 2008–09. Estimates are not comparable to earlier years.

**n** The method of compiling Northern Territory customer numbers changed from 2005–06 and is not comparable to earlier years.

Source: esaa (2005) and esaa updates.

**Table E 3.7** Electricity usage—Price index for residential electricity supply, by capital city

Average over financial year ending	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
	<i>base of each index: 2011–12 = 100</i>							
Jun-1981	14.5	18.3	18.9	14.1	24.8	14.6	22.7	14.9
Jun-1982	17.3	21.2	22.3	17.1	28.3	16.8	26.1	17.7
Jun-1983	23.7	24.7	26.8	21.3	32.5	18.7	32.2	24.9
Jun-1984	24.3	26.9	30.0	23.5	37.4	21.4	35.9	26.0
Jun-1985	25.3	28.1	34.0	26.6	38.8	23.6	38.7	26.8
Jun-1986	27.1	29.5	37.6	27.3	40.5	24.5	48.7	28.8
Jun-1987	27.8	31.5	38.7	28.3	45.1	27.8	53.9	30.5
Jun-1988	30.0	33.2	39.7	30.5	47.7	29.1	54.7	34.6
Jun-1989	32.9	34.3	40.3	32.0	47.7	30.6	54.7	36.8
Jun-1990	34.0	35.9	40.3	33.0	51.1	32.2	54.7	38.3
Jun-1991	33.6	38.5	40.9	34.1	55.1	36.1	55.2	39.9
Jun-1992	37.2	41.0	41.8	36.1	56.2	38.1	58.3	41.3
Jun-1993	38.3	44.8	42.5	36.9	56.2	39.8	59.4	43.4
Jun-1994	38.3	47.8	42.8	37.5	56.2	41.4	59.7	43.4
Jun-1995	38.3	47.8	43.1	37.1	56.2	41.8	59.7	43.5
Jun-1996	38.3	47.8	43.1	37.8	56.2	42.3	59.7	44.6
Jun-1997	38.9	48.2	43.1	39.5	56.2	43.7	59.7	44.6
Jun-1998	38.9	48.5	43.1	40.0	58.3	45.1	59.7	45.3
Jun-1999	38.9	42.1	43.1	40.8	58.3	45.4	62.9	46.5
Jun-2000	39.0	42.6	43.1	41.6	58.3	46.6	62.9	48.0
Jun-2001	42.7	48.0	48.7	46.7	63.7	53.0	68.6	54.1
Jun-2002	42.9	53.5	50.3	48.1	63.7	52.9	68.6	55.8
Jun-2003	44.3	55.3	51.9	56.2	63.7	55.0	68.6	56.3
Jun-2004	45.5	55.3	54.1	63.6	63.7	56.8	68.6	63.1
Jun-2005	49.4	55.0	55.5	62.8	63.7	58.2	68.6	63.9
Jun-2006	52.9	55.1	57.8	60.7	63.7	59.6	68.6	66.3
Jun-2007	55.9	55.8	59.9	62.3	63.7	62.0	70.5	69.1
Jun-2008	60.1	61.0	66.8	64.9	63.7	67.1	74.2	81.6
Jun-2009	65.5	69.1	72.4	69.8	65.3	73.8	77.1	87.0
Jun-2010	79.7	79.8	83.6	73.0	82.0	78.0	93.2	93.3
Jun-2011	86.9	91.9	94.5	81.9	95.2	86.6	97.6	94.9
Jun-2012	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Jun-2013	118.6	121.8	113.4	116.7	112.1	110.7	120.1	118.7

Source: ABS (2012–13f).

**Table E 3.8a Gas usage—Australian gas consumption, by industry—New South Wales**

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
	Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigalitres</i>								
1974–75	0	np	np	196	0	39	68	157
1975–76	0	np	np	188	0	39	68	146
1976–77	0	np	np	225	0	251	68	146
1977–78	0	np	np	454	0	311	81	144
1978–79	0	np	np	689	0	295	99	144
1979–80	0	np	np	1 138	0	292	112	141
1980–81	0	np	np	1 441	0	292	123	146
1981–82	0	np	np	1 572	23	313	159	157
1982–83	0	np	np	1 655	31	319	172	170
1983–84	0	np	np	1 804	31	316	204	178
1984–85	0	np	np	1 820	42	303	209	188
1985–86	0	np	np	1 958	47	266	222	214
1986–87	0	np	np	2 084	44	292	245	222
1987–88	0	np	np	1 893	47	245	251	235
1988–89	0	np	np	1 906	42	219	266	245
1989–90	0	np	np	1 987	44	209	287	274
1990–91	0	np	np	1 854	44	172	303	298
1991–92	0	np	np	1 820	44	157	324	319
1992–93	0	np	np	1 869	44	123	342	358
1993–94	0	np	np	1 919	44	104	334	368
1994–95	0	np	np	1 971	44	91	366	397
1995–96	0	np	np	1 888	136	78	399	426
1996–97	0	np	np	2 282	274	81	415	454
1997–98	0	np	np	2 245	292	70	454	483
1998–99	0	np	np	2 230	397	63	473	535
1999–00	0	np	np	2 279	420	65	499	546
2000–01	31	np	np	2 491	436	97	277	554
2001–02	34	np	np	2 397	457	99	282	569
2002–03	47	np	np	2 444	493	102	315	548
2003–04	23	np	np	2 427	520	104	298	542
2004–05	31	np	np	2 298	540	112	304	541
2005–06	39	np	np	2 245	556	110	302	548
2006–07	44	np	np	2 206	415	70	297	555
2007–08	23	np	np	2 165	381	76	282	560
2008–09	13	np	np	2 184	658	99	283	585
2009–10	3	np	np	2 209	1 133	89	288	610
2010–11	0	np	np	2 250	1 164	80	290	634

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.8b** Gas usage—Australian gas consumption, by industry—Victoria

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water		
					<i>gigalitres</i>			
1974–75	379	np	np	1 204	np	np	353	588
1975–76	446	np	np	1 446	np	np	405	624
1976–77	464	np	np	1 649	np	np	515	763
1977–78	428	np	np	1 825	np	np	539	822
1978–79	464	np	np	1 938	np	np	763	910
1979–80	477	np	np	2 147	np	np	1 039	954
1980–81	430	np	np	2 291	np	np	1 747	1 044
1981–82	412	np	np	2 330	np	np	2 245	1 186
1982–83	528	np	np	2 240	np	np	1 920	1 219
1983–84	624	np	np	2 271	np	np	2 124	1 281
1984–85	552	np	np	2 332	np	np	1 572	1 343
1985–86	482	np	np	2 338	np	np	1 745	1 394
1986–87	492	np	np	2 394	np	np	1 322	1 508
1987–88	564	np	np	2 466	np	np	1 204	1 423
1988–89	539	np	np	2 534	np	np	1 410	1 464
1989–90	564	np	np	2 485	np	np	1 951	1 701
1990–91	521	np	np	2 299	np	np	1 459	1 691
1991–92	577	np	np	2 265	np	np	1 580	1 760
1992–93	580	np	np	2 325	np	np	1 639	1 812
1993–94	490	np	np	2 338	np	np	1 490	1 750
1994–95	523	np	np	2 446	np	np	1 832	1 918
1995–96	590	np	np	2 371	np	np	1 760	2 049
1996–97	603	np	np	2 392	np	np	1 119	2 046
1997–98	652	np	np	2 405	np	np	1 093	2 088
1998–99	459	np	np	2 188	np	np	1 126	2 000
1999–00	567	np	np	2 314	np	np	1 165	2 075
2000–01	552	np	np	2 263	np	np	1 410	2 137
2001–02	534	np	np	2 237	np	np	1 521	2 193
2002–03	474	np	np	2 265	np	np	1 581	2 205
2003–04	554	np	np	2 317	np	np	1 746	2 215
2004–05	469	np	np	2 314	np	np	1 797	2 234
2005–06	485	np	np	2 250	np	np	1 750	2 318
2006–07	490	np	np	2 196	np	np	1 778	2 352
2007–08	492	np	np	2 250	np	np	1 989	2 389
2008–09	626	np	np	2 198	np	np	1 949	2 462
2009–10	534	np	np	2 183	np	np	1 780	2 517
2010–11	542	np	np	2 184	np	np	1 777	2 584

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.8c Gas usage—Australian gas consumption, by industry—Queensland**

Financial year	Mining			Manufacturing		Electricity, gas and water		Other industries	Household consumption
	Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water				
	<i>gigalitres</i>								
1974–75	0	np	np	228	np	np	35	28	
1975–76	0	np	np	205	np	np	35	30	
1976–77	0	np	np	205	np	np	38	28	
1977–78	0	np	np	243	np	np	38	30	
1978–79	0	np	np	246	np	np	38	30	
1979–80	0	np	np	284	np	np	35	33	
1980–81	0	np	np	304	np	np	33	35	
1981–82	5	np	np	319	np	np	35	35	
1982–83	10	np	np	372	np	np	41	35	
1983–84	15	np	np	382	np	np	46	33	
1984–85	25	np	np	370	np	np	84	33	
1985–86	35	np	np	370	np	np	89	35	
1986–87	38	np	np	380	np	np	81	35	
1987–88	56	np	np	453	np	np	84	38	
1988–89	51	np	np	405	np	np	84	38	
1989–90	46	np	np	418	np	np	89	41	
1990–91	43	np	np	797	np	np	91	41	
1991–92	73	np	np	820	np	np	91	41	
1992–93	94	np	np	805	np	np	94	41	
1993–94	122	np	np	904	np	np	89	43	
1994–95	124	np	np	914	np	np	84	43	
1995–96	122	np	np	939	np	np	114	33	
1996–97	127	np	np	924	np	np	111	28	
1997–98	132	np	np	962	np	np	142	35	
1998–99	144	np	np	1 101	np	np	349	35	
1999–00	142	np	np	1 134	np	np	554	38	
2000–01	253	np	np	1 167	np	np	780	38	
2001–02	266	np	np	1 165	np	np	818	38	
2002–03	215	np	np	1 901	np	np	614	36	
2003–04	230	np	np	1 906	np	np	690	37	
2004–05	246	np	np	1 932	np	np	627	62	
2005–06	266	np	np	1 972	np	np	597	64	
2006–07	284	np	np	2 003	np	np	2 243	66	
2007–08	357	np	np	2 122	np	np	2 363	68	
2008–09	441	np	np	1 825	np	np	2 643	69	
2009–10	413	np	np	1 851	np	np	2 685	70	
2010–11	449	np	np	1 869	np	np	3 731	72	

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.8d** Gas usage—Australian gas consumption, by industry—South Australia

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water		
<i>gigalitres</i>								
1974–75	57	np	np	253	np	np	898	107
1975–76	63	np	np	285	np	np	1 042	112
1976–77	60	np	np	389	np	np	1 332	128
1977–78	78	np	np	386	np	np	1 457	131
1978–79	86	np	np	381	np	np	1 520	141
1979–80	136	np	np	465	np	np	1 564	138
1980–81	157	np	np	496	np	np	1 640	138
1981–82	222	np	np	517	np	np	1 833	149
1982–83	240	np	np	512	np	np	1 843	154
1983–84	345	np	np	470	np	np	1 812	151
1984–85	554	np	np	543	np	np	1 872	159
1985–86	561	np	np	585	np	np	1 601	159
1986–87	593	np	np	525	np	np	1 535	170
1987–88	624	np	np	585	np	np	1 499	159
1988–89	577	np	np	561	np	np	1 606	170
1989–90	598	np	np	621	np	np	1 480	175
1990–91	567	np	np	621	np	np	1 159	178
1991–92	546	np	np	608	np	np	1 319	185
1992–93	538	np	np	574	np	np	1 397	191
1993–94	525	np	np	700	np	np	1 527	178
1994–95	538	np	np	760	np	np	1 389	191
1995–96	525	np	np	786	np	np	1 094	191
1996–97	530	np	np	791	np	np	1 081	196
1997–98	619	np	np	752	np	np	1 222	198
1998–99	621	np	np	715	np	np	1 608	201
1999–00	582	np	np	728	np	np	1 616	204
2000–01	679	np	np	616	np	np	1 671	206
2001–02	676	np	np	642	np	np	1 687	211
2002–03	762	np	np	658	np	np	1 720	228
2003–04	747	np	np	679	np	np	1 738	241
2004–05	661	np	np	736	np	np	1 780	267
2005–06	569	np	np	734	np	np	1 589	280
2006–07	444	np	np	723	np	np	2 155	278
2007–08	418	np	np	755	np	np	2 372	281
2008–09	478	np	np	611	np	np	2 118	287
2009–10	475	np	np	721	np	np	1 690	278
2010–11	445	np	np	712	np	np	1 917	278

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.8e Gas usage—Australian gas consumption, by industry—Western Australia**

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
	Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigalitres</i>								
1974–75	17	np	np	672	0	14	24	31
1975–76	17	np	np	682	0	14	22	34
1976–77	14	np	np	689	0	14	27	48
1977–78	14	np	np	655	2	14	22	48
1978–79	14	np	np	667	2	10	29	55
1979–80	12	np	np	689	2	12	31	53
1980–81	14	np	np	694	2	12	34	55
1981–82	19	np	np	646	2	12	39	53
1982–83	27	np	np	778	2	12	48	58
1983–84	24	np	np	757	17	10	65	60
1984–85	133	np	np	1 364	154	10	55	67
1985–86	142	np	np	1 622	805	14	123	75
1986–87	154	np	np	1 831	1 031	14	89	84
1987–88	255	np	np	1 954	1 253	29	104	94
1988–89	398	np	np	2 116	1 067	29	108	104
1989–90	829	np	np	2 227	1 111	14	113	125
1990–91	988	np	np	2 265	858	14	111	135
1991–92	1 077	np	np	2 306	896	14	120	142
1992–93	1 354	np	np	2 424	904	17	142	159
1993–94	1 480	np	np	2 600	1 164	22	181	173
1994–95	1 723	np	np	2 655	1 501	22	212	181
1995–96	1 993	np	np	2 614	1 301	22	227	190
1996–97	2 046	np	np	2 677	1 699	22	231	198
1997–98	2 207	np	np	2 718	2 058	22	243	205
1998–99	2 352	np	np	2 839	2 043	22	270	207
1999–00	2 458	np	np	2 913	2 031	24	284	207
2000–01	1 624	np	np	3 545	2 443	24	284	212
2001–02	1 680	np	np	3 627	2 451	24	316	219
2002–03	3 475	np	np	4 318	2 366	31	323	217
2003–04	3 684	np	np	4 475	2 501	31	320	210
2004–05	4 501	np	np	3 918	2 487	36	337	219
2005–06	4 766	np	np	3 978	2 496	36	349	218
2006–07	5 017	np	np	4 345	2 737	10	361	227
2007–08	4 706	np	np	4 118	3 108	7	367	233
2008–09	5 164	np	np	3 831	4 340	5	374	234
2009–10	5 660	np	np	4 034	4 335	7	381	236
2010–11	6 229	np	np	3 890	4 842	5	401	241

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



Table E 3.8f Gas usage—Australian gas consumption, by industry—Tasmania

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water		
					<i>gigalitres</i>			
1974–75	0	np	np	0	np	0	3	3
1975–76	0	np	np	0	np	0	3	3
1976–77	0	np	np	0	np	0	3	3
1977–78	0	np	np	0	np	0	3	0
1978–79	0	np	np	0	np	0	0	3
1979–80	0	np	np	0	np	0	0	3
1980–81	0	np	np	0	np	0	0	3
1981–82	0	np	np	0	np	0	3	0
1982–83	0	np	np	0	np	0	3	0
1983–84	0	np	np	0	np	0	3	0
1984–85	0	np	np	0	np	0	3	0
1985–86	0	np	np	0	np	0	3	0
1986–87	0	np	np	0	np	0	3	0
1987–88	0	np	np	0	np	0	3	0
1988–89	0	np	np	0	np	0	3	0
1989–90	0	np	np	0	np	0	3	0
1990–91	0	np	np	0	np	0	3	0
1991–92	0	np	np	0	np	0	3	0
1992–93	0	np	np	0	np	0	3	0
1993–94	0	np	np	0	np	0	3	0
1994–95	0	np	np	0	np	0	3	0
1995–96	0	np	np	0	np	0	3	0
1996–97	0	np	np	0	np	0	3	0
1997–98	0	np	np	0	np	0	3	0
1998–99	0	np	np	0	np	0	0	3
1999–00	0	np	np	0	np	0	0	3
2000–01	0	np	np	0	np	0	3	0
2001–02	0	np	np	0	np	0	3	0
2002–03	0	np	np	34	np	113	2	2
2003–04	0	np	np	34	np	194	2	2
2004–05	0	np	np	50	np	231	-1	2
2005–06	0	np	np	47	np	269	2	2
2006–07	0	np	np	56	np	303	0	2
2007–08	0	np	np	59	np	400	0	3
2008–09	0	np	np	63	np	244	4	3
2009–10	0	np	np	53	np	316	4	3
2010–11	0	np	np	43	np	398	4	3

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.8g** Gas usage—Australian gas consumption, by industry—Northern Territory

Financial year	Mining	Manufacturing		Electricity, gas and water		Other industries	Household consumption	
	Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water			
<i>gigalitres</i>								
1974–75	0	np	np	0	0	0	0	0
1975–76	0	np	np	0	0	0	0	0
1976–77	0	np	np	0	0	0	0	0
1977–78	0	np	np	0	0	0	0	0
1978–79	0	np	np	0	0	0	0	0
1979–80	0	np	np	0	0	0	0	0
1980–81	0	np	np	0	0	0	0	0
1981–82	0	np	np	0	0	0	0	0
1982–83	0	np	np	0	0	0	0	0
1983–84	0	np	np	0	2	2	0	0
1984–85	2	np	np	0	25	25	0	0
1985–86	7	np	np	0	25	25	0	0
1986–87	12	np	np	0	114	114	-0	0
1987–88	10	np	np	0	264	264	5	0
1988–89	2	np	np	0	264	264	5	0
1989–90	2	np	np	0	304	304	2	0
1990–91	2	np	np	0	321	321	2	0
1991–92	2	np	np	0	333	333	0	0
1992–93	0	np	np	0	336	336	5	0
1993–94	2	np	np	0	333	333	2	0
1994–95	2	np	np	0	363	363	5	0
1995–96	2	np	np	0	420	420	2	0
1996–97	2	np	np	2	435	435	7	0
1997–98	5	np	np	2	447	447	10	0
1998–99	5	np	np	2	479	479	12	0
1999–00	5	np	np	2	521	521	12	0
2000–01	5	np	np	2	528	528	5	0
2001–02	5	np	np	2	541	541	5	0
2002–03	2	np	np	1	338	338	8	0
2003–04	17	np	np	1	341	341	6	0
2004–05	17	np	np	1	358	358	6	0
2005–06	160	np	np	1	291	291	9	0
2006–07	489	np	np	1	351	351	6	0
2007–08	457	np	np	1	309	309	6	0
2008–09	519	np	np	1	464	464	6	0
2009–10	583	np	np	1	630	630	9	0
2010–11	680	np	np	1	614	614	8	0

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

Table E 3.8h Gas usage—Australian gas consumption, by industry—Australia

Financial year	Mining	Manufacturing			Electricity, gas and water		Other industries	Household consumption
		Petroleum, coal and chemicals	Basic non-ferrous metals	Other manufacturing	Electricity generation	Other electricity, gas and water		
<i>gigalitres</i>								
1974–75	453	416	617	1 519	871	259	1 073	914
1975–76	525	460	614	1 731	1 023	259	1 149	949
1976–77	538	594	650	1 913	1 346	480	1 395	1 116
1977–78	521	764	655	2 145	1 447	548	1 503	1 175
1978–79	565	871	688	2 363	1 691	533	1 674	1 283
1979–80	625	1 132	721	2 869	1 937	571	1 756	1 322
1980–81	602	1 226	759	3 241	2 704	546	1 899	1 422
1981–82	659	1 366	774	3 243	3 324	589	2 163	1 580
1982–83	805	1 600	924	3 033	2 988	607	2 255	1 636
1983–84	1 008	1 592	881	3 211	3 151	607	2 387	1 703
1984–85	1 265	1 523	1 506	3 400	2 818	622	2 462	1 790
1985–86	1 228	1 551	1 655	3 665	3 412	584	2 599	1 878
1986–87	1 289	1 526	1 770	3 918	3 278	579	2 700	2 019
1987–88	1 509	1 671	1 808	3 873	3 550	515	2 625	1 949
1988–89	1 566	1 615	1 947	3 959	3 646	485	2 719	2 021
1989–90	2 039	1 775	2 059	3 903	4 093	475	3 059	2 316
1990–91	2 121	1 803	2 435	3 599	3 080	414	3 068	2 341
1991–92	2 276	1 754	2 539	3 527	3 351	411	3 209	2 447
1992–93	2 566	1 765	2 646	3 588	3 463	386	3 388	2 560
1993–94	2 618	1 881	2 790	3 788	3 715	371	3 324	2 512
1994–95	2 910	1 960	2 846	3 940	4 250	363	3 602	2 729
1995–96	3 232	1 973	2 828	3 797	3 847	343	3 801	2 888
1996–97	3 308	2 458	2 861	3 749	3 760	343	3 814	2 922
1997–98	3 615	2 465	2 879	3 740	4 238	335	3 958	3 009
1998–99	3 581	2 491	2 945	3 640	4 989	317	3 972	2 982
1999–00	3 754	2 643	2 986	3 743	5 251	330	4 131	3 072
2000–01	3 144	2 978	2 976	4 130	6 137	404	3 995	3 146
2001–02	3 194	2 902	2 999	4 169	6 276	444	4 165	3 231
2002–03	4 976	3 648	3 080	4 895	5 710	467	4 524	3 237
2003–04	5 256	3 739	3 199	4 901	6 137	523	4 536	3 246
2004–05	5 925	3 555	3 473	4 221	6 355	404	4 632	3 324
2005–06	6 285	3 610	3 565	4 052	6 068	404	4 758	3 429
2006–07	6 767	3 429	3 684	4 416	8 503	330	4 815	3 480
2007–08	6 453	3 669	3 544	4 256	9 333	335	4 939	3 533
2008–09	7 240	3 676	3 318	3 720	10 857	353	5 005	3 639
2009–10	7 667	4 045	3 108	3 899	10 976	330	5 753	3 713
2010–11	8 345	3 774	3 146	4 030	12 835	333	5 876	3 813

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.9** Gas usage—Price index for gas and other household fuels, by capital city

Average over financial year ending	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
	<i>base of each index: 2011–12 = 100</i>							
Jun-1990	36.0	39.7	36.6	35.4	34.8	45.2	38.8	31.2
Jun-1991	39.1	42.0	39.2	37.6	38.0	51.2	41.8	35.2
Jun-1992	40.0	44.1	40.5	39.2	38.5	49.6	42.7	36.2
Jun-1993	39.8	47.5	40.8	39.8	38.5	49.7	43.5	36.5
Jun-1994	39.7	49.6	41.0	39.9	38.5	51.2	43.8	37.1
Jun-1995	39.8	51.7	41.2	40.8	38.7	51.3	45.0	37.8
Jun-1996	42.3	51.7	41.8	42.4	38.8	52.2	47.9	40.4
Jun-1997	43.3	52.7	41.8	44.0	39.0	53.6	49.2	41.9
Jun-1998	45.9	53.3	41.8	45.4	38.9	51.7	51.9	42.9
Jun-1999	47.3	50.8	41.8	46.0	39.4	51.2	54.2	44.5
Jun-2000	46.6	49.5	41.9	47.4	39.6	55.2	59.8	45.1
Jun-2001	53.2	54.1	47.8	53.7	43.9	62.9	68.0	52.1
Jun-2002	57.4	55.3	49.4	56.2	46.2	63.7	68.7	51.8
Jun-2003	62.5	58.5	51.0	59.2	47.7	67.0	70.3	55.1
Jun-2004	67.6	62.1	52.8	62.5	49.6	71.6	70.4	58.5
Jun-2005	70.1	65.4	56.1	66.9	51.4	75.1	73.4	62.2
Jun-2006	72.7	68.0	65.8	71.2	54.2	81.0	76.8	65.9
Jun-2007	75.0	70.9	70.6	74.7	56.6	80.8	83.2	68.9
Jun-2008	78.7	74.6	77.3	77.8	58.7	87.2	91.4	74.0
Jun-2009	83.0	81.8	83.8	84.9	68.5	94.8	97.9	84.8
Jun-2010	89.1	88.6	88.6	87.9	81.5	94.8	98.7	92.1
Jun-2011	94.0	94.5	93.1	93.1	89.7	96.5	104.7	95.1
Jun-2012	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Jun-2013	114.8	120.1	115.8	117.7	113.0	101.2	103.0	111.1

Source: ABS (2012–13f).

**Table E 3.10a** Black coal usage—Australian black coal consumption, by industry—  
New South Wales

Financial year	Manufacturing					Electricity generation	Coastal bunkers (water transport)	Other industries	
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals				Other manufacturing
	<i>kilotonnes</i>								
1974–75	242	0	np	np	np	8 515	9 593	0	320
1975–76	251	0	np	np	np	8 072	9 239	0	343
1976–77	246	0	np	np	np	7 271	11 615	0	311
1977–78	231	0	np	np	np	7 454	12 450	0	287
1978–79	220	0	np	np	np	7 245	12 890	0	262
1979–80	215	0	np	np	np	6 909	14 642	0	231
1980–81	205	0	np	np	np	7 202	15 239	0	211
1981–82	205	0	np	np	np	6 577	14 664	0	173
1982–83	188	0	np	np	np	5 171	15 489	0	163
1983–84	217	0	np	np	np	4 956	16 255	0	158
1984–85	208	0	np	np	np	5 175	16 942	0	155
1985–86	217	0	np	np	np	5 002	18 195	0	148
1986–87	205	0	np	np	np	5 149	18 765	0	148
1987–88	213	0	np	np	np	5 313	19 205	0	139
1988–89	205	0	np	np	np	5 993	20 002	0	135
1989–90	200	0	np	np	np	5 486	20 516	0	126
1990–91	243	0	np	np	np	5 397	20 180	0	108
1991–92	229	0	np	np	np	5 487	20 501	0	79
1992–93	181	0	np	np	np	5 298	21 186	0	67
1993–94	185	0	np	np	np	5 558	21 683	0	54
1994–95	163	0	np	np	np	5 442	22 245	0	42
1995–96	166	0	np	np	np	4 950	23 305	0	33
1996–97	159	0	np	np	np	5 188	23 669	0	29
1997–98	151	0	np	np	np	5 197	24 016	0	21
1998–99	144	0	np	np	np	5 168	24 517	0	21
1999–00	142	0	np	np	np	4 590	24 808	0	17
2000–01	146	0	np	np	np	3 968	26 488	0	0
2001–02	146	0	np	np	np	4 033	26 670	0	0
2002–03	161	0	np	np	np	4 565	27 423	0	24
2003–04	162	0	np	np	np	4 933	28 532	0	26
2004–05	167	0	np	np	np	5 012	28 249	0	26
2005–06	174	0	np	np	np	4 950	28 932	0	11
2006–07	179	0	np	np	np	4 957	29 093	0	8
2007–08	199	0	np	np	np	5 047	31 479	0	3
2008–09	188	0	np	np	np	3 725	30 565	0	0
2009–10	182	0	np	np	np	4 412	28 281	0	0
2010–11	177	0	np	np	np	4 773	26 601	0	0

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10b Black coal usage—Australian black coal consumption, by industry—Victoria**

Financial year	Manufacturing					Electricity generation	Coastal bunkers (water transport)	Other industries
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals			
	<i>kilotonnes</i>							
1974–75	0	0	np	np	np	3	0	0
1975–76	0	0	np	np	np	0	0	3
1976–77	0	0	np	np	np	4	0	0
1977–78	0	0	np	np	np	0	0	2
1978–79	0	0	np	np	np	0	0	2
1979–80	0	0	np	np	np	4	0	0
1980–81	0	0	np	np	np	4	0	0
1981–82	0	0	np	np	np	5	0	0
1982–83	0	0	np	np	np	3	0	0
1983–84	0	0	np	np	np	4	0	0
1984–85	0	0	np	np	np	4	0	0
1985–86	0	0	np	np	np	4	0	0
1986–87	0	0	np	np	np	3	0	0
1987–88	0	0	np	np	np	9	0	0
1988–89	0	0	np	np	np	2	0	0
1989–90	0	0	np	np	np	2	0	0
1990–91	0	0	np	np	np	0	0	0
1991–92	0	0	np	np	np	0	0	0
1992–93	0	0	np	np	np	0	0	0
1993–94	0	0	np	np	np	0	0	0
1994–95	0	0	np	np	np	0	0	0
1995–96	0	0	np	np	np	0	0	0
1996–97	0	0	np	np	np	0	0	0
1997–98	0	0	np	np	np	0	0	0
1998–99	0	0	np	np	np	0	0	0
1999–00	0	0	np	np	np	0	0	0
2000–01	0	0	np	np	np	0	0	0
2001–02	0	0	np	np	np	0	0	0
2002–03	0	0	np	np	np	0	0	0
2003–04	0	0	np	np	np	1	0	0
2004–05	0	0	np	np	np	2	0	0
2005–06	0	0	np	np	np	2	0	0
2006–07	0	0	np	np	np	2	0	0
2007–08	0	0	np	np	np	2	0	0
2008–09	0	0	np	np	np	2	0	0
2009–10	0	0	np	np	np	2	0	0
2010–11	0	0	np	np	np	2	0	2

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10c** Black coal usage—Australian black coal consumption, by industry—Queensland

Financial year	Manufacturing					Electricity generation	Coastal bunkers (water transport)	Other industries	
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals				Other manufacturing
	<i>kilotonnes</i>								
1974–75	54	54	np	np	np	1 379	3 732	0	37
1975–76	50	62	np	np	np	1 409	3 789	0	33
1976–77	46	62	np	np	np	1 538	4 111	0	33
1977–78	32	56	np	np	np	1 404	4 539	0	36
1978–79	31	55	np	np	np	1 528	4 537	0	31
1979–80	51	59	np	np	np	1 606	4 899	0	39
1980–81	79	59	np	np	np	1 601	5 305	0	39
1981–82	100	73	np	np	np	1 606	5 775	0	42
1982–83	100	77	np	np	np	1 641	6 620	23	42
1983–84	114	85	np	np	np	1 648	7 822	151	45
1984–85	112	84	np	np	np	1 688	8 368	136	44
1985–86	135	93	np	np	np	1 836	8 750	140	47
1986–87	151	98	np	np	np	2 004	9 497	169	44
1987–88	147	107	np	np	np	1 958	9 824	156	40
1988–89	156	89	np	np	np	2 137	10 295	174	40
1989–90	165	101	np	np	np	2 064	11 042	161	41
1990–91	179	97	np	np	np	2 008	11 379	170	41
1991–92	179	101	np	np	np	2 119	12 008	183	37
1992–93	195	86	np	np	np	2 112	12 615	186	27
1993–94	235	97	np	np	np	2 128	13 041	180	37
1994–95	255	96	np	np	np	2 165	13 928	182	32
1995–96	319	97	np	np	np	2 075	14 898	185	28
1996–97	313	134	np	np	np	2 178	15 226	198	28
1997–98	292	119	np	np	np	2 024	17 261	191	23
1998–99	299	119	np	np	np	2 081	17 842	193	14
1999–00	251	108	np	np	np	2 006	16 499	191	1 243
2000–01	165	124	np	np	np	2 132	19 047	161	28
2001–02	142	124	np	np	np	2 123	20 413	161	28
2002–03	241	129	np	np	np	1 789	19 341	153	26
2003–04	233	130	np	np	np	1 826	21 219	175	26
2004–05	225	142	np	np	np	2 012	23 080	347	26
2005–06	222	143	np	np	np	1 973	23 593	299	25
2006–07	226	145	np	np	np	2 078	24 372	321	25
2007–08	229	145	np	np	np	2 134	21 280	347	24
2008–09	227		np	np	np	2 102	24 269	337	22
2009–10	194		np	np	np	2 016	20 895	327	19
2010–11	224		np	np	np	1 695	19 205	232	14

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Note: Date not available for missing years.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10d Black coal usage—Australian black coal consumption, by industry—  
South Australia**

Financial year	Manufacturing						Electricity generation	Coastal bunkers (water transport)	Other industries	
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals	Other manufacturing				
	<i>kilotonnes</i>									
1974–75	4	0	np	np	np	1 135	0	0	8	
1975–76	0	0	np	np	np	1 065	0	0	0	
1976–77	0	0	np	np	np	1 095	0	0	4	
1977–78	0	0	np	np	np	1 006	0	0	5	
1978–79	0	0	np	np	np	1 272	0	0	0	
1979–80	0	0	np	np	np	1 211	0	0	0	
1980–81	0	0	np	np	np	1 427	0	0	0	
1981–82	0	0	np	np	np	1 154	0	0	0	
1982–83	0	0	np	np	np	935	0	0	0	
1983–84	0	0	np	np	np	1 193	0	0	0	
1984–85	0	0	np	np	np	1 317	0	0	0	
1985–86	0	0	np	np	np	1 443	0	0	0	
1986–87	0	0	np	np	np	1 468	0	0	0	
1987–88	0	0	np	np	np	1 546	0	0	0	
1988–89	0	0	np	np	np	1 555	0	0	0	
1989–90	0	0	np	np	np	1 543	0	0	0	
1990–91	0	0	np	np	np	1 419	0	0	0	
1991–92	0	0	np	np	np	1 395	0	0	0	
1992–93	0	0	np	np	np	1 369	0	0	0	
1993–94	0	0	np	np	np	1 290	0	0	0	
1994–95	0	0	np	np	np	1 302	0	0	0	
1995–96	0	0	np	np	np	1 307	0	0	0	
1996–97	0	0	np	np	np	1 315	0	0	0	
1997–98	0	0	np	np	np	1 355	0	0	0	
1998–99	0	0	np	np	np	1 375	0	0	0	
1999–00	0	0	np	np	np	928	0	0	0	
2000–01	0	0	np	np	np	1 079	0	0	0	
2001–02	0	0	np	np	np	750	0	0	0	
2002–03	0	0	np	np	np	1 753	0	0	0	
2003–04	0	0	np	np	np	1 767	0	0	0	
2004–05	0	0	np	np	np	1 889	0	0	0	
2005–06	0	0	np	np	np	1 904	0	0	0	
2006–07	0	0	np	np	np	1 888	0	0	0	
2007–08	0	0	np	np	np	1 852	0	0	0	
2008–09	0	0	np	np	np	1 737	0	0	0	
2009–10	0	0	np	np	np	1 911	0	0	0	
2010–11	0	0	np	np	np	1 873	0	0	0	

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



**Table E 3.10e** Black coal usage—Australian black coal consumption, by industry—  
Western Australia

Financial year	Manufacturing					Electricity generation	Coastal bunkers (water transport)	Other industries	
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals				Other manufacturing
<i>kilotonnes</i>									
1974–75	0	0	np	np	np	76	1 708	0	46
1975–76	0	0	np	np	np	137	1 971	0	46
1976–77	0	0	np	np	np	157	2 094	0	35
1977–78	0	0	np	np	np	167	2 136	0	36
1978–79	0	0	np	np	np	177	2 188	0	46
1979–80	0	0	np	np	np	152	2 721	0	46
1980–81	0	0	np	np	np	208	2 914	0	46
1981–82	0	0	np	np	np	223	2 983	0	56
1982–83	0	0	np	np	np	269	3 136	0	35
1983–84	0	0	np	np	np	324	3 236	0	41
1984–85	0	0	np	np	np	755	3 365	0	56
1985–86	0	0	np	np	np	786	2 388	0	56
1986–87	0	0	np	np	np	608	2 331	0	132
1987–88	0	0	np	np	np	562	2 361	0	172
1988–89	0	0	np	np	np	578	3 233	0	182
1989–90	0	0	np	np	np	826	3 625	0	299
1990–91	0	0	np	np	np	856	4 398	0	284
1991–92	0	0	np	np	np	922	4 408	0	309
1992–93	0	0	np	np	np	1 033	4 461	0	304
1993–94	0	0	np	np	np	993	4 325	0	284
1994–95	0	0	np	np	np	988	3 977	0	375
1995–96	0	0	np	np	np	1 037	4 746	0	395
1996–97	0	0	np	np	np	983	4 576	0	405
1997–98	0	0	np	np	np	1 004	4 391	0	330
1998–99	0	0	np	np	np	1 013	4 312	0	329
1999–00	0	0	np	np	np	998	4 737	0	345
2000–01	0	0	np	np	np	1 121	4 894	0	0
2001–02	0	0	np	np	np	1 142	5 017	0	0
2002–03	0	0	np	np	np	1 382	5 393	0	0
2003–04	0	0	np	np	np	1 414	5 432	0	- 0
2004–05	0	0	np	np	np	1 335	5 315	0	- 0
2005–06	0	0	np	np	np	1 360	5 134	0	0
2006–07	0	0	np	np	np	1 410	5 103	0	0
2007–08	0	0	np	np	np	1 451	4 563	0	0
2008–09	0	0	np	np	np	1 344	5 017	0	- 0
2009–10	0	0	np	np	np	1 256	4 884	0	0
2010–11	0	0	np	np	np	1 168	5 135	0	283

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10f Black coal usage—Australian black coal consumption, by industry—Tasmania**

Financial year	Manufacturing						Electricity generation	Coastal bunkers (water transport)	Other industries	
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals	Other manufacturing				
	<i>kilotonnes</i>									
1974–75	4	0	np	np	np	88	0	0	18	
1975–76	4	0	np	np	np	108	0	0	17	
1976–77	4	0	np	np	np	165	0	0	17	
1977–78	4	0	np	np	np	155	0	0	13	
1978–79	4	0	np	np	np	174	0	0	9	
1979–80	4	0	np	np	np	175	0	0	9	
1980–81	9	0	np	np	np	181	0	0	17	
1981–82	13	0	np	np	np	233	0	0	22	
1982–83	16	0	np	np	np	287	0	0	21	
1983–84	13	0	np	np	np	262	0	0	30	
1984–85	26	0	np	np	np	293	0	0	30	
1985–86	34	0	np	np	np	318	0	0	39	
1986–87	39	0	np	np	np	324	0	0	22	
1987–88	39	0	np	np	np	335	0	0	34	
1988–89	39	0	np	np	np	375	0	0	34	
1989–90	39	0	np	np	np	360	0	0	30	
1990–91	35	0	np	np	np	376	0	0	22	
1991–92	34	0	np	np	np	329	0	0	26	
1992–93	34	0	np	np	np	301	0	0	22	
1993–94	34	0	np	np	np	366	0	0	22	
1994–95	38	0	np	np	np	375	0	0	26	
1995–96	34	0	np	np	np	376	0	0	21	
1996–97	34	0	np	np	np	391	0	0	17	
1997–98	39	0	np	np	np	383	0	0	17	
1998–99	39	0	np	np	np	364	0	0	17	
1999–00	38	0	np	np	np	359	0	0	21	
2000–01	72	0	np	np	np	343	0	0	0	
2001–02	71	0	np	np	np	340	0	0	0	
2002–03	67	0	np	np	np	203	0	0	8	
2003–04	63	0	np	np	np	229	0	0	8	
2004–05	62	0	np	np	np	256	0	0	8	
2005–06	65	0	np	np	np	280	0	0	8	
2006–07	60	0	np	np	np	285	0	0	8	
2007–08	63	0	np	np	np	282	0	0	7	
2008–09	75	0	np	np	np	283	0	0	7	
2009–10	80	0	np	np	np	234	0	0	6	
2010–11	75	0	np	np	np	158	0	0	4	

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10g** Black coal usage—Australian black coal consumption, by industry—Northern Territory

Financial year	Manufacturing						Electricity generation	Coastal bunkers (water transport)	Other industries
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals	Other manufacturing			
<i>kilotonnes</i>									
1974–75	0	0	np	np	np	0	0	0	0
1975–76	0	0	np	np	np	0	0	0	0
1976–77	0	0	np	np	np	0	0	0	0
1977–78	0	0	np	np	np	0	0	0	0
1978–79	0	0	np	np	np	0	0	0	0
1979–80	0	0	np	np	np	0	0	0	0
1980–81	0	0	np	np	np	0	0	0	0
1981–82	0	0	np	np	np	0	0	0	0
1982–83	0	0	np	np	np	0	0	0	0
1983–84	0	0	np	np	np	0	0	0	0
1984–85	0	0	np	np	np	0	0	0	0
1985–86	0	0	np	np	np	0	0	0	0
1986–87	0	0	np	np	np	0	0	0	0
1987–88	0	0	np	np	np	0	0	0	0
1988–89	0	0	np	np	np	0	0	0	0
1989–90	0	0	np	np	np	0	0	0	0
1990–91	0	0	np	np	np	0	0	0	0
1991–92	0	0	np	np	np	0	0	0	0
1992–93	0	0	np	np	np	0	0	0	0
1993–94	0	0	np	np	np	0	0	0	0
1994–95	0	0	np	np	np	0	0	0	0
1995–96	0	0	np	np	np	0	0	0	0
1996–97	0	0	np	np	np	0	0	0	0
1997–98	0	0	np	np	np	0	0	0	0
1998–99	0	0	np	np	np	0	0	0	0
1999–00	0	0	np	np	np	0	0	0	0
2000–01	0	0	np	np	np	0	0	0	0
2001–02	0	0	np	np	np	0	0	0	0
2002–03	0	0	np	np	np	0	0	0	0
2003–04	0	0	np	np	np	0	0	0	0
2004–05	0	0	np	np	np	0	0	0	0
2005–06	0	0	np	np	np	0	0	0	0
2006–07	0	0	np	np	np	0	0	0	0
2007–08	0	0	np	np	np	0	0	0	0
2008–09	0	0	np	np	np	0	0	0	0
2009–10	0	0	np	np	np	0	0	0	0
2010–11	0	0	np	np	np	0	0	0	0

np: Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.10h Black coal usage—Australian black coal consumption, by industry—  
Australia**

Financial year	Manufacturing						Electricity generation	Coastal bunkers (water transport)	Other industries
	Food beverages and tobacco	Wood, paper and printing	Cement, lime, plaster and concrete	Iron and steel	Basic non-ferrous metals	Other manufacturing			
	<i>kilotonnes</i>								
1974–75	304	54	813	8 550	940	883	15 034	0	428
1975–76	305	62	745	8 186	1 006	839	14 999	0	441
1976–77	296	62	767	7 473	1 105	896	17 821	0	401
1977–78	267	56	700	7 488	1 045	812	19 125	0	378
1978–79	256	55	755	7 576	1 161	794	19 615	0	349
1979–80	271	59	732	7 230	1 238	758	22 262	0	324
1980–81	293	59	763	7 724	1 241	801	23 458	0	313
1981–82	318	73	861	6 859	1 169	801	23 422	0	293
1982–83	305	77	807	5 316	1 202	885	25 245	23	261
1983–84	344	85	688	5 464	1 272	904	27 313	151	273
1984–85	346	84	787	5 691	1 582	1 075	28 675	136	285
1985–86	387	93	793	5 635	1 704	1 149	29 333	140	289
1986–87	395	98	662	5 897	1 862	1 054	30 593	169	345
1987–88	399	107	646	6 098	1 847	1 027	31 390	156	386
1988–89	400	89	778	6 807	1 892	1 065	33 530	174	392
1989–90	404	101	739	6 333	1 883	1 218	35 182	161	496
1990–91	457	97	676	6 226	1 886	1 181	35 956	170	455
1991–92	442	101	643	6 311	2 007	1 186	36 917	183	451
1992–93	410	86	658	6 084	2 052	1 208	38 263	186	419
1993–94	454	97	769	6 233	2 087	1 159	39 048	180	396
1994–95	456	96	779	6 134	2 102	1 167	40 150	182	474
1995–96	520	97	688	5 786	2 032	1 171	42 948	185	477
1996–97	506	134	696	6 001	2 088	1 177	43 470	198	479
1997–98	481	119	754	5 924	2 063	1 124	45 668	191	391
1998–99	481	119	776	5 889	2 098	1 098	46 671	193	382
1999–00	432	108	706	5 052	2 066	1 046	46 044	191	1 626
2000–01	383	124	829	4 582	2 056	1 114	50 429	161	28
2001–02	360	124	825	4 609	2 047	1 118	52 101	161	28
2002–03	469	129	1 077	5 024	1 794	1 142	52 158	153	58
2003–04	458	130	1 115	5 385	1 826	1 177	55 184	175	60
2004–05	454	142	1 044	5 469	2 047	1 227	56 644	347	60
2005–06	460	143	1 052	5 419	2 017	1 257	57 658	299	43
2006–07	464	145	1 091	5 462	2 117	1 235	58 568	321	40
2007–08	491	145	1 131	5 475	2 247	1 233	57 321	347	34
2008–09	489	0	1 059	4 170	2 133	1 178	59 850	337	29
2009–10	456	0	1 121	4 947	1 956	1 096	54 060	327	25
2010–11	476	0	1 080	5 308	1 616	955	50 942	232	303

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.11** Black coal usage—coal prices (export)

Average over financial year ending	Hard coking coal	Semisoft coking coal \$/tonne	Thermal coal
Jun-2002	81.77	66.51	57.51
Jun-2003	77.08	56.25	44.50
Jun-2004	64.26	49.10	40.98
Jun-2005	95.28	69.40	59.55
Jun-2006	157.49	111.65	65.02
Jun-2007	132.96	81.97	60.54
Jun-2008	129.66	97.46	72.70
Jun-2009	318.28	251.46	131.16
Jun-2010	174.59	125.37	88.06
Jun-2011	230.85	177.06	97.37
Jun-2012	237.07	177.55	108.08

Source: BREE (2012b).

**Table E 3.12a** Brown coal usage—Australian brown coal consumption, by industry—  
New South Wales

Financial year	Mining	Manufacturing	Electricity generation	Households	Other industries
			<i>kilotonnes</i>		
1974–75	0	0	0	0	0
1975–76	0	0	0	0	0
1976–77	0	0	0	0	0
1977–78	0	0	0	0	0
1978–79	0	0	0	0	0
1979–80	0	0	0	0	0
1980–81	0	0	0	0	0
1981–82	0	0	0	0	0
1982–83	0	0	0	0	0
1983–84	0	0	0	0	0
1984–85	0	0	0	0	0
1985–86	0	0	0	0	0
1986–87	0	0	0	0	0
1987–88	0	0	0	0	0
1988–89	0	0	0	0	0
1989–90	0	0	0	0	0
1990–91	0	0	0	0	0
1991–92	0	0	0	0	0
1992–93	0	0	0	0	0
1993–94	0	5	0	0	0
1994–95	0	5	0	0	0
1995–96	0	5	0	0	0
1996–97	0	0	0	0	0
1997–98	0	0	0	0	0
1998–99	0	10	0	0	0
1999–00	0	10	0	0	0
2000–01	0	9	0	0	0
2001–02	0	9	0	0	0
2002–03	0	11	0	0	0
2003–04	0	7	0	0	0
2004–05	0	8	0	0	0
2005–06	0	7	0	0	0
2006–07	0	6	0	0	0
2007–08	0	6	0	0	0
2008–09	0	2	0	0	0
2009–10	0	1	0	0	0
2010–11	0	1	0	0	0

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.12b** Brown coal usage—Australian brown coal consumption, by industry—Victoria

Financial year	Mining	Manufacturing	Electricity generation	Households	Other industries
			<i>kilotonnes</i>		
1974–75	2 673	na	na	304	na
1975–76	2 295	na	na	204	na
1976–77	2 501	na	na	166	na
1977–78	2 584	na	na	125	na
1978–79	2 715	na	na	101	na
1979–80	3 005	na	na	78	na
1980–81	2 612	na	na	65	na
1981–82	2 448	na	na	47	na
1982–83	1 819	na	na	33	na
1983–84	1 835	na	na	28	na
1984–85	1 953	na	na	23	na
1985–86	2 004	na	na	19	na
1986–87	1 935	na	na	19	na
1987–88	1 909	na	na	14	na
1988–89	1 663	na	na	14	na
1989–90	1 680	na	na	14	na
1990–91	1 686	na	na	9	na
1991–92	1 895	na	na	9	na
1992–93	1 200	na	na	9	na
1993–94	1 399	na	na	9	na
1994–95	1 358	na	na	9	na
1995–96	1 251	na	na	10	na
1996–97	1 472	na	na	10	na
1997–98	1 190	na	na	5	na
1998–99	922	na	na	5	na
1999–00	1 108	na	na	5	na
2000–01	859	na	na	5	na
2001–02	1 254	na	na	5	na
2002–03	1 323	na	na	6	na
2003–04	987	na	na	3	na
2004–05	1 037	na	na	4	na
2005–06	799	na	na	3	na
2006–07	747	na	na	2	na
2007–08	704	na	na	2	na
2008–09	599	na	na	2	na
2009–10	485	na	na	1	na
2010–11	550	na	na	2	na

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.12c** Brown coal usage—Australian brown coal consumption, by industry—Australia

Financial year	Mining	Manufacturing	Electricity generation	Households	Other industries
	<i>kilotonnes</i>				
1974–75	2 673	1 088	25 115	304	104
1975–76	2 295	1 024	27 417	204	94
1976–77	2 501	910	29 043	166	98
1977–78	2 584	886	28 350	125	88
1978–79	2 715	938	29 680	101	87
1979–80	3 005	893	30 319	78	87
1980–81	2 612	902	29 909	65	83
1981–82	2 448	834	35 436	47	85
1982–83	1 819	777	33 259	33	70
1983–84	1 835	744	31 682	28	79
1984–85	1 953	766	36 897	23	89
1985–86	2 004	865	35 130	19	90
1986–87	1 935	817	41 026	19	79
1987–88	1 909	847	42 941	14	89
1988–89	1 663	669	48 248	14	83
1989–90	1 680	585	46 292	14	90
1990–91	1 686	529	49 375	9	89
1991–92	1 895	443	50 804	9	85
1992–93	1 200	425	48 381	9	80
1993–94	1 399	381	49 252	9	85
1994–95	1 358	382	51 253	9	90
1995–96	1 251	374	54 198	10	97
1996–97	1 472	416	58 610	10	76
1997–98	1 190	385	67 102	5	57
1998–99	922	280	70 876	5	68
1999–00	1 108	310	71 360	5	95
2000–01	859	207	69 904	5	147
2001–02	1 254	108	70 448	5	127
2002–03	1 323	368	67 632	6	110
2003–04	987	187	69 546	3	58
2004–05	1 037	247	69 386	4	75
2005–06	799	198	71 110	3	61
2006–07	747	158	70 616	2	50
2007–08	704	143	71 102	2	45
2008–09	599	127	77 362	2	41
2009–10	485	134	73 139	1	38
2010–11	550	137	71 887	2	38

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



**Table E 3.13a** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—New South Wales

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	73	np	np	2 985	4 921	878	822	205	417	11 176
1975–76	75	np	np	2 772	5 090	761	832	218	417	11 006
1976–77	80	np	np	2 734	5 289	849	831	221	465	11 248
1977–78	80	np	np	2 413	5 627	896	885	226	422	11 203
1978–79	86	np	np	2 314	5 784	780	858	234	420	11 126
1979–80	96	np	np	2 189	5 967	788	876	227	293	11 065
1980–81	104	np	np	1 806	6 144	800	848	218	214	10 715
1981–82	112	np	np	1 699	6 302	643	926	237	201	10 734
1982–83	114	np	np	1 259	6 108	648	837	192	181	9 692
1983–84	104	np	np	1 397	6 483	632	910	208	165	10 245
1984–85	99	np	np	1 533	6 567	574	1 000	223	170	10 526
1985–86	106	np	np	1 553	6 755	509	1 018	181	159	10 765
1986–87	119	np	np	1 480	6 851	452	1 027	210	158	10 719
1987–88	111	np	np	1 712	7 095	450	1 206	220	144	11 329
1988–89	140	np	np	1 723	7 298	471	1 334	212	137	11 753
1989–90	162	np	np	1 906	7 375	403	1 313	192	152	11 903
1990–91	165	np	np	1 855	7 378	358	1 430	184	165	11 903
1991–92	166	np	np	1 984	7 543	334	1 501	187	174	12 200
1992–93	166	np	np	2 259	7 688	307	1 621	194	154	12 667
1993–94	179	np	np	2 045	7 872	325	1 617	187	148	12 725
1994–95	179	np	np	2 234	8 067	521	1 778	179	157	13 452
1995–96	197	np	np	2 220	8 126	658	2 054	184	150	14 198
1996–97	228	np	np	1 331	8 214	553	2 138	184	145	13 511
1997–98	246	np	np	1 409	8 300	470	2 205	186	147	13 695
1998–99	251	np	np	1 499	8 431	502	2 164	267	114	13 914
1999–00	251	np	np	1 430	8 592	593	2 319	295	118	14 352
2000–01	269	np	np	1 779	8 425	391	2 492	158	144	14 660
2001–02	331	np	np	1 610	8 604	418	2 078	188	120	14 439
2002–03	341	np	np	431	8 167	336	1 805	183	84	12 303
2003–04	461	np	np	400	8 525	315	1 770	191	71	12 649
2004–05	509	np	np	404	8 415	364	1 986	190	71	12 821
2005–06	487	np	np	482	8 595	511	2 139	211	81	13 458
2006–07	463	np	np	557	8 695	488	2 392	212	129	13 869
2007–08	487	np	np	518	8 835	498	2 738	226	119	14 360
2008–09	526	np	np	613	8 932	359	2 679	192	116	14 357
2009–10	630	np	np	700	9 030	312	3 027	203	127	14 965
2010–11	795	np	np	623	9 057	225	3 205	304	145	15 335

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13b** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—Victoria

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	44	np	np	1 725	3 993	682	383	78	596	8 068
1975–76	42	np	np	1 469	4 177	641	396	76	562	7 958
1976–77	49	np	np	1 670	4 419	645	399	80	596	8 499
1977–78	40	np	np	1 712	4 582	763	444	80	537	8 854
1978–79	35	np	np	1 681	4 798	702	422	80	510	8 957
1979–80	31	np	np	1 689	4 855	595	445	81	348	8 636
1980–81	18	np	np	1 515	4 866	570	471	81	240	8 234
1981–82	22	np	np	1 393	5 080	470	493	81	214	8 215
1982–83	17	np	np	1 248	5 082	414	471	68	182	7 911
1983–84	17	np	np	1 395	5 255	389	436	71	181	8 118
1984–85	19	np	np	1 480	5 434	373	470	69	170	8 349
1985–86	17	np	np	1 526	5 563	323	480	69	157	8 405
1986–87	19	np	np	1 501	5 680	403	543	63	156	8 650
1987–88	16	np	np	1 652	6 006	366	576	66	146	9 123
1988–89	16	np	np	1 710	6 252	381	568	66	142	9 516
1989–90	21	np	np	1 502	6 383	401	562	59	144	9 425
1990–91	23	np	np	1 657	6 166	317	591	58	136	9 236
1991–92	21	np	np	1 565	6 208	372	654	61	148	9 324
1992–93	23	np	np	1 649	6 422	309	615	58	174	9 570
1993–94	25	np	np	1 926	6 481	332	613	43	160	9 864
1994–95	25	np	np	1 928	6 734	327	701	36	148	10 172
1995–96	21	np	np	2 081	6 853	360	747	39	156	10 545
1996–97	18	np	np	2 066	6 918	388	785	36	158	10 691
1997–98	18	np	np	2 204	7 135	285	820	36	149	11 068
1998–99	18	np	np	2 235	7 410	303	814	41	130	11 395
1999–00	18	np	np	2 190	7 526	347	912	44	129	11 594
2000–01	26	np	np	1 488	7 229	239	1 007	49	133	10 574
2001–02	26	np	np	1 435	7 642	261	949	49	133	10 887
2002–03	11	np	np	1 009	7 701	253	898	54	131	10 684
2003–04	10	np	np	960	8 158	306	994	57	125	11 256
2004–05	16	np	np	955	8 056	306	1 056	97	127	11 277
2005–06	36	np	np	972	7 991	320	1 147	104	133	11 265
2006–07	41	np	np	795	7 835	296	1 100	117	179	10 886
2007–08	43	np	np	352	8 031	370	963	134	160	10 616
2008–09	41	np	np	329	7 662	441	1 087	132	152	10 338
2009–10	44	np	np	313	7 639	352	1 114	141	131	10 250
2010–11	78	np	np	369	7 559	299	1 152	230	153	10 763

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13c** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—Queensland

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	np	np	np	945	2 089	225	280	149	98	4 566
1975–76	np	np	np	1 093	2 199	243	303	160	99	4 875
1976–77	np	np	np	1 127	2 394	257	325	154	103	5 192
1977–78	np	np	np	1 113	2 499	236	320	159	105	5 290
1978–79	np	np	np	1 104	2 680	239	328	174	103	5 513
1979–80	np	np	np	1 101	2 796	220	353	177	101	5 663
1980–81	np	np	np	1 059	2 908	233	357	169	96	5 791
1981–82	np	np	np	891	3 169	208	398	177	106	6 071
1982–83	np	np	np	640	3 202	183	394	172	95	5 673
1983–84	np	np	np	707	3 326	136	386	198	89	5 855
1984–85	np	np	np	672	3 539	91	410	205	86	5 980
1985–86	np	np	np	660	3 642	89	429	213	84	6 115
1986–87	np	np	np	671	3 725	129	450	202	86	6 290
1987–88	np	np	np	722	3 934	104	504	183	86	6 643
1988–89	np	np	np	740	4 194	147	581	130	86	7 059
1989–90	np	np	np	747	4 330	166	512	130	92	7 181
1990–91	np	np	np	489	4 269	156	651	133	96	6 996
1991–92	np	np	np	479	4 409	142	714	96	87	7 162
1992–93	np	np	np	486	4 585	104	837	93	98	7 505
1993–94	np	np	np	513	4 837	107	926	96	91	7 920
1994–95	np	np	np	527	5 032	252	1 080	98	87	8 499
1995–96	np	np	np	530	5 286	147	1 100	98	86	8 689
1996–97	np	np	np	553	5 457	167	1 130	96	96	8 994
1997–98	np	np	np	576	5 451	203	1 077	96	91	9 079
1998–99	np	np	np	588	5 550	105	1 028	101	96	9 148
1999–00	np	np	np	893	5 767	115	926	101	104	9 681
2000–01	np	np	np	396	5 789	126	963	200	100	9 154
2001–02	np	np	np	400	5 955	118	865	217	102	9 310
2002–03	np	np	np	325	5 966	77	899	195	101	9 342
2003–04	np	np	np	327	6 481	71	905	224	94	9 954
2004–05	np	np	np	337	6 561	75	982	208	86	10 293
2005–06	np	np	np	425	6 735	87	1 042	243	77	10 699
2006–07	np	np	np	408	7 105	124	1 126	258	104	11 257
2007–08	np	np	np	376	7 246	123	1 313	381	102	11 738
2008–09	np	np	np	331	7 108	89	1 352	282	107	11 573
2009–10	np	np	np	376	7 041	107	1 454	302	96	11 685
2010–11	np	np	np	422	7 283	109	1 498	249	102	11 880

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13d** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—South Australia

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	34	np	np	513	1 349	80	112	91	121	2 677
1975–76	32	np	np	526	1 429	82	111	96	117	2 782
1976–77	79	np	np	344	1 519	102	116	96	127	2 790
1977–78	83	np	np	377	1 545	137	126	99	113	2 830
1978–79	88	np	np	304	1 595	147	129	96	115	2 840
1979–80	88	np	np	305	1 565	162	126	102	85	2 807
1980–81	81	np	np	179	1 541	161	132	107	64	2 573
1981–82	72	np	np	145	1 561	109	122	91	66	2 515
1982–83	53	np	np	106	1 600	129	129	83	56	2 473
1983–84	48	np	np	91	1 676	86	132	99	52	2 480
1984–85	41	np	np	94	1 756	76	137	96	59	2 560
1985–86	40	np	np	119	1 808	58	153	99	54	2 630
1986–87	42	np	np	105	1 838	65	157	101	51	2 614
1987–88	43	np	np	124	1 915	39	154	101	55	2 669
1988–89	48	np	np	138	1 969	55	179	109	51	2 789
1989–90	41	np	np	121	2 023	42	144	109	50	2 777
1990–91	36	np	np	108	1 947	32	178	106	45	2 686
1991–92	41	np	np	93	1 981	27	166	109	44	2 694
1992–93	42	np	np	94	2 022	52	170	112	50	2 774
1993–94	42	np	np	105	2 044	60	170	111	46	2 820
1994–95	45	np	np	109	2 046	44	179	106	46	2 810
1995–96	45	np	np	108	2 059	27	184	104	47	2 805
1996–97	45	np	np	110	2 067	27	189	106	46	2 847
1997–98	45	np	np	96	2 137	29	189	106	46	2 906
1998–99	66	np	np	90	2 158	22	201	106	39	2 961
1999–00	83	np	np	98	2 253	22	198	106	39	3 070
2000–01	78	np	np	91	2 251	10	202	63	39	3 033
2001–02	72	np	np	101	2 299	22	159	52	47	3 018
2002–03	101	np	np	54	2 362	12	145	53	43	3 113
2003–04	85	np	np	43	2 160	6	141	57	35	2 838
2004–05	85	np	np	43	2 176	13	154	41	33	2 860
2005–06	108	np	np	50	2 217	15	201	44	32	2 998
2006–07	91	np	np	56	2 290	14	200	43	36	3 070
2007–08	84	np	np	64	2 313	9	242	45	41	3 156
2008–09	117	np	np	57	2 353	9	212	47	41	3 157
2009–10	115	np	np	50	2 394	22	201	51	42	3 213
2010–11	169	np	np	46	2 325	11	245	126	44	3 353

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13e** Petroleum usage —Australian petroleum fuel consumption,<sup>1</sup> by industry—Western Australia

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	368	np	np	587	1 314	713	210	159	134	4 441
1975–76	370	np	np	750	1 390	600	216	167	140	4 569
1976–77	424	np	np	975	1 511	755	244	164	138	5 217
1977–78	422	np	np	1 027	1 568	747	256	167	137	5 371
1978–79	467	np	np	1 043	1 651	648	262	161	144	5 453
1979–80	512	np	np	996	1 667	589	260	154	126	5 260
1980–81	283	np	np	903	1 711	577	264	154	112	4 969
1981–82	212	np	np	845	1 776	362	282	141	101	4 655
1982–83	194	np	np	633	1 798	429	303	138	86	4 513
1983–84	199	np	np	868	1 848	324	270	125	81	4 663
1984–85	221	np	np	447	1 923	376	271	143	79	4 258
1985–86	222	np	np	162	1 963	267	294	148	77	3 806
1986–87	248	np	np	137	2 034	259	316	150	76	3 861
1987–88	258	np	np	101	2 133	387	301	154	68	4 073
1988–89	321	np	np	151	2 275	292	299	145	71	4 390
1989–90	406	np	np	102	2 326	256	299	150	71	4 524
1990–91	429	np	np	206	2 308	227	329	155	70	4 601
1991–92	458	np	np	126	2 341	211	351	161	67	4 594
1992–93	486	np	np	93	2 384	219	357	143	70	4 658
1993–94	530	np	np	94	2 594	182	390	148	69	4 926
1994–95	571	np	np	117	2 703	234	436	148	66	5 325
1995–96	692	np	np	173	2 914	259	462	145	70	5 766
1996–97	803	np	np	108	3 049	228	494	150	65	5 782
1997–98	749	np	np	110	3 103	152	490	145	66	5 632
1998–99	742	np	np	130	3 163	161	501	145	69	5 656
1999–00	778	np	np	130	3 133	140	503	145	70	5 647
2000–01	797	np	np	508	3 098	205	521	181	66	6 036
2001–02	823	np	np	670	3 119	283	429	174	67	6 243
2002–03	775	np	np	174	3 245	224	414	153	115	5 888
2003–04	716	np	np	192	3 266	225	406	168	100	5 977
2004–05	756	np	np	203	3 457	330	426	179	115	6 414
2005–06	717	np	np	190	3 292	273	715	191	54	6 384
2006–07	798	np	np	199	3 525	403	898	206	54	7 107
2007–08	859	np	np	311	3 539	435	712	207	48	7 279
2008–09	1 020	np	np	246	3 699	450	741	231	46	7 512
2009–10	906	np	np	462	3 559	489	770	236	48	7 473
2010–11	992	np	np	198	4 187	486	851	141	47	7 825

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13f** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—Tasmania

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	np	np	np	np	415	55	23	10	84	1 050
1975–76	np	np	np	np	426	66	27	10	85	1 062
1976–77	np	np	np	np	461	63	28	11	96	1 081
1977–78	np	np	np	np	474	49	32	10	95	1 080
1978–79	np	np	np	np	493	41	39	10	87	1 108
1979–80	np	np	np	np	494	49	44	10	63	1 138
1980–81	np	np	np	np	491	48	38	10	46	1 094
1981–82	np	np	np	np	498	28	38	10	40	1 102
1982–83	np	np	np	np	491	18	37	10	36	1 010
1983–84	np	np	np	np	514	27	36	10	30	1 021
1984–85	np	np	np	np	535	15	37	13	29	984
1985–86	np	np	np	np	549	30	46	10	25	965
1986–87	np	np	np	np	553	28	38	10	25	945
1987–88	np	np	np	np	560	22	38	10	25	960
1988–89	np	np	np	np	579	20	34	10	27	983
1989–90	np	np	np	np	592	20	30	10	26	1 158
1990–91	np	np	np	np	588	13	33	13	21	1 208
1991–92	np	np	np	np	589	8	30	10	23	953
1992–93	np	np	np	np	617	10	32	10	26	1 001
1993–94	np	np	np	np	605	26	35	10	22	999
1994–95	np	np	np	np	613	23	36	10	25	1 018
1995–96	np	np	np	np	620	16	33	10	22	997
1996–97	np	np	np	np	627	13	36	10	21	985
1997–98	np	np	np	np	638	8	29	10	84	977
1998–99	np	np	np	np	642	5	29	10	13	979
1999–00	np	np	np	np	634	5	41	10	12	975
2000–01	np	np	np	np	600	5	33	13	11	968
2001–02	np	np	np	np	618	8	33	13	11	983
2002–03	np	np	np	np	637	17	32	13	3	927
2003–04	np	np	np	np	670	20	35	18	4	956
2004–05	np	np	np	np	658	9	43	20	2	924
2005–06	np	np	np	np	648	9	34	14	10	946
2006–07	np	np	np	np	658	9	33	14	10	948
2007–08	np	np	np	np	650	13	35	14	13	961
2008–09	np	np	np	np	638	5	39	14	14	922
2009–10	np	np	np	np	620	8	29	15	15	918
2010–11	np	np	np	np	624	7	28	7	16	867

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13g** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—Northern Territory

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	16	np	np	np	104	22	97	3	8	813
1975–76	13	np	np	np	112	8	65	0	5	778
1976–77	16	np	np	np	132	20	67	0	5	839
1977–78	13	np	np	np	138	8	78	0	5	881
1978–79	13	np	np	np	148	15	85	0	5	892
1979–80	16	np	np	np	166	33	91	0	5	997
1980–81	18	np	np	np	178	15	77	0	6	1 029
1981–82	13	np	np	np	190	8	80	0	6	964
1982–83	13	np	np	np	206	3	87	0	5	1 020
1983–84	13	np	np	np	226	5	93	0	10	1 091
1984–85	30	np	np	np	240	5	95	0	8	1 114
1985–86	21	np	np	np	255	3	104	0	9	1 145
1986–87	21	np	np	np	287	8	117	- 3	9	1 112
1987–88	23	np	np	np	269	8	123	0	10	1 004
1988–89	31	np	np	np	287	8	97	0	10	1 009
1989–90	37	np	np	np	295	3	104	0	9	1 011
1990–91	37	np	np	np	299	5	112	0	9	1 057
1991–92	31	np	np	np	302	3	139	0	9	1 095
1992–93	31	np	np	np	297	5	154	3	9	1 099
1993–94	28	np	np	np	300	13	173	0	9	1 133
1994–95	26	np	np	np	304	28	193	0	9	1 184
1995–96	34	np	np	np	379	23	186	0	9	1 266
1996–97	39	np	np	np	386	26	179	3	14	1 305
1997–98	49	np	np	np	395	41	158	0	9	1 308
1998–99	44	np	np	np	395	49	163	- 3	9	1 341
1999–00	47	np	np	np	393	52	203	- 3	9	1 410
2000–01	52	np	np	np	368	31	188	3	6	1 301
2001–02	46	np	np	np	392	26	169	5	7	1 300
2002–03	22	np	np	np	375	19	144	3	4	1 223
2003–04	48	np	np	np	361	14	164	2	3	1 287
2004–05	81	np	np	np	357	11	171	2	3	1 275
2005–06	138	np	np	np	306	25	166	1	5	1 227
2006–07	89	np	np	np	385	62	176	2	6	1 382
2007–08	80	np	np	np	406	47	152	2	6	1 458
2008–09	77	np	np	np	467	52	159	2	6	1 508
2009–10	70	np	np	np	494	83	161	3	6	1 151
2010–11	59	np	np	np	455	70	166	21	6	925

<sup>1</sup> See end notes.

np Not available for publication but included in the 'other manufacturing' category and the totals.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).

**Table E 3.13h** Petroleum usage—Australian petroleum fuel consumption,<sup>1</sup> by industry—Australia

Financial year	Mining	Manufacturing			Transport				Residential	Total consumption
		Petroleum refining (excluding feedstock)	Basic chemicals	Other manufacturing	Road transport	Water transport	Air transport	Other transport		
<i>gigalitres</i>										
1974–75	712	np	1 535	5 934	14 179	2 653	1 926	704	1 447	32 794
1975–76	712	np	1 254	6 036	14 820	2 399	1 949	718	1 419	33 036
1976–77	843	np	1 298	6 237	15 722	2 690	2 011	726	1 533	34 866
1977–78	837	np	1 261	6 045	16 437	2 832	2 142	739	1 406	35 506
1978–79	875	np	1 248	5 870	17 149	2 560	2 122	759	1 377	35 887
1979–80	933	np	1 451	5 522	17 513	2 427	2 196	753	1 023	35 561
1980–81	702	np	1 347	4 779	17 838	2 400	2 189	736	774	34 403
1981–82	624	np	1 379	4 189	18 575	1 825	2 336	731	729	34 259
1982–83	581	np	1 140	3 309	18 481	1 823	2 266	666	640	32 289
1983–84	576	np	1 373	3 668	19 327	1 593	2 259	713	603	33 473
1984–85	596	np	1 623	3 185	19 992	1 509	2 416	756	603	33 773
1985–86	622	np	1 669	2 902	20 537	1 273	2 528	721	563	33 825
1986–87	692	np	1 557	2 858	20 955	1 338	2 644	749	567	34 195
1987–88	704	np	1 812	3 080	21 904	1 375	2 902	730	534	35 797
1988–89	833	np	1 823	3 207	22 847	1 377	3 089	676	524	37 500
1989–90	955	np	1 889	3 074	23 319	1 291	2 964	652	539	37 979
1990–91	983	np	1 886	3 049	22 949	1 106	3 323	649	538	37 689
1991–92	1 023	np	1 904	2 970	23 363	1 089	3 558	626	552	38 022
1992–93	1 075	np	2 118	3 088	24 005	1 010	3 779	614	584	39 276
1993–94	1 135	np	2 146	3 148	24 729	1 042	3 926	601	543	40 386
1994–95	1 206	np	2 224	3 324	25 496	1 432	4 403	583	543	42 462
1995–96	1 392	np	2 315	3 403	26 233	1 485	4 764	580	540	44 219
1996–97	1 560	np	1 581	3 203	26 716	1 400	4 951	586	541	44 070
1997–98	1 604	np	1 555	3 410	27 157	1 187	4 964	580	532	44 665
1998–99	1 643	np	1 570	3 628	27 745	1 150	4 900	671	469	45 394
1999–00	1 685	np	1 491	3 860	28 306	1 269	5 105	702	479	46 729
2000–01	1 925	np	1 385	3 415	27 815	1 040	5 396	664	512	45 726
2001–02	2 083	np	1 389	3 474	28 596	1 142	4 674	698	505	46 180
2002–03	2 264	np	636	1 961	28 304	928	4 339	661	480	43 478
2003–04	2 360	np	628	1 893	29 450	931	4 417	724	434	44 916
2004–05	2 645	np	617	1 967	29 520	977	4 819	739	428	45 863
2005–06	2 628	np	664	2 045	29 687	1 082	5 443	803	385	46 978
2006–07	2 603	np	735	1 876	30 425	1 281	5 924	853	516	48 517
2007–08	2 758	np	550	1 718	30 873	1 322	6 155	1 006	488	49 568
2008–09	3 058	np	724	1 375	30 792	1 301	6 269	904	481	49 368
2009–10	3 089	np	748	1 580	30 653	1 115	6 755	958	466	49 656
2010–11	3 604	np	738	1 212	31 320	991	7 147	1 016	512	50 946

<sup>1</sup> See end notes.

Source: BITRE estimates based on BREE (2012a) and BREE (2013).



**Table E 3.14** Petroleum usage—World crude oil prices, by region of origin

Average over financial year	World Trade Weighted	Dubai <sup>2</sup>	Brent <sup>3</sup>	West Texas Intermediate <sup>4</sup>	Gippsland <sup>5</sup>	Tapis <sup>6</sup>
<i>US\$/bbl</i>						
1990–91	21.95	20.74	24.64	25.32		
1991–92	17.76	16.96	19.61	20.89		
1992–93	17.74	16.91	19.08	20.52		
1993–94	14.45	13.88	15.51	16.74		
1994–95	16.83	16.20	17.31	18.48		
1995–96	17.44	16.30	17.92	19.38		
1996–97	20.55	19.35	21.20	22.47		
1997–98	14.88	15.10	16.47	17.59	16.52	18.04
1998–99	12.08	12.61	13.01	14.49	13.33	13.07
1999–00	23.73	22.96	25.07	25.84	25.00	24.33
2000–01	26.35	26.25	28.90	30.10	29.48	29.23
2001–02	21.24	21.78	22.75	23.80	23.01	24.15
2002–03	26.21	25.90	27.78	29.86	28.59	28.79
2003–04	29.20	29.47	31.31	33.76	32.99	33.20
2004–05	41.43	40.80	46.24	48.80	48.36	49.18
2005–06	57.52	58.32	62.42	64.27	64.60	66.73
2006–07	59.96	61.27	63.94	63.37	67.53	69.32
2007–08	92.23	90.42	95.27	96.85	98.45	100.87
2008–09	67.21	67.58	68.25	69.93	71.07	74.13
2009–10	73.39	74.23	74.52	75.22	76.53	77.46
2010–11	93.11	92.32	96.21	89.39	98.87	100.74
2011–12	106.27	108.14	110.63	94.22	116.03	115.82

**2, 3, 4, 5, 6** See end notes.

Note: Data are not readily available for missing years.

Source: BREE (2012b).



# CHAPTER 4

## Energy safety and emissions

**Table E 4.1a** Energy safety—number of hospital admissions (separations) due to exposure to electricity, radiation, extreme temperature/pressure—public hospitals

Financial year	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Australia
1998–99	286	186	494	162	202	53	2	0	1 385
1999–00	352	173	576	213	163	64	2	20	1 563
2000–01	352	175	507	257	121	54	7	18	1 491
2001–02	306	177	466	240	84	63	4	29	1 369
2002–03	323	257	373	236	92	69	3	21	1 374
2003–04	364	254	376	175	98	112	4	33	1 416
2004–05	349	212	302	167	99	95	7	12	1 243
2005–06	354	223	299	132	89	54	18	20	1 189
2006–07	357	242	272	128	85	61	10	14	1 169
2007–08	361	263	300	245	88	52	8	24	1 341
2008–09	340	223	251	381	85	49	11	15	1 355
2009–10	292	250	282	506	80	34	12	17	1 473
2010–11	290	262	326	325	55	27	5	21	1 311

Note: Data on state of hospitalisation should be interpreted with caution because of cross-border flows of patients.  
Source: AIHW (2012)

**Table E 4.1b** Energy safety—number of hospital admissions (separations) due to exposure to electricity, radiation, extreme temperature/pressure—private hospitals

Financial year	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Australia
1998–99	13	92	38	19	7	6	0	0	175
1999–00	18	31	67	18	18	6	0	0	158
2000–01	28	29	76	20	15	6	0	0	174
2001–02	24	20	127	8	np	np	0	0	185
2002–03	39	30	88	12	9	np	np	np	183
2003–04	59	12	85	10	7	np	np	np	180
2004–05	34	18	114	17	7	np	np	np	194
2005–06	40	19	128	19	9	np	np	np	219
2006–07	37	11	84	26	48	np	np	np	212
2007–08	35	9	68	38	59	np	np	np	214
2008–09	50	17	107	16	5	np	np	np	204
2009–10	32	17	92	30	2	np	np	np	178
2010–11	49	26	78	22	5	np	np	np	186

Note: Data on state of hospitalisation should be interpreted with caution because of cross-border flows of patients.

Note: Data are not readily available for missing years.

np: Not available for publication but included in the totals.

Source: AIHW (2012).

**Table E 4.2** Energy emissions—public electricity and heat production greenhouse gas (carbon dioxide equivalent) emissions by type of emissions

Year	Carbon dioxide	Methane	Nitrous oxide
	<i>gigagrams of CO<sub>2</sub> equivalent</i>		
1990	129 026.1	38.5	485.9
1991	131 205.7	38.1	498.6
1992	134 060.7	37.7	495.4
1993	134 968.1	39.3	505.2
1994	136 538.4	40.5	515.8
1995	142 129.9	44.5	538.3
1996	147 149.5	44.9	568.5
1997	152 135.2	44.4	598.7
1998	164 663.6	95.8	648.4
1999	170 888.9	103.4	664.3
2000	174 581.7	173.1	672.0
2001	181 752.5	171.2	684.3
2002	182 961.0	192.5	677.9
2003	184 822.1	144.1	680.4
2004	192 713.4	225.5	708.5
2005	193 937.1	283.8	717.6
2006	198 121.1	288.0	710.2
2007	199 934.0	343.4	693.8
2008	203 214.0	375.8	738.7
2009	208 780.2	382.2	751.6
2010	202 269.1	365.4	715.1
2011	197 655.8	410.2	684.2

Source: DCCEE (2013).

**Table E 4.3a** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—New South Wales

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990	45 691.8			158.8	309.5	4.4		358.6		
1991	45 784.0			141.5	326.3	3.0		357.0		
1992	46 216.5			134.2	345.1	0.4		344.7		
1993	47 605.9			118.5	372.6	0.4		362.1		
1994	47 127.6			130.9	398.1	0.4		335.6		
1995	48 067.2			128.5	425.8	0.4		291.9		
1996	48 732.2			123.4	430.5	0.4		523.9		
1997	50 421.8			121.6	517.9	0.5		813.1		
1998	50 777.3			118.7	612.2	0.5	277.4	546.7		
1999	52 344.5			116.8	623.1	0.5	311.4	821.5		
2000	53 554.3			130.3	644.3	0.5	382.6	756.8	1.0	10.0
2001	56 297.7			138.2	690.8	3.9	453.4	764.1	1.7	9.7
2002	56 398.4			151.5	697.2	3.9	477.2	788.6	0.0	9.7
2003	56 816.1			156.5	921.5	3.9	352.6	1 203.9	1.1	12.0
2004	57 807.9			156.3	1 243.5	14.2	361.8	1 035.1	1.4	12.7
2005	57 599.3			263.5	1 446.5	14.2	328.2	1 240.2	1.6	13.5
2006	59 379.8			250.5	1 357.9	13.9	304.0	1 311.9	1.4	16.9
2007	60 945.8			271.0	1 319.5	13.9	379.5	1 456.3	0.6	17.6
2008	63 455.3			247.6	1 353.1	14.7	277.4	1 438.0	0.2	18.9
2009	62 311.7			95.3	1 439.3	94.8	182.0	1 347.3	0.0	20.6
2010	58 449.8			91.6	1 700.3	63.9	293.6	2 160.6	2.0	21.8
2011	54 127.0			62.0	1 967.0	67.7	314.2	2 222.5	2.1	19.4

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.  
Source: DCCEE (2013).

**Table E 4.3b** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Victoria

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990		41 246.1	284.0	98.7	1.4			3 933.9		
1991		44 449.9	179.8	58.1	2.5			2 970.7		
1992		45 679.3	189.0	33.9	13.4			3 118.5		
1993		43 263.8	135.3	45.3	10.2			3 230.7		
1994		43 772.8	114.4	24.9	7.2			2 892.7		
1995		45 540.6	116.5	21.9	0.1			3 384.6		
1996		47 855.0	181.6	21.9	15.4			3 344.8		
1997		51 813.5	180.0	21.9	9.6			2 151.0		
1998		58 523.0	215.3	26.1				2 016.6		
1999		61 017.9	160.8	21.4	5.7			1 887.8		
2000		61 905.1	262.2	28.0	1.5			2 042.5		12.7
2001		61 183.9	261.8	40.2	19.0	3.1		2 348.4		12.5
2002		59 377.5	125.0	46.2	16.4	3.1		2 537.0		14.0
2003		60 207.1	167.8	29.1	16.7	3.1		3 124.8		11.3
2004		63 193.5	41.6	40.8	9.3	0.0		3 462.5		11.3
2005	12.5	61 877.1	41.9	41.3	27.5	0.7		3 775.2		9.5
2006		62 649.9	68.0	42.3	80.5	1.0		3 933.1		8.9
2007		61 550.4	61.5	40.3	52.1	0.9		4 296.8		8.7
2008		61 565.9	136.0	40.1	175.3	0.8		4 662.3		18.4
2009		63 753.1	132.9	67.9	64.5	0.8		4 852.1		18.3
2010		63 852.4	113.3	24.1	61.6	2.5		4 075.4		18.5
2011	2.6	63 347.8	115.9	46.1	52.3	0.7		4 151.4		22.6

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

**Table E 4.3c** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Queensland

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990	22 406.0			52.6	901.4	8.8		303.2		
1991	23 038.2			41.2	930.7	6.0		339.9		
1992	24 294.7			35.4	932.4	0.8		374.5		
1993	25 818.3			58.0	974.1	0.8		393.8		
1994	26 399.3			53.5	1 021.7	0.8		428.1		
1995	28 262.5			44.6	1 058.3	0.8		424.4		
1996	29 168.9			43.1	1 096.9	0.8		559.8		
1997	30 425.8			43.0	1 176.9	0.7		584.0		
1998	34 661.2			69.9	1 187.9	0.7		612.4		
1999	35 591.5			58.4	1 273.1	0.7		1 164.3		
2000	35 560.6			32.3	1 459.7	0.7		1 633.4		1.1
2001	38 736.6			158.6	1 321.9	3.9		2 033.8		1.1
2002	41 218.1			35.1	1 492.1	3.9		2 086.8		1.6
2003	41 289.6			35.1	2 831.6	3.2	228.5	1 851.1		1.0
2004	44 451.6			46.1	2 934.1	0.0	235.8	2 208.1		1.0
2005	45 208.8			39.6	3 362.9	0.0	754.5	2 448.0		1.4
2006	46 810.0			37.1	3 159.3	0.0	1 443.7	2 489.1		1.5
2007	45 237.4			45.4	2 987.1	0.0	1 737.7	4 203.5		1.2
2008	44 419.1			42.8	3 033.3		1 530.8	4 971.4		1.5
2009	45 195.0			72.9	3 206.8	0.3	1 632.1	5 736.8	0.1	4.6
2010	43 695.6			68.9	3 200.9	18.2	2 817.9	4 656.7	7.0	6.4
2011	40 233.7			43.9	3 571.4	0.4	3 001.7	6 805.6	2.1	8.0

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.  
Source: DCCEE (2013).

**Table E 4.3d** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—South Australia

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990	243.6	3 975.7		25.8	22.2	3.0		3 821.1		
1991	318.6	3 456.2		16.6	41.8	3.0		3 122.0		
1992	295.9	3 956.6		20.9	23.2	2.4		3 377.0		
1993	396.3	3 721.5		24.1	26.9	2.4		3 592.8		
1994	132.4	3 611.3		19.0	29.4	2.4		3 732.6		
1995	57.8	3 563.0		19.4	33.7	2.4		3 491.0		
1996	- 124.2	3 424.8		54.0	19.4			2 980.1		
1997	81.6	3 761.0		16.2	45.3			3 005.1		
1998	- 42.1	3 857.3		17.8	50.2			3 328.3		
1999	- 39.1	4 053.1		85.9	32.0	15.9		4 070.1		
2000	145.6	4 253.2		87.5	31.8	14.7		3 773.8		22.7
2001	119.9	4 617.1		90.1	- 20.8	13.8		3 959.4		22.2
2002	567.1	4 280.5		36.7	11.4			4 075.0		10.0
2003	1 067.7	4 118.4		24.8	107.2	0.0		5 112.1		10.3
2004	114.7	4 454.0		31.9	174.2	0.0		5 103.6		10.3
2005	132.4	5 099.9		33.1	96.2	0.0		5 114.7		4.8
2006	255.3	4 839.5		29.8	103.1	0.0		5 081.7		5.1
2007	256.2	5 595.3		48.6	94.7	0.0		5 236.9		4.7
2008	248.3	5 262.4		42.8	91.2	0.0		5 616.1		3.3
2009	178.8	5 333.9		30.2	95.6	0.0		5 379.0		4.4
2010	357.9	5 103.3		34.9	167.3	0.0		5 330.7		4.3
2011	322.1	4 268.6		31.0	117.5	0.0		5 227.9		4.7

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).



**Table E 4.3e** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Western Australia

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990	6 656.9			272.6	1 182.4			4 362.5		
1991	8 078.9			277.9	1 137.1			4 051.0		
1992	8 100.4			215.2	1 106.0			4 497.4		
1993	8 201.9			214.0	1 095.0			5 069.0		
1994	7 954.2			212.6	1 071.6			5 895.8		
1995	7 313.5			213.5	1 343.3			7 150.9		
1996	8 730.5			239.7	1 352.2			7 015.7		
1997	8 412.4			206.8	859.1			8 181.1		
1998	8 063.0			13.9	893.4			9 240.2		
1999	7 926.0			41.7	630.7			9 507.2		
2000	8 708.3			21.9	494.4			9 651.6		2.8
2001	8 490.7			25.1	429.3	2.2		10 779.6		2.7
2002	8 718.9			21.3	433.6	2.2		10 825.5		3.6
2003	9 893.3			13.9	971.9	2.9		11 324.5		5.9
2004	8 993.7			23.1	1 222.5	0.6		12 427.6		5.8
2005	9 170.3			77.0	1 240.5	0.7		13 524.2		2.9
2006	9 209.3			178.8	1 200.3	0.7		14 258.0		2.9
2007	8 429.9			171.9	1 247.1	0.8		15 360.2		2.7
2008	7 652.7			166.2	1 790.1	1.3		15 294.3		4.3
2009	9 261.3			16.8	1 231.4	3.8		18 024.8		8.4
2010	8 489.2			12.4	1 103.2	0.9		19 122.3		7.1
2011	9 422.1			12.3	1 226.1	0.6		21 267.0		6.8

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.  
Source: DCCEE (2013).

**Table E 4.3f** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Tasmania

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990					20.0	0.0				
1991					10.1	0.0				
1992					10.2	0.0				
1993					10.8	0.0				
1994					11.3	0.0				
1995					13.2	0.0				
1996					14.4	0.0				
1997					13.8	0.0				
1998					14.6	0.0				
1999					10.9	0.0				
2000					8.8	0.0				
2001					45.6	0.0				
2002					12.2	0.0				
2003					-85.0			195.3		
2004					9.4			328.9		
2005					13.1			483.2		
2006					13.9			448.8		
2007					13.9			504.3		
2008					13.9			645.2		1.4
2009					10.7	6.0		415.4		2.4
2010					11.1			541.1		1.7
2011					14.3	1.2		681.6		1.8

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

**Table E 4.3g** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Northern Territory

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
<i>gigagrams of CO<sub>2</sub> equivalent</i>										
1990					264.2				632.4	
1991					250.8				667.8	
1992					215.6				694.5	
1993					200.3				701.3	
1994					204.5				701.9	
1995					211.6				764.2	
1996					226.9				882.0	
1997					242.2				914.5	
1998					256.7				947.2	
1999					277.1				1 022.7	
2000					163.3				1 121.4	
2001					93.4				1 131.8	
2002					91.2				1 190.1	
2003					410.0				726.2	
2004					662.3				880.0	
2005					730.0				1 321.7	
2006					1 005.1				821.3	
2007					588.7				889.9	
2008					983.4				843.1	0.5
2009					861.7				1 072.3	0.6
2010					668.2				1 377.1	0.6
2011					548.8		0.3		1 338.3	0.6

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.  
Source: DCCCE (2013).

**Table E 4.3h** Energy emissions—stationary energy, energy industries greenhouse gas (carbon dioxide equivalent) emissions—Australian external territories

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
<i>gigagrams of CO<sub>2</sub> equivalent</i>										
1990						3.3				
1991						3.5				
1992						3.3				
1993						5.0				
1994						8.3				
1995						4.7				
1996						8.8				
1997						5.5				
1998						2.1				
1999						5.8				
2000						12.6				
2001						7.1				
2002						7.6				
2003						6.5				
2004						7.4				
2005						7.2				
2006						7.1				
2007						8.4				
2008						26.8				
2009						20.2				
2010						18.1				
2011						36.2				

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

**Table E 4.4** Energy emissions—Public electricity and heat production greenhouse gas (carbon dioxide equivalent) emissions, by type of fuel—Australia

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
	<i>gigagrams of CO<sub>2</sub> equivalent</i>									
1990	72 638.3	44 987.7	282.7	1 036.5	1 841.7			8 239.2		
1991	74 238.2	47 661.5	179.0	1 160.4	1 781.1			6 185.6		
1992	75 828.0	49 219.3	188.1	374.7	1 689.6			6 761.0		
1993	79 007.3	46 765.6	134.7	387.8	1 694.3			6 978.5		
1994	79 704.9	47 136.2	113.9	365.2	1 735.3			7 482.8		
1995	82 225.3	48 862.0	116.0	348.1	2 017.9			8 560.7		
1996	85 866.6	50 900.5	180.8	402.8	2 051.6			7 747.2		
1997	87 248.2	55 178.4	179.2	328.5	1 613.6			7 587.4		
1998	92 075.0	62 018.4	214.3	164.6	1 578.8		252.2	8 360.4		
1999	94 221.8	64 759.8	160.0	245.1	1 420.7		283.3	9 798.2		
2000	96 892.7	65 798.4	261.0	216.3	1 294.0		348.1	9 771.4		
2001	102 798.9	65 428.2	260.5	344.9	993.3		413.0	11 513.7		
2002	105 960.2	63 230.6	124.4	205.7	1 137.2		436.4	11 866.6		
2003	107 140.7	63 957.7	167.0	264.7	1 679.6		547.4	11 065.0		
2004	110 186.1	67 262.4	41.5	204.5	2 222.8		564.4	12 231.7		
2005	110 756.5	66 591.6	41.8	268.4	2 095.2		1 050.4	13 132.6		
2006	113 792.0	67 122.7	67.7	353.3	2 327.7		1 714.9	12 741.7		
2007	112 992.9	66 797.4	61.3	373.0	2 202.7		2 067.8	15 438.1		
2008	113 759.2	66 431.9	135.4	391.7	3 265.2		1 768.0	17 461.8		
2009	115 591.5	68 684.5	132.3	111.8	2 393.9		1 775.9	19 845.8		
2010	108 633.8	68 556.4	112.8	100.1	2 142.9		3 042.6	19 482.8		
2011	102 250.6	67 210.9	115.3	96.3	2 218.1		3 265.3	22 345.2		

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

**Table E 4.5** Energy emissions—Natural gas transmission greenhouse gas (carbon dioxide equivalent) emissions, by type of fuel—Australia

Calendar year	Solid fuels			Liquid fuels			Gaseous fuels		Renewable	
	Black coal	Brown coal	Brown coal briquettes	Fuel oil	Auto-motive diesel oil	Liquified petroleum gas (LPG)	Coal gas	Natural gas	Wood and wood waste	Gas biomass
<i>gigagrams of CO<sub>2</sub> equivalent</i>										
1990								260.32		
1991								224.59		
1992								255.22		
1993								296.05		
1994								352.2		
1995								393.03		
1996								413.45		
1997								440.69		
1998								440.62		
1999								485.89		
2000								532.01		
2001								649.67		
2002								721.28		
2003								782.67		
2004								736.63		
2005								803.13		
2006								823.59		
2007								869.63		
2008								879.86		
2009								931.02		
2010								941.25		
2011								971.01		

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

## PART C: Communication

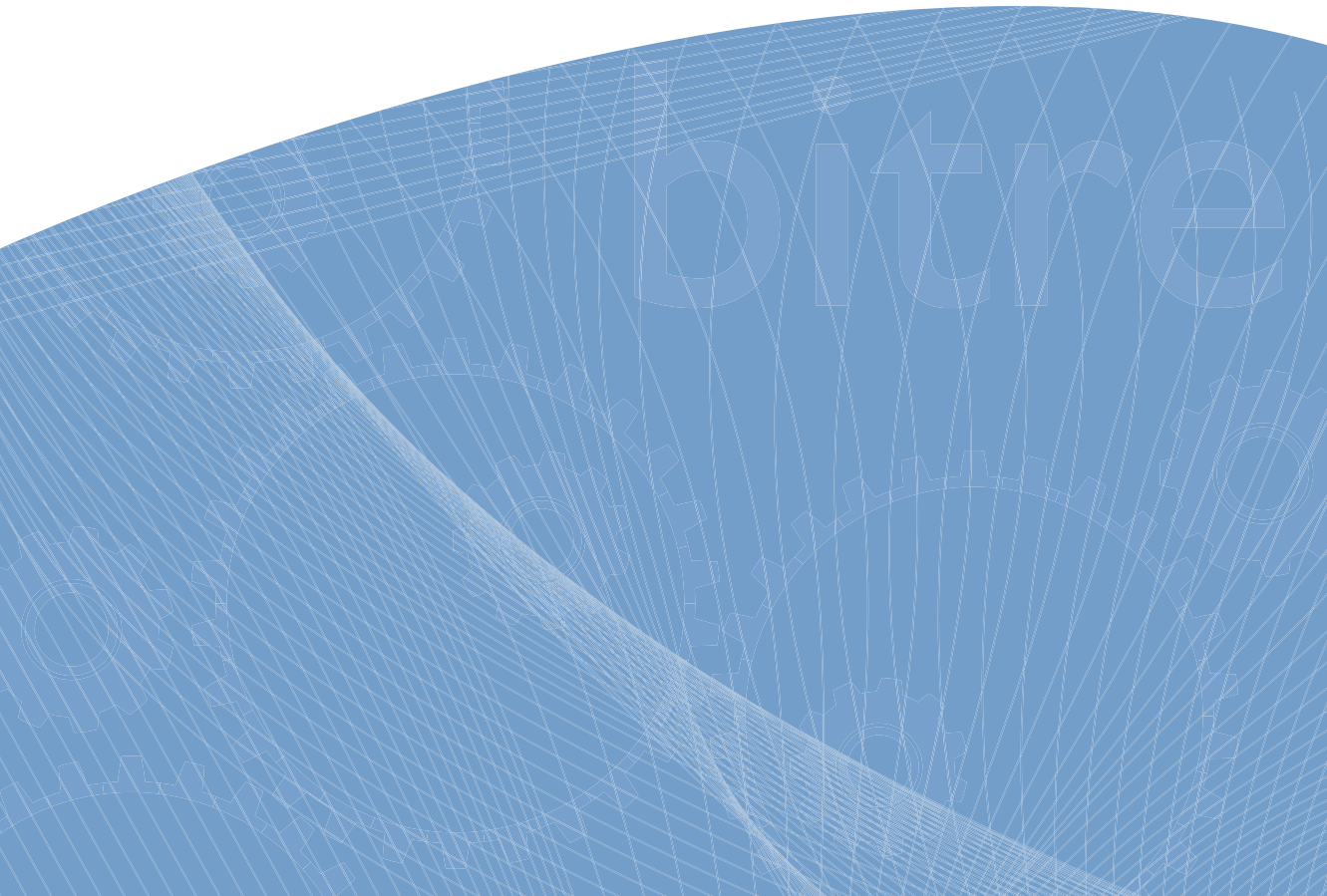
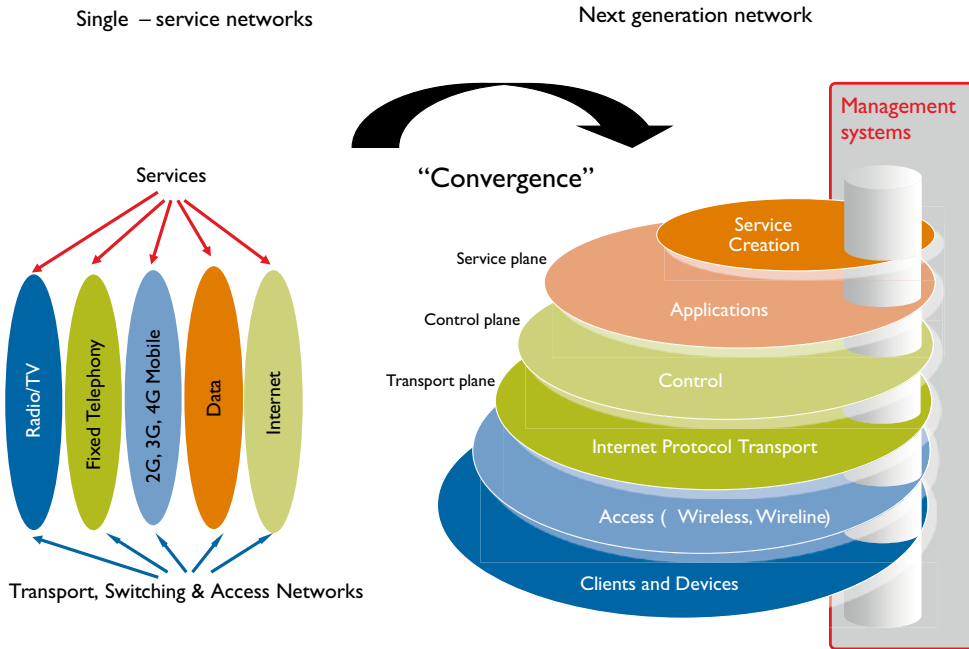


Figure C I Telecommunications networks: traditional and next generation



Source: Australian Communications and Media Authority.



## PART C

# Communication

The study of Australian economic infrastructure focuses on key networks that enable economic activity. Telecommunications networks are a vital part of Australian infrastructure, with communications networks now in a period of significant transition.

Traditional communications architecture was based on vertically integrated separate networks that delivered separate services over a dedicated network (see Figure C I, facing page). Modern communications networks are moving to the use of a more horizontal, next generation network architecture organised into layers of common functions, which allows the delivery of multiple services to a single user device delivered over a common internet protocol based platform.

The upper layers of the diagram (control, applications and service creation) are associated with the presentation of software-based user-focussed features and services, while the lower layers in the diagram are associated with the more physical elements of the communications process. Management systems provide overall management of network interaction between layers. The horizontal architecture allows for competition amongst industry participants operating within a layer.

The phenomenon of communications 'convergence' is not just occurring at the network, service and device level, but also among the previously distinct industries of telecommunications, broadcasting, radio communications and the Internet.

Readers should take these rapid developments in communications technology into account when analysing time series statistics for communications networks.

Where possible, statistics in Part C: Communication of the Australian Infrastructure Statistics Yearbook focus on physical infrastructure networks and their usage, rather than the broader communications industry. For Chapter 2, these distinctions are not possible as data are not available with sufficient detail to separately identify physical infrastructure networks.

Traditional measures of infrastructure construction activity only provide a partial picture of the capacity and usage of communications infrastructure as they only measure investment in the physical infrastructure networks. Information technology upgrades that provide additional functionality or new services on existing networks, along with network upgrades that extend geographic coverage, have been major drivers of increased infrastructure capacity in the communications industry. Chapter 2 of Part C: Communication provides estimates of investment in information technology by the information media and telecommunications industry.

Major drivers of communications infrastructure activity over recent years have been:

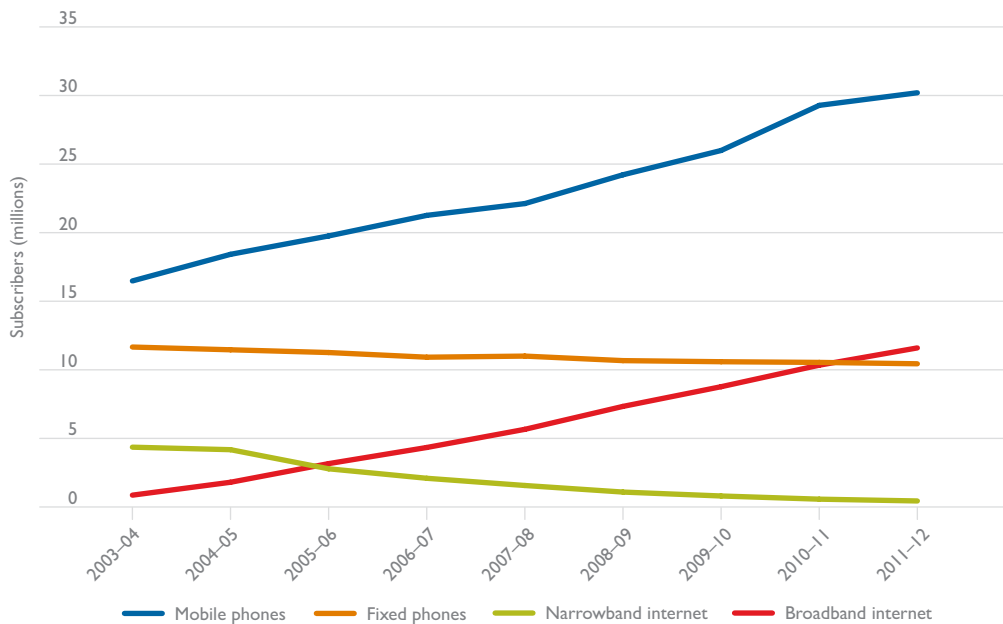
- increasing international bandwidth capacity
- growth in domestic backhaul transmission capacity (infrastructure connecting access nodes to the core network)

- a broadening range of internet access technologies available, including digital subscriber line (DSL) and wireless broadband network deployments (with increasing intensity of use and reliance on radio communications spectrum allocations)
- mobile network extensions for 3G mobile services and rollout of 4G networks and
- the convergence of networks, devices and service

The deployment of the National Broadband Network (NBN) represents a significant investment in a fibre to the node network. This investment will be reflected in the statistics over the coming years of the NBN deployment and beyond.

An illustration of the dynamism of the communications sector, Figure C2 demonstrates the take-up of the newer technologies of mobile phones and broadband internet over the last eight years, and the decline of the number of subscribers to the older technologies of ‘narrowband’ internet and fixed phones.

**Figure C 2 Communications subscribers—number of subscribers, by communications medium**





**Table C 1.2a** Flow of new infrastructure—capital investment by selected communications industries—gross fixed capital formation<sup>e</sup>

Financial year	Broadcasting (except internet)	Internet publishing and broadcasting	Tele-communications services	Internet service providers, web search portals and data processing services	Publishing, motion picture and sound recording, and library and other information services <sup>d</sup>	TOTAL information media and telecommunications industry
<i>\$ million</i>						
2007–08	455	24	5 804	<sup>b</sup> 160	773	7 215
2008–09	464	<sup>b</sup> 19	np	np	872	8 424
2009–10	429	<sup>b</sup> 27	6 696	<sup>b</sup> 178	611	7 942
2010–11	422	<sup>c</sup> 53	7 097	<sup>b</sup> 215	658	8 445

<sup>b</sup> Estimate has a relative standard error between 10% and 25%.

<sup>c</sup> Estimate has a relative standard error of 25% to 50%.

<sup>d</sup> This series groups several industries into the one measure. Relative standard errors were calculated for component series, but are not available for the new measure.

<sup>e</sup> Gross fixed capital expenditure represents expenditure on fixed assets that excludes repair and maintenance expenses, but includes all costs associated with own-account capital formation. Fixed assets include all produced assets (physical assets, cultivated assets and intellectual property products) that are used in processes of production for more than one year. Non-produced assets such as spectrum assets are not included in gross fixed capital formation.

Source: (ABS 2012a).

**Table C 1.2b** Flow of new infrastructure—capital investment by selected communications industries—net capital expenditure<sup>f</sup>

Financial year	Broadcasting (except internet)	Internet publishing and broadcasting	Tele-communications services	Internet service providers, web search portals and data processing services	Publishing, motion picture and sound recording, and library and other information services <sup>d</sup>	TOTAL information media and telecommunications industry
<i>\$ million</i>						
2007–08	1 312	26	np	585	549	8 637
2008–09	475	np	np	np	760	8 591
2009–10	449	np	6 728	233	745	8 198
2010–11	377	- 119	7 280	320	654	8 513

<sup>d</sup> This series groups several industries into the one measure. Relative standard errors were calculated for component series, but are not available for the new measure.

<sup>f</sup> Net capital expenditure represents expenditure on all forms of capital, net of depreciation of fixed capital. This measure of capital expenditure includes non-produced assets such as spectrum assets.

Source: (ABS 2012a).

**Table C 1.2c** Flow of new infrastructure—capital investment by selected communications industries—depreciation and amortisation

Financial year	Broadcasting (except internet)	Internet publishing and broadcasting	Tele-communications services	Internet service providers, web search portals and data processing services	Publishing, motion picture and sound recording, and library and other information services <sup>d</sup>	TOTAL information media and telecommunications industry
<i>\$ million</i>						
2007–08	769	<sup>b</sup> 33	5 833	<sup>b</sup> 222	974	7 832
2008–09	821	10	6 107	<sup>c</sup> 154	740	7 833
2009–10	749	22	6 306	179	783	8 039
2010–11	793	32	6 552	<sup>b</sup> 206	834	np

<sup>b</sup> Estimate has a relative standard error between 10% and 25%.

<sup>c</sup> Estimate has a relative standard error of 25% to 50%.

<sup>d</sup> This series groups several industries into the one measure. Relative standard errors were calculated for component series, but are not available for the new measure.

Source: (ABS 2012a).

## CHAPTER 2

# Investment in information technology

**Table C 2.1** Investment in information technology—information media and telecommunications industry<sup>g</sup> investment in information technology gross fixed capital formation<sup>l</sup>, chain volume measures

Financial year	Information media and telecommunications industry investment in IT				Total Australian investment in information technology	Information media and telecommunications industry percentage of total
	Computers and peripherals	Electrical and electronic equipment	Intellectual property products—Computer software	TOTAL investment in IT by the information media and telecommunications industry		
	\$ million					per cent
1971–72	0	47	1	48	517	9.28
1972–73	0	70	1	71	559	12.70
1973–74	0	77	1	78	584	13.36
1974–75	0	74	2	76	580	13.10
1975–76	0	47	2	49	618	7.93
1976–77	0	57	2	59	613	9.62
1977–78	0	49	2	51	648	7.87
1978–79	0	53	4	57	726	7.85
1979–80	0	55	5	60	730	8.22
1980–81	1	66	7	74	889	8.32
1981–82	1	74	9	84	1 015	8.28
1982–83	1	78	14	93	987	9.42
1983–84	1	134	17	152	1 432	10.61
1984–85	2	170	20	192	1 616	11.88
1985–86	3	269	29	301	1 881	16.00
1986–87	2	218	29	249	2 111	11.80
1987–88	3	229	58	290	2 280	12.72
1988–89	4	284	53	341	2 506	13.61
1989–90	5	433	75	513	2 938	17.46
1990–91	7	383	85	475	2 789	17.03
1991–92	8	440	108	556	3 145	17.68
1992–93	14	646	185	845	3 949	21.40
1993–94	7	391	222	620	4 140	14.98
1994–95	18	527	213	758	4 588	16.52
1995–96	26	647	300	973	5 251	18.53
1996–97	37	769	293	1 099	6 297	17.45
1997–98	38	574	348	960	7 373	13.02
1998–99	57	664	397	1 118	8 092	13.82
1999–00	101	994	450	1 545	10 141	15.24
2000–01	115	1 378	604	2 097	12 138	17.28
2001–02	107	1 047	638	1 792	12 211	14.68
2002–03	112	1 066	618	1 796	14 993	11.98
2003–04	120	1 003	665	1 788	17 189	10.40
2004–05	178	1 214	664	2 056	18 813	10.93
2005–06	183	1 201	787	2 171	21 940	9.90
2006–07	249	1 663	601	2 513	24 105	10.43
2007–08	335	1 876	584	2 795	29 770	9.39
2008–09	394	1 970	604	2 968	30 868	9.62
2009–10	469	2 203	694	3 366	33 591	10.02
2010–11	582	2 396	812	3 790	37 592	10.08
2011–12	562	2 318	809	3 689	42 393	8.70

<sup>l</sup> See end notes.

<sup>g</sup> Investment in information technology statistics are not available with the same level of industry detail as Table C 1.2.

Source: ABS (2012c).

**Table C 2.2** Investment in information technology—information media and telecommunications industry<sup>g</sup> consumption of information technology fixed capital<sup>2</sup>, chain volume measures

Financial year	Information media and telecommunications industry investment in IT				Total Australian investment in information technology	Information media and telecommunications industry percentage of total
	Computers and peripherals	Electrical and electronic equipment	Intellectual property products—Computer software	TOTAL investment in IT by the information media and telecommunications industry		
	\$ million					per cent
1971–72	0	42	0	42	336	12.50
1972–73	0	43	0	43	355	12.11
1973–74	0	46	0	46	375	12.27
1974–75	0	49	1	50	395	12.66
1975–76	0	50	1	51	413	12.35
1976–77	0	50	1	51	434	11.75
1977–78	0	50	1	51	454	11.23
1978–79	0	50	2	52	477	10.90
1979–80	0	50	2	52	503	10.34
1980–81	0	51	3	54	536	10.07
1981–82	0	52	4	56	580	9.66
1982–83	0	54	5	59	624	9.46
1983–84	0	59	7	66	679	9.72
1984–85	1	68	9	78	760	10.26
1985–86	1	84	12	97	863	11.24
1986–87	1	100	15	116	986	11.76
1987–88	2	113	20	135	1 129	11.96
1988–89	2	129	26	157	1 291	12.16
1989–90	3	153	35	191	1 511	12.64
1990–91	3	180	48	231	1 775	13.01
1991–92	5	205	62	272	2 049	13.27
1992–93	6	241	85	332	2 380	13.95
1993–94	7	272	115	394	2 749	14.33
1994–95	9	293	145	447	3 124	14.31
1995–96	12	324	177	513	3 506	14.63
1996–97	16	365	208	589	3 934	14.97
1997–98	22	399	238	659	4 448	14.82
1998–99	29	425	271	725	5 033	14.40
1999–00	41	472	306	819	5 752	14.24
2000–01	59	555	350	964	6 668	14.46
2001–02	76	635	403	1 114	7 652	14.56
2002–03	88	692	455	1 235	8 754	14.11
2003–04	99	741	507	1 347	10 121	13.31
2004–05	115	793	559	1 467	11 683	12.56
2005–06	134	852	611	1 597	13 459	11.87
2006–07	159	930	648	1 737	15 433	11.26
2007–08	198	1 039	656	1 893	17 812	10.63
2008–09	249	1 154	654	2 057	20 437	10.07
2009–10	306	1 273	652	2 231	22 979	9.71
2010–11	374	1 404	664	2 442	25 617	9.53
2011–12	440	1 528	685	2 653	28 522	9.30

<sup>g</sup> Investment in information technology statistics are not available with the same level of industry detail as Table C 1.2

<sup>2</sup> See end notes.

Source: ABS (2012c).

**Table C 2.3** Stock of information technology—information media and telecommunications industry<sup>g</sup> net capital stock<sup>3</sup> of information technology assets, chain volume measures

Financial year	Information media and telecommunications industry investment in IT				Total Australian investment in information technology	Information media and telecommunications industry percentage of total
	Computers and peripherals	Electrical and electronic equipment	Intellectual property products—Computer software	TOTAL investment in IT by the information media and telecommunications industry		
	\$ million					per cent
1971–72	0	291	2	293	3 140	9.33
1972–73	0	312	2	314	3 297	9.52
1973–74	0	336	3	339	3 459	9.80
1974–75	0	355	4	359	3 598	9.98
1975–76	0	348	6	354	3 756	9.42
1976–77	0	350	7	357	3 894	9.17
1977–78	0	345	8	353	4 045	8.73
1978–79	0	344	12	356	4 245	8.39
1979–80	1	344	15	360	4 422	8.14
1980–81	1	354	20	375	4 720	7.94
1981–82	1	369	27	397	5 095	7.79
1982–83	2	386	38	426	5 402	7.89
1983–84	2	449	51	502	6 072	8.27
1984–85	3	537	66	606	6 844	8.85
1985–86	4	699	88	791	7 772	10.18
1986–87	5	798	105	908	8 817	10.30
1987–88	6	893	152	1 051	9 893	10.62
1988–89	7	1 024	186	1 217	11 017	11.05
1989–90	9	1 266	237	1 512	12 361	12.23
1990–91	12	1 436	286	1 734	13 321	13.02
1991–92	15	1 633	346	1 994	14 363	13.88
1992–93	21	1 981	472	2 474	15 868	15.59
1993–94	20	2 067	610	2 697	17 197	15.68
1994–95	28	2 256	706	2 990	18 585	16.09
1995–96	40	2 521	833	3 394	20 075	16.91
1996–97	57	2 864	920	3 841	22 155	17.34
1997–98	70	3 000	1 032	4 102	24 767	16.56
1998–99	95	3 207	1 163	4 465	27 586	16.19
1999–00	150	3 694	1 308	5 152	31 626	16.29
2000–01	204	4 502	1 565	6 271	36 842	17.02
2001–02	234	4 913	1 797	6 944	41 174	16.87
2002–03	256	5 289	1 970	7 515	47 286	15.89
2003–04	276	5 557	2 150	7 983	54 375	14.68
2004–05	339	5 997	2 281	8 617	61 642	13.98
2005–06	393	6 382	2 468	9 243	70 631	13.09
2006–07	487	7 143	2 421	10 051	79 569	12.63
2007–08	632	8 023	2 343	10 998	91 860	11.97
2008–09	782	8 859	2 291	11 932	102 547	11.64
2009–10	943	9 779	2 342	13 064	113 302	11.53
2010–11	1 151	10 772	2 492	14 415	125 309	11.50
2011–12	1 273	11 561	2 617	15 451	139 180	11.10

<sup>g</sup> Investment in information technology statistics are not available with the same level of industry detail as Table C 1.2.

<sup>3</sup> See end notes.

Source: ABS (2012c).





# CHAPTER 3

## Subscribers and providers

**Table C 3.1** Communications subscribers—number of services, by communications medium

End of financial year	Number of payphones	Terrestrial mobile	Fixed line	Internet		Total
				Narrowband	Broadband	
<i>Number of subscribers (millions)</i>						
2003–04	64 803	16.48	11.66	<sup>k</sup> 4.36	<sup>k</sup> 0.86	<sup>k</sup> 5.22
2004–05	61 735	18.42	11.46	<sup>k</sup> 4.18	<sup>k</sup> 1.80	<sup>k</sup> 5.98
2005–06 <sup>h</sup>	58 230	19.76	11.26	2.78	3.16	5.95
2006–07	49 862	21.26	10.92	<sup>k</sup> 2.09	<sup>k</sup> 4.34	<sup>k</sup> 6.43
2007–08	45 114	22.12	11.00	1.57	5.66	7.23
2008–09 <sup>i</sup>	39 328	24.22	10.67	1.09	7.33	8.42
2009–10 <sup>j</sup>	35 012	25.99	10.59	0.80	8.77	9.57
2010–11	33 201	29.28	10.54	0.57	10.34	10.91
2011–12	31 032	30.20	10.44	0.44	11.60	12.04

<sup>h</sup> From 2005–06 to 2007–08 internet subscriptions reflect data from ISPs with more than 10 000 active subscribers.

<sup>i</sup> Internet subscriptions for 2008–09 and 2010–11 reflect data from ISPs with more than 1000 active subscribers.

<sup>j</sup> Internet subscriptions for 2009–10 and years prior to 2005–06 reflect data from all ISPs.

<sup>k</sup> Internet subscriptions for the end of the March quarter.

Source: ABS (2013c), ACMA (2012).

**Table C 3.2** Communications subscribers—number of terrestrial mobile services, by technology

End of financial year	GSM <sup>4</sup>	3G <sup>5</sup>	Total
	<i>Number of subscribers (millions)</i>		
2003–04			16.48
2004–05			18.42
2005–06			19.76
2006–07		4.56	21.26
2007–08	13.26	8.55	22.12
2008–09	11.16	12.28	24.22
2009–10			25.99
2010–11			29.28
2011–12			30.20

<sup>4, 5</sup> See end notes.

Source: ACMA (2012).

**Table C 3.3a** Communications subscribers—number of internet subscribers, by download speed—business and government subscribers

	Less than 256kbps	Broadband				Total broadband	Total business and government subscribers
		512kbps to less than 1.5Mbps	1.5Mbps to less than 8Mbps	8Mbps to less than 24Mbps	24Mbps or greater		
<i>Number of subscribers ('000)</i>							
Census of all ISPs							
September 2000							432
September 2001							559
September 2002							650
September 2003	528	143	np	np	np	168	696
September 2004	535	224	np	np	np	311	846
March 2005	447	281	np	np	np	398	845
September 2006	279	394	np	np	np	547	826
December 2007	268	362	224	95	17	697	965
December 2008	234	329	538	175	45	1 087	1 321
ISPs with more than 1000 active subscribers							
December 2009	188	273	911	219	37	1 440	1 629
December 2010	189	175	1 200	697	73	2 144	2 333
December 2011	96	60	1 818	388	292	2 558	2 654
December 2012	73	24	np	1 047	np	2 836	2 910

Note: Data are not readily available for missing years.

np not available for publication but included in the totals.

Source: ABS (2013c).

**Table C 3.3b** Communications subscribers—number of internet subscribers, by download speed—household subscribers

	Less than 256kbps	Broadband				Total broadband	Total household subscribers
		512kbps to less than 1.5Mbps	1.5Mbps to less than 8Mbps	8Mbps to less than 24Mbps	24Mbps or greater		
<i>Number of subscribers ('000)</i>							
Census of all ISPs							
September 2000							3 417
September 2001							3 731
September 2002							3 904
September 2003	4 027	346	np	np	np	488	4 516
September 2004	3 916	612	np	np	np	979	4 895
March 2005	3 746	906	np	np	np	1 388	5 135
September 2006	2 478	2 374	np	np	np	3 353	5 831
December 2007	1 619	2 340	821	1 198	163	4 522	6 141
December 2008	1 084	2 311	1 474	1 478	329	5 591	6 675
ISPs with more than 1000 active subscribers							
December 2009	717	2 109	2 277	1 754	466	6 605	7 322
December 2010	518	1 066	2 867	2 833	828	7 595	8 112
December 2011	379	748	3 297	3 597	922	8 563	8 942
December 2012	215	585	np	4 358	np	9 037	9 251

Note: Data are not readily available for missing years.

np not available for publication but included in the totals.

Source: ABS (2013c).

**Table C 3.3c** Communications subscribers—number of internet subscribers, by download speed—total all subscribers

	Less than 256kbps	512kbps to less than 1.5Mbps	1.5Mbps to less than 8Mbps	Broadband		Total broadband	Total all subscribers
				8Mbps to less than 24Mbps	24Mbps or greater		
<i>Number of subscribers ('000)</i>							
Census of all ISPs							
September 2000							3 849
September 2001							4 289
September 2002							4 555
September 2003	4 554	489	np	np	np	656	5 211
September 2004	4 451	836	np	np	np	1 290	5 741
March 2005	4 193	1 187	np	np	np	1 787	5 980
September 2006	2 757	2 768	np	np	np	3 900	6 657
December 2007	1 887	2 702	1 045	1 293	180	5 218	7 105
December 2008	1 319	2 640	2 012	1 653	373	6 678	7 996
ISPs with more than 1 000 active subscribers							
December 2009	905	2 381	3 188	1 973	503	8 046	8 951
December 2010	707	1 241	4 067	3 530	901	9 739	10 446
December 2011	475	808	5 115	3 985	1 213	11 121	11 596
December 2012	288	609	4 213	5 406	1 645	11 873	12 161

Note: Data are not readily available for missing years.

np not available for publication but included in the totals.

Source: ABS (2013c).

**Table C 3.4** Communications subscribers—number of internet subscribers, by access connection

	Dial-up			Non dial-up					Total all subscribers <sup>1</sup>	
	DSL	Cable and fibre	Satellite	Wireless (excluding mobile handset connections)			Other	Combined connections		
				Fixed	Mobile	Total wireless (excluding mobile handset connections)				
<i>Number of subscribers ('000)</i>										
Census of all ISPs										
September 2000	3 745	6	np	np				np		3 849
September 2001	4 088	30	np	np				np		4 273
September 2002	4 204	127	np	np				np		4 555
September 2003	4 522	372	np	np	np	3	8	np		5 211
September 2004	4 441	822	np	np	np	9	15	np		5 741
March 2005	4 177	1 256	np	np	np	7	38	np		5 980
September 2006	2 749	2 995	np	np	np	np	186	np	727	6 657
December 2007	1 887	3 815	np	np	np	np	481	np	922	7 105
December 2008	1 311	4 208	916	80	np	1 369	1 462	19	na	7 996
ISPs with more than 1 000 active subscribers										
December 2009	891	4 178	np	107	22	2 838	2 860	5	na	8 951
December 2010	707	4 458	np	np	24	4 230	4 254	np	na	10 446
December 2011	473	4 553	937	100	35	5 491	5 526	np	na	11 596
December 2012	282	4 727	1 009	92	49	5 995	6 044	np	na	12 161

<sup>1</sup> Total subscribers differs to total in Table C3.3c as source data have been revised for C3.3, but not for C3.4.

np not available for publication but included in the totals.

Note: Data are not readily available for missing years.

Source: ABS (2013c).

**Table C 3.5** Communications providers—number of internet service providers (ISP), by size

	Very small	Small	Medium	Large	Very large	Total
	1 to 100 subscribers	101 to 1 000 subscribers	1 001 to 10 000 subscribers	10 001 to 100 000 subscribers	100 000 + subscribers	
<i>Number of ISPs</i>						
September 2000	132	377	173	28	8	718
September 2001	112	299	155	30	6	602
September 2002	102	254	172	29	6	563
September 2003	153	316	163	27	8	667
September 2004	171	323	157	26	10	687
March 2005	180	312	162	25	10	689
September 2006	124	199	112	22	10	467
December 2007	108	179	96	28	10	421
December 2008			88	27	11	126
December 2009			66	27	10	103
December 2010			71	21	12	104
December 2011			58	23	10	91
December 2012			46	22	8	76

Note: Data are not readily available for missing years.

Source: ABS (2013c).

# CHAPTER 4

## Price and activity

**Table C 4.1** Communications price—consumer price index, telecommunication services, index numbers by capital city

Average over financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Australia
	<i>base of each index: 2011–12 = 100</i>								
1980–81	59.1	60.5	57.1	59.8	58.7	59.9	66.7	60.5	59.5
1981–82	62.7	64.2	60.5	63.4	62.2	63.6	70.6	64.1	63.1
1982–83	69.1	70.7	66.7	69.9	68.7	69.9	77.8	70.8	69.5
1993–84	74.9	76.6	71.9	75.7	74.4	75.5	84.6	76.8	75.3
1994–85	78.0	79.9	74.6	78.9	77.5	78.6	88.1	80.0	78.4
1995–86	81.8	83.5	78.0	82.4	81.4	82.2	91.1	83.6	82.0
1986–87	84.0	85.0	81.0	83.9	84.2	84.3	93.7	85.6	84.1
1987–88	90.9	91.9	88.1	90.6	91.1	91.1	101.1	92.7	91.0
1988–89	92.5	93.3	89.1	91.9	93.1	92.0	101.3	94.1	92.4
1989–90	90.9	91.2	87.4	89.9	91.9	89.5	98.1	92.2	90.7
1990–91	93.3	93.6	89.2	92.1	94.2	91.4	100.1	94.7	93.0
1991–92	97.5	97.9	92.9	96.3	98.5	95.0	104.1	99.1	97.1
1992–93	96.9	97.4	92.1	95.8	98.1	93.7	103.3	98.6	96.5
1993–94	96.1	96.6	91.5	95.1	97.5	92.7	102.3	97.7	95.8
1994–95	97.5	97.7	93.7	96.3	98.9	94.5	104.3	99.1	97.1
1995–96	97.1	97.2	93.8	95.9	98.8	94.3	104.2	98.7	96.8
1996–97	96.4	96.4	93.1	94.3	98.1	93.2	103.4	97.8	96.0
1997–98	96.5	96.4	93.4	93.9	97.9	93.3	102.7	97.7	96.0
1998–99	92.6	92.9	90.8	90.4	93.3	90.7	95.1	93.5	92.3
1999–00	87.5	87.5	86.5	85.8	86.8	86.6	87.5	87.9	87.1
2000–01	93.7	93.9	92.9	92.1	92.5	93.1	93.4	94.2	93.4
2001–02	93.8	94.4	93.4	93.1	93.2	93.3	93.6	94.0	93.8
2002–03	96.6	97.2	96.3	96.5	96.2	96.3	96.2	96.8	96.7
2003–04	97.8	98.3	97.5	97.7	97.4	97.5	97.4	98.0	97.8
2004–05	98.7	99.2	98.5	98.7	98.3	98.4	98.2	98.8	98.8
2005–06	97.1	97.7	96.9	97.2	96.7	96.9	96.7	97.3	97.2
2006–07	98.3	98.7	98.2	98.3	98.0	98.0	97.9	98.4	98.3
2007–08	98.6	98.9	98.5	98.6	98.2	98.3	98.1	98.7	98.6
2008–09	99.1	99.4	99.1	99.2	98.8	98.9	98.7	99.2	99.2
2009–10	99.4	99.7	99.4	99.4	99.1	99.3	99.1	99.5	99.4
2010–11	99.0	99.1	99.0	99.0	98.9	99.0	99.0	99.0	99.0
2011–12	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2012–13	101.6	101.7	101.7	101.7	101.5	101.6	101.6	101.6	100.3

Source: ABS (2012–13f).

**Table C 4.2** Communications prices—representative monthly broadband subscription prices

	DSL <i>m</i>			Cable <i>n</i>		
	Speed <i>kbps m</i>	Bit cap <i>Megabits (Mb)</i>	Price \$	Speed <i>kbps o</i>	Bit cap <i>Megabits (Mb)</i>	Price \$
2005	1 536	10 000	129.40	2 880	12 000	74.95
2006	1 536	10 000	109.95	9 900	20 000	79.95
2007	1 536	12 000	69.95	9 900	30 000	109.99
2008	1 536	12 000	69.95	20 000	30 000	109.99

*m* Representative Digital Subscriber Line (DSL) provider chosen by OECD was Bigpond.

*n* Representative internet Cable service provider chosen by OECD was Optus.

*o* Kilobits per second. A kilobit is a data unit of 1024 bits.

Source: OECD (2010).

**Table C 4.3** Communication activity—internet domain names registered, excluding 'gov.au' and community geographic domain names

End of financial year	com.au	net.au	org.au <i>number</i>	asn.au	id.au	Total (.au)
2001–02	255 408	12 794	9 203	2 832	0	280 237
2002–03	308 423	20 149	13 279	3 198	2 527	347 576
2003–04	382 994	34 391	17 480	3 581	4 682	443 128
2004–05	477 376	46 727	18 562	2 800	5 826	551 291
2005–06	612 918	60 000	23 406	3 058	6 746	706 128
2006–07	795 368	79 783	28 363	3 166	8 091	914 771
2007–08	1 009 347	112 555	34 167	3 483	8 954	1 168 506
2008–09	1 221 915	140 364	41 323	3 842	9 853	1 417 297
2009–10	1 513 617	185 029	45 536	4 196	10 917	1 759 295
2010–11	1 818 353	230 437	50 143	4 111	12 086	2 115 130
2011–12	2 102 823	266 511	54 736	4 105	12 798	2 440 973

Source: AusRegistry (2012).

**Table C 4.4** Communication activity—Internet commerce

Financial year	Proportion of all businesses which:		Internet income \$ billion
	Placed orders via the internet or web <i>per cent</i>	Received orders via the internet or web	
1999–00	4.0	6.0	5.1
2000–01	20.0	9.0	9.4
2001–02	25.0	6.0	11.3
2002–03	27.8	13.3	24.3
2003–04	31.3	12.0	33.3
2004–05	32.7	12.2	39.6
2005–06	37.3	20.9	56.7
2006–07	39.8	23.3	67.6
2007–08	42.7	23.7	81.0
2008–09	46.0	27.1	122.9
2009–10	46.5	24.8	142.8
2010–11	50.8	28.0	188.7

Source: ABS (2011b), ABS (2012m).

**Table C 4.5** Communication activity—internet use—volume of data downloaded by subscriber type, for ISPs with more than 1 000 active subscribers

Quarter ending	Dial-up	Fixed line broadband	Wireless broadband	Total	Business and government	Household	Total
				<i>Terabytes</i>			
September 2000				981	437	544	981
September 2001				1 227	466	762	1 227
September 2002				2 841	690	2 152	2 841
September 2003	1 430			4 322	1 117	3 204	4 322
September 2004	1 667			10 557	2 259	8 298	10 557
March 2005	1 820			13 625	3 252	10 372	13 625
September 2006	2 216			36 148	6 733	29 415	36 148
December 2007	2 693			59 332	6 247	53 084	59 331
December 2008	1 079			81 352	15 180	66 172	81 352
December 2009	294	113 410	14 251	127 954			
December 2010	183	174 665	16 990	191 839			
December 2011	96	322 280	23 142	345 518			
December 2012	np	526 472	28 196	554 771			

np Not available for publication

Note: Data not available for missing years.

Source: ABS (2013c).





# CHAPTER 5

## Communications security

**Table C 5.1** Communication security—do not call register

	Telephone numbers listed on register, by prefix						Total numbers listed	Complaints received relating to potential breaches of the DNCR Act
	(01) Satellite, (05) VOIP	(02) NSW, ACT	(03) VIC, TAS	(04) Mobile	(07) QLD	(08) WA, SA, NT		
<i>Number '000</i>								
May – June 2007							1 370	2.3
2007–08	0.5	459.3	484.0	750.2	411.4	314.6	2 420	28.8
2008–09	0.8	603.7	653.9	1 369.9	509.4	403.4	3 541	10.6
2009–10	1.5	821.2	872.5	2 153.8	663.9	519.4	5 032	9.3
2010–11	2.2	1 057.9	1 095.2	2 862.9	853.2	656.1	6 528	16.0
2011–12							7 730	19.0

Note: Data not available for missing years.

Source: ACMA (2012).

**Table C 5.2** Communication security—000 and 112 Emergency call services call handling

	Caller no response (CNR)		Calls aborted by caller before being answered	Calls aborted by caller after being answered (non-CNR)	Calls transferred to emergency service organisations	Total number of 000 and 112 emergency calls
	CNR calls terminated by Interactive Voice Response (IVR)	CNR calls connected to police through IVR				
2000–01						
2001–02					5 727 775	9 709 377
2002–03					3 948 657	11 332 701
2003–04	5 449 511	145 397	835 966	2 294 635	4 015 738	12 741 247
2004–05	4 241 385	163 330	693 745	1 512 737	4 196 430	10 807 627
2005–06	3 706 705	179 409	963 606	2 167 537	4 571 520	11 588 777
2006–07	2 990 652	216 863	1 079 821	2 718 333	5 133 857	12 139 526
2007–08	2 612 893	211 356	1 126 190	2 860 558	5 409 199	12 220 196
2008–09	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	5 356 526	10 301 011
2009–10					5 291 376	8 833 683
2010–11					5 595 198	8 867 191
2011–12					5 799 201	9 429 595

**P** Data are no longer reported in the ACMA Communications Report.

Source: ACMA (2012).



PART W: Water

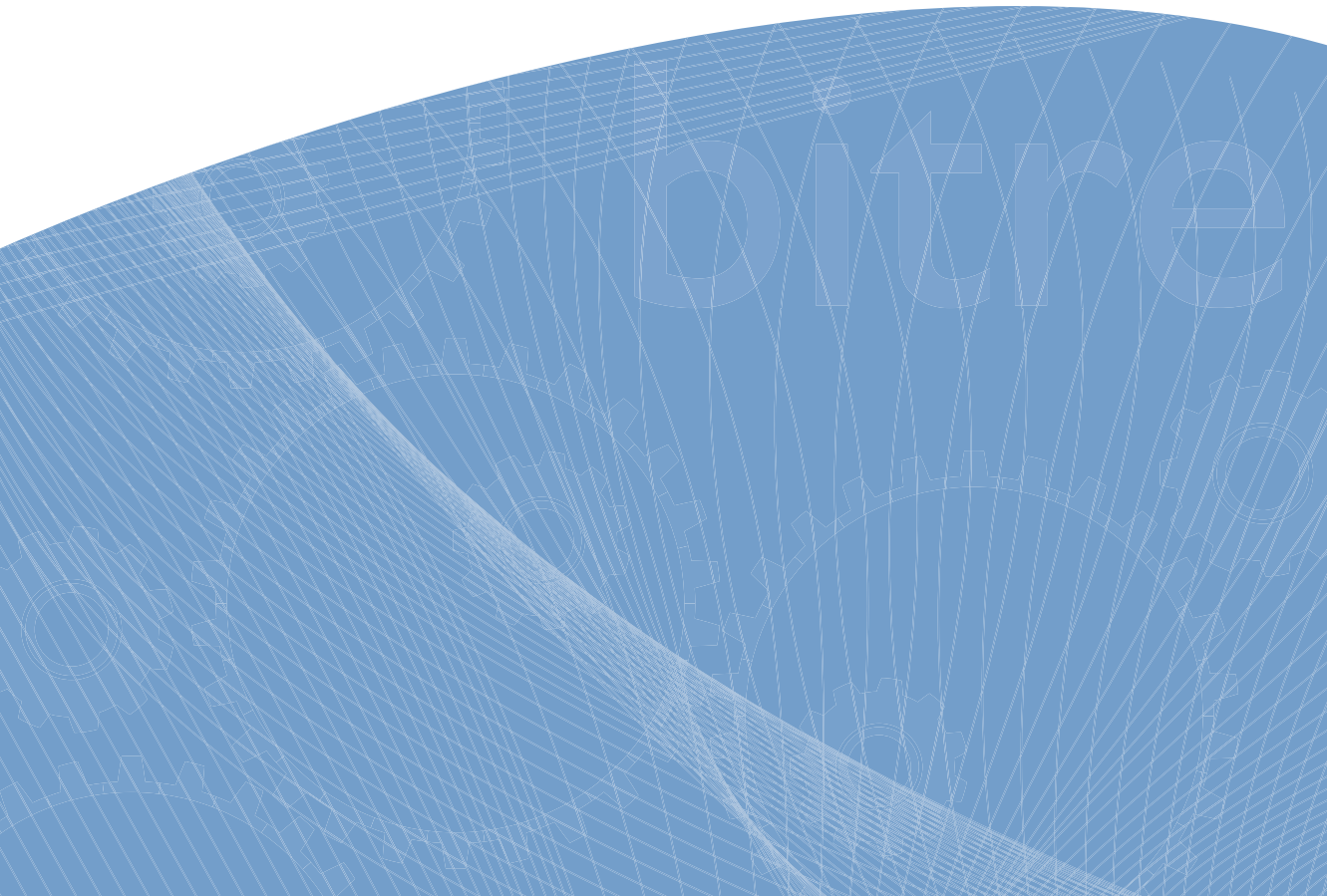
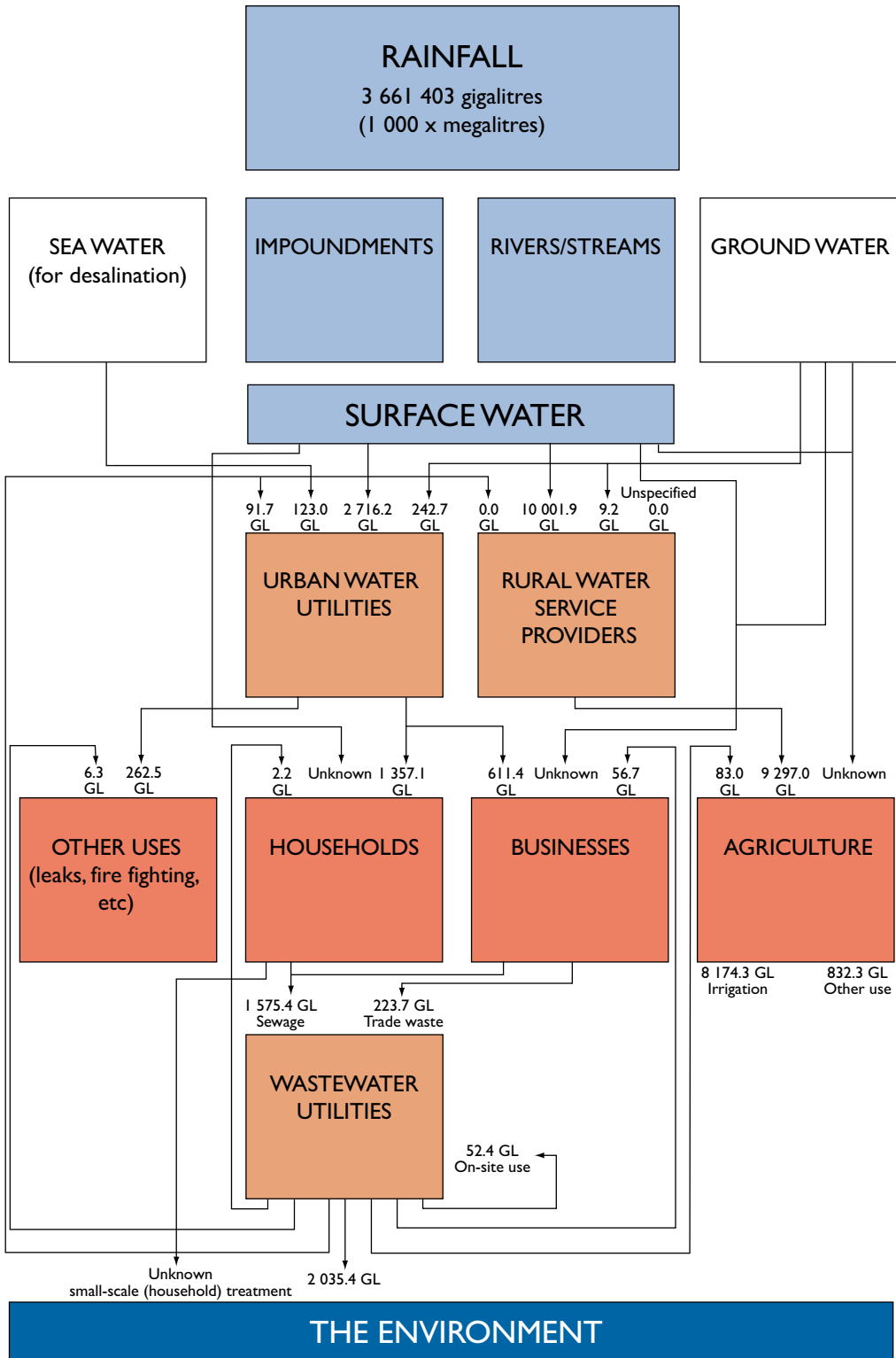


Figure W I Australia's international and domestic transport

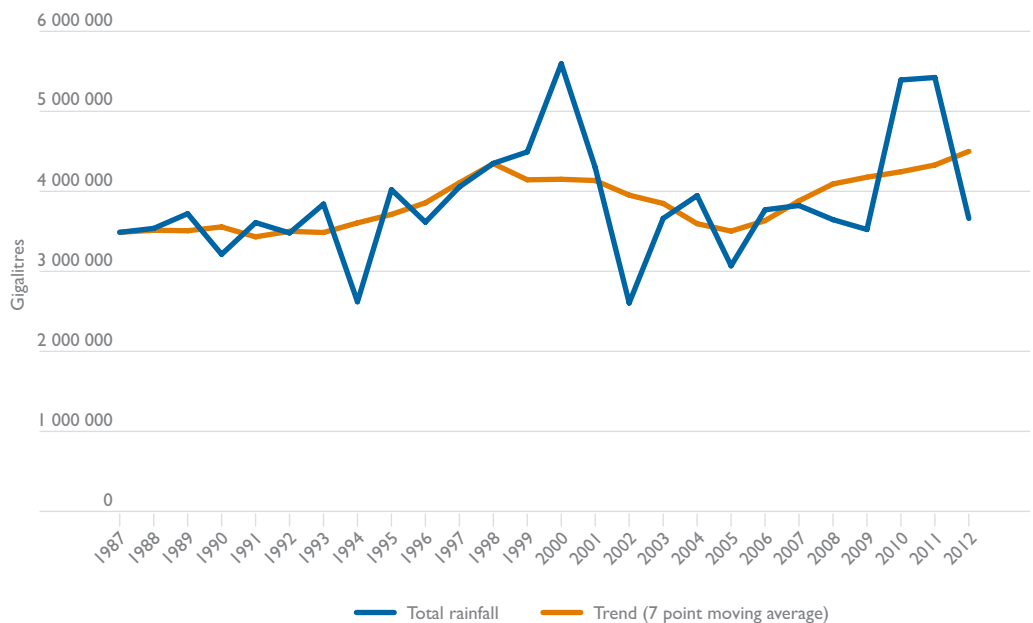


# PART W

## Water

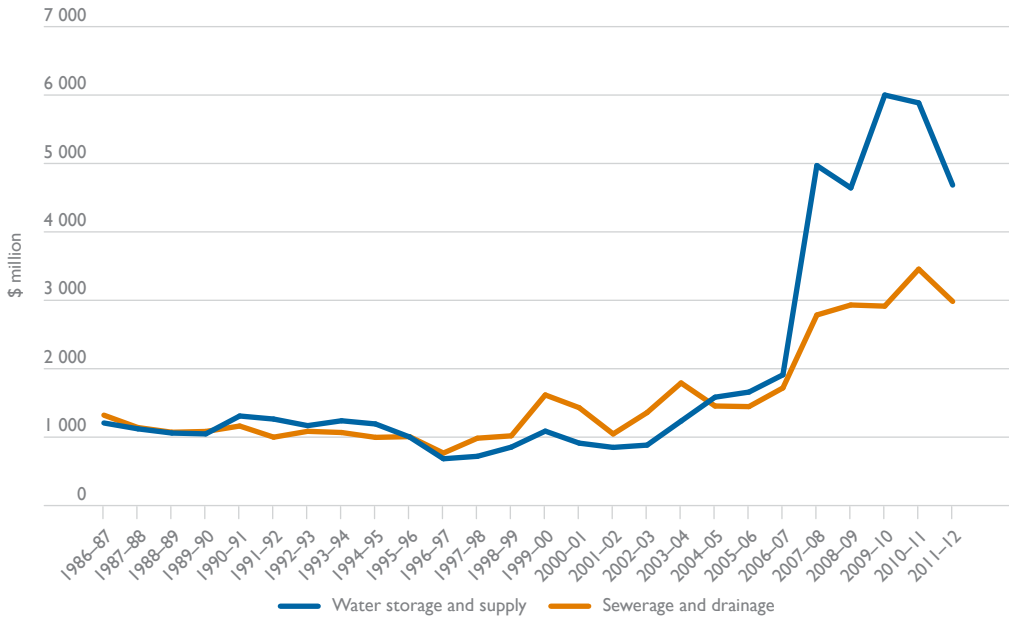
Australian water utilities use infrastructure networks to provide water to urban and rural areas and to provide wastewater collection and treatment services to large areas of the country. Part W: Water provides both physical and financial measures of water infrastructure, inputs to water supply and wastewater treatment activity, water supply and wastewater treatment activity, and measures of water health and emissions issues.

**Figure W 2 Total volume of rainfall in Australia**



Total rainfall is subject to significant annual variations. Rainfall was considerably higher than average in 2010 and 2011 – the years in which parts of Queensland, Victoria and New South Wales were flooded. In 2012 rainfall decreased sharply to finish below the trend line.

**Figure W 3** Water infrastructure engineering construction, adjusted by chain volume index



Infrastructure construction activity was relatively constant (in chain volume adjusted terms) until about 2002–03. Since 2003–04, water infrastructure construction expenditure increased sharply in real terms, particularly for water storage and supply projects, which reflect construction work on the South-East Queensland water grid and the construction of a desalination plant in Victoria. Expenditure on the construction of water storage and supply decreased with the recent completion of these projects.

# CHAPTER I

## Water infrastructure

**Table W 1.1a** Flow of new infrastructure—value of water infrastructure engineering construction work done by the private sector for the private sector, adjusted by chain volume index

Financial year	Water storage and supply	Sewerage and drainage	Total major infrastructure engineering construction	Water percentage of total
	<i>\$ million</i>			<i>per cent</i>
1986–87	101.5	77.4	2 085.4	8.58
1987–88	116.0	118.8	2 304.6	10.19
1988–89	124.1	122.1	2 513.8	9.79
1989–90	137.7	101.5	2 733.4	8.75
1990–91	175.9	164.4	2 574.4	13.22
1991–92	101.5	96.1	2 436.6	8.11
1992–93	138.9	126.0	2 572.8	10.29
1993–94	244.3	185.1	3 197.7	13.43
1994–95	442.7	120.5	3 182.0	17.70
1995–96	412.1	240.4	4 126.6	15.81
1996–97	195.5	121.8	4 322.4	7.34
1997–98	221.7	163.0	5 513.0	6.98
1998–99	223.7	122.9	6 366.8	5.44
1999–00	258.3	224.9	6 748.0	7.16
2000–01	268.8	278.7	6 072.2	9.02
2001–02	203.1	223.6	6 411.3	6.66
2002–03	227.9	390.7	8 676.3	7.13
2003–04	395.9	649.1	12 089.7	8.64
2004–05	452.4	378.0	13 834.0	6.00
2005–06	545.1	388.1	14 350.8	6.50
2006–07	530.7	404.8	17 376.1	5.38
2007–08	772.9	920.9	18 731.1	9.04
2008–09	588.8	1 005.7	20 008.2	7.97
2009–10	1 751.1	521.0	18 968.7	11.98
2010–11	2 947.0	652.4	23 398.3	15.38
2011–12	1 998.4	667.0	28 010.1	9.52

Source: ABS (2013a), adjusted by chain volume index.

**Table W 1.1b** Flow of new infrastructure—value of water infrastructure engineering construction work done by the private sector for the public sector, adjusted by chain volume index

Financial year	Water storage and supply	Sewerage and drainage	Total major infrastructure engineering construction	Water percentage of total
		\$ million		per cent
1986–87	389.6	359.2	4 704.8	15.92
1987–88	352.6	361.5	3 470.3	20.58
1988–89	274.2	304.7	3 117.7	18.57
1989–90	239.0	355.4	3 344.2	17.77
1990–91	356.5	395.4	4 099.8	18.34
1991–92	486.6	286.9	4 174.5	18.53
1992–93	393.3	369.3	4 518.5	16.88
1993–94	560.4	419.8	5 290.5	18.53
1994–95	355.9	387.9	4 624.8	16.08
1995–96	276.4	401.5	4 512.7	15.02
1996–97	271.6	338.1	5 001.7	12.19
1997–98	234.9	415.8	5 527.3	11.77
1998–99	275.6	475.7	5 905.5	12.72
1999–00	348.3	946.1	6 314.1	20.50
2000–01	284.8	794.3	5 859.8	18.41
2001–02	304.6	490.2	5 161.0	15.40
2002–03	253.2	589.1	5 290.7	15.92
2003–04	469.5	756.9	5 243.5	23.39
2004–05	729.5	658.1	7 037.5	19.72
2005–06	719.7	498.7	7 559.3	16.12
2006–07	795.3	590.6	7 939.4	17.46
2007–08	3 216.8	1 087.8	11 309.2	38.06
2008–09	3 141.4	1 125.2	13 844.2	30.82
2009–10	2 836.8	1 412.1	14 367.6	29.57
2010–11	1 534.8	1 573.4	15 107.1	20.57
2011–12	1 308.1	1 167.5	15 629.3	15.84

Source: ABS (2013a), adjusted by chain volume index.



**Table W 1.1c** Flow of new infrastructure—value of water infrastructure engineering construction work done by the public sector, adjusted by chain volume index

Financial year	Water storage and supply	Sewerage and drainage	Total major infrastructure engineering construction	Water percentage of total
				per cent
		\$ million		
1986–87	715.8	884.4	9 376.1	17.07
1987–88	652.8	660.0	8 645.7	15.18
1988–89	661.6	644.7	8 756.2	14.92
1989–90	670.8	625.9	10 020.4	12.94
1990–91	776.7	602.7	9 921.5	13.90
1991–92	676.0	616.4	8 477.9	15.24
1992–93	635.9	589.7	9 122.1	13.44
1993–94	434.6	462.7	8 741.5	10.26
1994–95	394.1	488.2	9 849.8	8.96
1995–96	314.4	365.7	10 073.2	6.75
1996–97	217.0	307.4	9 437.2	5.56
1997–98	262.9	405.7	9 408.8	7.11
1998–99	354.7	420.5	10 114.9	7.66
1999–00	481.4	445.7	11 206.2	8.27
2000–01	358.8	357.2	10 192.8	7.02
2001–02	342.2	332.8	10 136.9	6.66
2002–03	402.4	379.5	10 081.1	7.76
2003–04	368.9	385.9	9 846.2	7.67
2004–05	402.1	418.6	10 269.5	7.99
2005–06	393.8	559.5	12 536.8	7.60
2006–07	584.9	723.7	11 525.0	11.36
2007–08	979.5	776.9	11 168.1	15.73
2008–09	912.3	800.6	12 914.3	13.26
2009–10	1 412.2	981.6	14 596.5	16.40
2010–11	1 403.4	1 229.4	14 345.8	18.35
2011–12	1 377.9	1 149.1	14 847.6	17.02

Source: ABS (2013a), adjusted by chain volume index..

**Table W 1.1d** Flow of new infrastructure—total value of water infrastructure engineering construction work done, adjusted by chain volume index

Financial year	Water storage and supply	Sewerage and drainage	Total major infrastructure engineering construction	Water percentage of total
		\$ million		per cent
1986–87	1 207.0	1 320.9	16 166.3	15.64
1987–88	1 121.4	1 140.3	14 420.7	15.68
1988–89	1 059.9	1 071.4	14 387.8	14.81
1989–90	1 047.4	1 082.8	16 098.0	13.23
1990–91	1 309.1	1 162.6	16 595.6	14.89
1991–92	1 264.2	999.4	15 088.9	15.00
1992–93	1 168.1	1 084.9	16 213.4	13.90
1993–94	1 239.3	1 067.6	17 229.8	13.39
1994–95	1 192.7	996.6	17 656.6	12.40
1995–96	1 002.9	1 007.6	18 712.5	10.74
1996–97	684.1	767.3	18 761.3	7.74
1997–98	719.6	984.5	20 449.0	8.33
1998–99	854.0	1 019.1	22 387.1	8.37
1999–00	1 088.0	1 616.7	24 268.3	11.14
2000–01	912.3	1 430.2	22 124.8	10.59
2001–02	850.0	1 046.6	21 709.2	8.74
2002–03	883.5	1 359.2	24 048.1	9.33
2003–04	1 234.2	1 791.9	27 179.5	11.13
2004–05	1 584.0	1 454.8	31 141.1	9.76
2005–06	1 658.6	1 446.3	34 447.0	9.01
2006–07	1 910.9	1 719.1	36 840.6	9.85
2007–08	4 969.2	2 785.5	41 208.3	18.82
2008–09	4 642.5	2 931.4	46 766.8	16.20
2009–10	6 000.0	2 914.7	47 932.8	18.60
2010–11	5 885.3	3 455.2	52 851.3	17.67
2011–12	4 684.4	2 983.5	58 486.9	13.11

Source: ABS (2013a), adjusted by chain volume index.



**Table W 1.3** Infrastructure capacity—major Australian water storage dams<sup>2</sup>

End of financial year	Storage capacity	Water held in dams at end of year	Percentage of capacity used
	<i>gigalitres</i>		<i>per cent</i>
1971–72	52 430		
1972–73	52 771		
1973–74	65 644		
1974–75	66 211		
1975–76	68 491		
1976–77	68 700		
1977–78	68 738		
1978–79	72 816		
1979–80	72 966		
1980–81	73 900		
1981–82	74 365		
1982–83	76 153		
1983–84	77 061		
1984–85	78 293		
1985–86	78 615		
1986–87	80 997		
1987–88	81 138		
1988–89	81 210		
1989–90	82 860		
1990–91	82 876		
1991–92	82 972		
1992–93	83 016		
1993–94	83 109		
1994–95	83 111		
1995–96	83 112		
1996–97	83 292		
1997–98	83 296		
1998–99	83 297		
1999–00	83 312		
2000–01	83 312		
2001–02	83 853	48 684	58.1
2002–03	83 853	39 575	47.2
2003–04	83 853	44 164	52.7
2004–05	83 853	39 958	47.7
2005–06			
2006–07			
2007–08			
2008–09			
2009–10			
2010–11 <b>3</b>	79 383	58 799	74.1
2011–12	79 532	64 752	81.4
2012–13	80 406	55 096	68.5

**2, 3** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2006b), BoM (2013b).

**Table W 1.4** Infrastructure capacity—water storage in major dams—actual holdings of major water storage dams, by state/territory

End of financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>gigalitres</i>							
2001–02	12 206	6 083	6 226	115	11 254	12 494	237	69
2002–03	8 629	2 815	5 602	105	10 236	11 886	241	61
2003–04	7 970	4 371	6 287	111	11 352	13 744	251	78
2004–05	8 200	4 729	5 309	116	10 135	11 191	196	82
2005–06								
2006–07								
2007–08								
2008–09								
2009–10								
2010–11	14 469	8 690	9 689	2 127	10 702	12 757	283	82
2011–12 <sup>3</sup>	17 513	9 509	9 721	2 133	10 779	14 735	278	85
2012–13	13 196	8 957	9 680	1 981	8 471	12 508	214	55

<sup>3</sup> See end notes.

Source: ABS (2006b), BOM (2013b).

**Table W 1.5a** Flow of new infrastructure—capital expenditure on Australian water infrastructure, by state or territory—urban water infrastructure assets

End of financial year	NSW	VIC	QLD	SA	WA	TAS <sup>1</sup>	NT	ACT	Australia
	<i>\$ million</i>								
2005–06	570	337	213	118	468		11	27	1 762
2006–07	698	408	331	125	359		9	22	1 969
2007–08	1 401	584	390	159	254	17	17	52	2 873
2008–09	1 967	1 103	863	565	354		32	95	4 997
2009–10	1 277	981	619	902	629	50	52	164	4 642
2010–11	597	623	498	484	597	71	32	213	3 060
2011–12	572	586	863	462	494	94	24	192	3 210

<sup>1</sup> See end notes

Note: Data are not readily available for missing years

Source: OTER (2009), BITRE estimates based on NWC (2013c)

**Table W 1.5b** Flow of new infrastructure—capital expenditure on Australian water infrastructure, by state or territory—waste water and sewerage infrastructure assets

End of financial year	NSW	VIC	QLD	SA	WA	TAS <sup>1</sup>	NT	ACT	Australia
	<i>\$ million</i>								
2005–06	617	438	426	33	176		10	6	1 729
2006–07	739	560	479	35	263		14	12	2 124
2007–08	811	694	507	40	408	21	15	22	2 519
2008–09	803	732	610	151	519		16	55	2 906
2009–10	850	812	392	124	359	31	18	23	2 599
2010–11	777	1 020	529	209	158	26	24	21	2 761
2011–12	780	760	608	98	142	40	41	24	2 474

<sup>1</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.5c** Flow of new infrastructure—capital expenditure on Australian water infrastructure, by state or territory—irrigation and drainage

End of financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Australia
	<i>\$ million</i>								
2005–06									
2006–07	39	167	9	1	27				243
2007–08	38	279	7	1	15				341
2008–09	44	289	5	1	9				348
2009–10	95	82	12	2	6				196
2010–11	102	53	11	0	3				168
2011–12	84	48	11	4	4				151

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013b).

**Table W 1.6** Stock of infrastructure—number of urban water treatment plants providing full treatment, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	60	152	65	7	17		0	2
2006–07	61	156	65	7	18		0	2
2007–08	62	163	65	7	18	36	0	2
2008–09	66	157	64	7	18		0	2
2009–10	80	152	65	7	18	35	0	2
2010–11	82	150	62	7	18	37	0	2
2011–12	83	166	77	7	22	39	0	2

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.7** Stock of infrastructure—length of urban water mains, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT	
	<i>kilometres</i>								
2005–06	44 049	42 739	23 869	9 263	14 713		1 625	3 004	
2006–07	44 295	43 027	24 096	9 357	15 094		1 651	2 954	
2007–08	44 606	43 653	25 423	9 640	15 413	5 316	1 672	2 980	
2008–09	44 951	44 193	26 266	9 465	15 610		1 704	3 059	
2009–10	45 182	44 735	27 812	9 526	15 803	6 321	1 713	3 096	
2010–11	45 571	45 301	30 092	9 613	16 072	6 253	1 706	3 134	
2011–12	46 150	45 997	33 000	9 617	16 466	6 380	1 744	3 179	

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.8** Water infrastructure—average number of properties served per kilometre of water main, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	56.9	50.4	52.3	56.0	51.8		35.1	46.3
2006–07	57.2	50.9	52.7	56.3	51.7		35.7	47.4
2007–08	57.5	51.2	51.4	55.3	51.8	36.3	36.5	47.3
2008–09	57.5	51.4	51.6	57.1	52.3		36.6	47.1
2009–10	58.7	51.8	50.4	57.6	53.0	31.0	35.7	47.2
2010–11	58.9	52.2	49.0	57.9	53.0	31.5	36.5	47.9
2011–12	58.8	90.8	47.3	156.4	53.2	31.5	36.3	48.4

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.9** Infrastructure quality—average number of water main breaks per 100 kilometres of water main, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	29.1	24.7	18.2	20.6	15.7		55.2	43.0
2006–07	25.2	40.4	22.7	26.1	14.1		44.5	48.0
2007–08	21.3	33.9	21.3	24.4	14.0	38.3	42.8	38.0
2008–09	23.2	32.5	17.5	22.9	15.6		64.5	29.2
2009–10	20.7	28.7	20.4	21.6	13.9		58.0	23.6
2010–11	20.4	28.2	15.8	17.7	12.7		42.2	26.7
2011–12	17.1	24.1	13.0	17.2	12.2		40.9	24.7

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.10** Stock of infrastructure—number of sewage treatment plants providing full treatment, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	160	185	67	6	18		7	2
2006–07	165	184	66	6	18		7	2
2007–08	164	185	64	6	18	76	7	2
2008–09	164	197	78	7	18		7	2
2009–10	166	196	85	7	18	109	7	2
2010–11	156	196	99	7	19	110	7	2
2011–12	159	201	113	7	20	110	7	3

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.11** Stock of infrastructure—length of sewerage mains and channels, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
	<i>kilometres</i>							
2005–06	40 310	33 101	17 570	7 443	11 862		866	2 985
2006–07	40 393	33 533	17 645	7 492	12 146		877	2 993
2007–08	41 090	34 135	18 249	7 530	12 459	4 118	884	3 014
2008–09	41 481	34 500	18 385	7 584	12 685		914	3 059
2009–10	41 790	35 133	18 441	7 648	12 819	4 657	941	3 094
2010–11	42 254	35 623	19 933	7 701	13 031	4 535	954	3 134
2011–12	43 040	36 178	27 090	7 725	13 356	4 774	958	3 174

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.12** Water infrastructure—average number of properties served per kilometre of sewer main, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	58.9	61.8	53.4	65.7	54.8		63.5	46.2
2006–07	59.4	61.7	53.9	66.2	55.4		63.9	46.4
2007–08	59.2	62.3	53.7	66.7	55.8	43.2	65.6	46.8
2008–09	59.3	62.6	54.2	67.2	56.5		65.0	47.1
2009–10	59.5	62.8	54.3	67.6	57.7	37.7	60.2	46.9
2010–11	59.5	63.3	51.9	68.0	58.4	39.1	59.9	47.5
2011–12	59.1	113.7	57.1	77.3	58.8	37.4	63.0	48.2

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.13** Stock of infrastructure—number of recycled water treatment plants, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	2	46	1	4	1		1	2
2006–07	2	46	1	2	1		1	2
2007–08	2	43	2	3	1	0	2	2
2008–09	2	56	13	2	1		2	2
2009–10	4	58	25	3	1	0	2	2
2010–11	8	88	30	3	2	0	2	2
2011–12	5	74	26	5	2	0	2	1

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).



**Table W 1.14** Infrastructure quality—average number of sewer main breaks and chokes per 100 kilometres of sewer main, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>1</sup>	NT	ACT
2005–06	72.6	30.4	19.2	50.1	19.5		39.6	157.4
2006–07	80.1	33.9	20.6	62.9	23.5		36.5	166.4
2007–08	56.6	31.0	16.6	55.3	22.4	57.8	33.8	166.9
2008–09	58.3	31.8	16.3	<sup>a</sup> 57.2	20.8		35.0	189.8
2009–10	51.3	30.4	15.9	46.4	22.1	0.0	16.3	105.0
2010–11	52.0	24.9	14.0	46.3	19.2	0.0	20.3	78.0
2011–12	44.0	18.2	16.5	49.2	18.5	0.0	20.6	42.0

<sup>a</sup> South Australian data for 2008–09 includes data to conform with NWC definitions. Users should use caution when comparing with previous years.

<sup>1</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 1.15a** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—New South Wales

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	4 274	717	7 820	0	96	4 415	20	70	5
2007–08	4 230	716	7 820	0	86	4 293	20	70	5
2008–09	4 228	710	7 920	0	108	4 455	20	70	5
2009–10	4 270	715	7 920	0	108	4 409	20	70	5
2010–11	4 270	711	7 920	0	113	4 409	20	70	111
2011–12	5 649	721	7 920	0	113	4 409	20	70	106

Source: BITRE estimates based on NWC (2013b).

**Table W 1.15b** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—Victoria

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	11 520	343	6 486	521	5 124	3 141	8	27	260
2007–08	11 524	199	4 897	546	9 710	3 153	4	27	267
2008–09	7 383	190	4 897	737	10 278	3 142	4	27	267
2009–10	4 730	194	3 051	1 153	14 179	3 128	4	27	907
2010–11	3 993	246	3 051	3 893	14 840	3 042	2	0	901
2011–12	6 869	308	3 026	1 349	14 244	3 192	4	27	902

Source: BITRE estimates based on NWC (2013b).

**Table W 1.15c** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—Queensland

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	712	163	3 637	0	1 087	736	0	0	0
2007–08	712	163	3 637	0	1 087	736	0	0	0
2008–09	697	163	3 254	0	1 061	736	0	0	0
2009–10	697	163	3 310	0	1 061	736	0	0	0
2010–11	697	163	3 310	0	1 061	736	0	0	0
2011–12	697	163	3 310	0	1 061	736	0	0	0

Source: BITRE estimates based on NWC (2013b).

**Table W 1.15d** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—South Australia

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	0	0	0	0	391	0	0	0	335
2007–08	0	0	0	0	391	0	0	0	335
2008–09	0	0	0	0	391	0	0	0	339
2009–10	0	0	0	0	405	0	0	0	339
2010–11	0	0	0	0	405	0	0	0	339
2011–12	0	0	0	0	494	0	0	0	339

Source: BITRE estimates based on NWC (2013b).

**Table W 1.15e** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—Western Australia

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	501	127	0	50	340	0	0	0	0
2007–08	466	83	0	20	410	0	0	0	0
2008–09	466	83	0	20	430	0	0	0	0
2009–10	297	83	0	20	453	0	0	0	0
2010–11	341	85	0	20	469	0	0	0	0
2011–12	296	85	0	20	489	0	0	0	0

Source: BITRE estimates based on NWC (2013b).

**Table W 1.15f** Stock of infrastructure—length of rural water supply and drainage networks, by asset type—Australia

Financial year	Water supply					Drainage			
	Unlined channel	Lined channel	Regulated river	Natural waterway	Pipe	Unlined channel	Lined channel	Natural waterway	Pipe
	<i>kilometres</i>								
2006–07	17 007	1 350	17 942	571	7 037	8 291	28	97	600
2007–08	16 932	1 161	16 354	566	11 683	8 181	24	97	607
2008–09	12 774	1 146	16 072	757	12 268	8 332	24	97	611
2009–10	9 995	1 155	14 280	1 173	16 207	8 272	24	97	1 251
2010–11	9 301	1 205	14 280	3 913	16 888	8 187	22	70	1 352
2011–12	13 510	1 277	14 256	1 369	16 401	8 337	24	97	1 348

Source: BITRE estimates based on NWC (2013b).

**Table W 1.16** Stock of infrastructure—value of rural water supply and drainage networks, by state/territory—written down replacement cost of fixed assets

End of financial year	New South Wales	Victoria	Queensland	South Australia	Western Australia
	<i>\$ million</i>				
2006–07	1 036.2	2 436.8	2 951.0	180.6	88.0
2007–08	1 016.4	2 987.9	2 951.0	180.0	123.8
2008–09	1 008.2	3 015.8	2 737.8	179.7	125.0
2009–10	978.8	4 219.9	2 835.4	181.1	128.7
2010–11	1 049.5	5 770.5	2 890.7	177.0	127.4
2011–12	1 132.3	6 272.8	2 890.7	184.6	128.3

Source: BITRE estimates based on NWC (2013b).



## CHAPTER 2

# Water inputs

**Table W 2.1** Inputs to water supply—total rainfall on Australian land,<sup>4</sup> by state/territory

Calendar year	NSW <sup>5</sup>	VIC	QLD	SA	WA	TAS	NT	Australia
<i>gigalitres</i>								
1987								3 487 564
1988								3 536 793
1989								3 720 632
1990								3 212 189
1991								3 609 098
1992								3 479 872
1993								3 840 628
1994								2 619 903
1995								4 021 390
1996								3 614 482
1997								4 055 235
1998								4 349 840
1999								4 492 911
2000								5 594 409
2001								4 296 765
2002								2 604 519
2003	388 687	1 38 951	896 476	255 705	981 592	83 928	925 502	3 661 403
2004	400 733	132 356	1 079 924	212 432	1 173 862	83 860	868 839	3 946 008
2005	399 930	140 088	827 250	202 597	774 142	85 501	643 535	3 069 118
2006	280 272	83 462	1 050 503	150 473	1 226 989	59 988	926 852	3 769 092
2007	436 069	139 179	1 135 305	211 449	966 412	71 274	867 490	3 822 936
2008	420 007	114 618	1 159 534	184 895	974 002	67 717	724 482	3 646 019
2009	399 127	121 440	1 188 955	197 680	832 329	103 628	685 358	3 522 947
2010	654 504	196 487	1 960 824	360 938	855 098	95 077	1 269 530	5 392 109
2011	534 847	182 160	1 436 438	347 169	1 525 515	99 318	1 314 052	5 422 877
2012	456 145	143 045	1 166 457	171 126	938 584	90 289	696 151	3 661 403

**4, 5** See end notes.

Note: Data are not readily available for missing years.

Source: BOM (2013a), GA (2010).

**Table W 2.2** Inputs to urban water supply—volume of water sourced from surface water, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>1</sup>	NT	ACT
<i>megalitres</i>								
2005–06	755 055	708 714	400 136	159 232	128 368		34 643	54 340
2006–07	734 541	611 808	359 174	164 742	95 779		36 105	51 060
2007–08	689 299	560 386	310 895	147 078	102 108	100 438	35 067	43 694
2008–09	706 334	549 377	403 592	147 187	102 734		37 815	44 950
2009–10	794 324	539 200	427 081	148 606	129 056	0	35 878	45 315
2010–11	947 236	542 386	375 753	137 208	91 514	0	32 635	40 945
2011–12	1 075 301	567 299	680 998	138 929	75 037	0	36 421	41 790

<sup>1</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 2.3** Inputs to urban water supply—volume of water sourced from groundwater, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
	<i>megalitres</i>							
2005–06	39 156	5 901	51 729	3 855	145 125		14 133	0
2006–07	38 197	24 292	51 781	3 855	170 237		14 221	0
2007–08	26 611	25 203	54 158	3 701	151 081	260	15 232	0
2008–09	29 340	25 513	13 119	3 598	155 992		15 119	0
2009–10	29 969	25 030	13 354	3 461	130 919	0	15 606	0
2010–11	20 613	10 361	11 488	3 601	168 961	0	13 602	0
2011–12	22 636	12 200	26 181	3 079	164 029	0	14 328	0

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 2.4** Inputs to urban water supply—volume of water sourced from desalination, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
	<i>megalitres</i>							
2005–06	40	0	0	0	0		0	0
2006–07	0	0	0	0	18 120		0	0
2007–08	0	0	0	0	26 565	0	0	0
2008–09	0	0	0	0	33 160		0	0
2009–10	19 952	0	23 080	0	32 034	0	0	0
2010–11	77 102	0	13 523	0	28 541	0	0	0
2011–12	61 290	0	7 011	4 229	50 458	0	0	0

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 2.5** Inputs to urban water supply—volume of water sourced from recycling, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
	<i>megalitres</i>							
2005–06	11 028	29 305	12 677	17 336	4 365		1 585	2 141
2006–07	16 093	29 631	16 551	25 047	5 248		942	2 104
2007–08	18 905	27 279	15 389	25 868	6 201	0	974	3 789
2008–09	18 193	26 223	17 750	25 858	5 951		1 159	4 207
2009–10	20 792	23 358	19 344	24 393	5 706	0	1 030	4 249
2010–11	17 803	24 971	48 077	19 802	5 939	0	490	4 305
2011–12	20 089	19 961	33 849	4 620	7 862	0	746	4 607

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 2.6a** Urban water treatment—volume of residential sewage, non-residential sewage and non-trade waste collected, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	560 543	281 471	291 733	80 027	122 671		16 455	31 976
2006–07	637 768	244 513	265 896	82 143	122 720		16 226	30 995
2007–08	707 080	246 356	272 527	77 943	130 162		17 104	30 712
2008–09	628 131	242 765	313 314	77 608	129 790		17 105	30 051
2009–10	608 841	250 557	314 714	80 483	131 667		19 294	31 836
2010–11	680 452	201 179	362 398	84 419	129 812		22 089	35 441
2011–12	776 775	184 494	339 648	82 745	137 725		18 813	35 231

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 2.6b** Urban water treatment—volume of trade waste collected, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	36 280	53 225	14 927	10 574	6 100		1 051	0
2006–07	35 153	51 126	12 178	10 476	6 300		1 035	0
2007–08	35 530	48 773	12 185	9 217	6 473		1 091	0
2008–09	36 050	49 497	14 970	9 269	6 510		905	0
2009–10	32 575	49 430	16 297	8 189	6 539		1 232	0
2010–11	34 289	156 060	15 936	8 930	6 573		1 410	0
2011–12	34 413	153 686	17 767	9 348	7 292		1 201	0

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 2.6c** Urban water treatment—volume of total sewage collected, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>I</sup>	NT	ACT
	<i>megalitres</i>							
2005–06	611 001	761 409	312 841	90 601	128 771		17 506	31 976
2006–07	678 703	684 909	284 047	92 619	129 020		17 263	30 995
2007–08	742 610	673 791	290 368	87 160	136 635	55 363	18 195	30 712
2008–09	664 181	664 198	333 623	86 877	136 300		18 011	30 051
2009–10	641 423	689 765	336 989	88 672	138 206		20 524	31 836
2010–11	714 741	823 420	384 911	93 349	136 385		23 499	35 441
2011–12	811 188	804 584	364 168	92 093	145 017		20 014	35 231

<sup>I</sup> See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 2.7** Urban water prices—consumer price index, water and sewerage services, index numbers by capital city

Average over financial year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Australia
	<i>base of each index: 2011–12 = 100</i>								
1998–99	47.4	38.9	38.1	45.9	56.3	53.7	49.0	36.9	43.5
1999–00	49.9	38.9	40.2	47.2	58.8	53.3	49.0	39.5	45.1
2000–01	49.9	38.9	44.1	47.6	60.2	55.9	51.5	41.7	45.9
2001–02	50.8	40.9	46.0	49.6	62.1	57.6	52.8	43.3	47.5
2002–03	52.2	42.4	48.0	52.2	63.9	61.3	54.8	45.0	49.2
2003–04	54.0	44.6	50.0	56.2	66.3	64.1	55.5	48.1	51.5
2004–05	55.4	46.6	51.7	57.9	66.3	67.4	55.5	50.5	53.2
2005–06	59.6	49.1	54.6	59.9	67.8	73.5	55.5	54.7	56.1
2006–07	63.9	51.8	57.9	61.9	70.6	76.9	57.0	65.2	59.5
2007–08	66.8	54.5	64.2	64.1	75.6	81.3	59.6	71.3	63.0
2008–09	77.0	64.1	68.3	69.7	82.6	85.3	61.7	80.3	71.3
2009–10	88.9	75.4	78.4	76.9	87.6	91.9	74.6	85.7	81.4
2010–11	94.7	88.2	94.1	87.7	96.6	95.5	83.2	89.2	91.8
2011–12	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2012–13	101.0	100.4	101.6	110.5	111.0	106.3	114.7	105.7	103.2

Source: ABS (2012–13f).

**Table W 2.8** Inputs to rural water supply—power consumed to provide rural water distribution services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>kilowatt hours</i>				
2006–07	5 155 535	21 250 309	57 853 728	18 068 925	200
2007–08	4 956 344	18 065 716	36 531 867	15 666 171	683 875
2008–09	5 051 822	18 693 179	35 492 986	14 207 826	422 585
2009–10	6 320 225	18 476 739	56 946 073	16 383 896	2 294 798
2010–11	6 046 386	10 450 180	18 372 912	13 920 949	3 003 941
2011–12	6 971 082	29 042 654	18 372 912	22 416 052	2 919 338

Source: BITRE estimates based on NWC (2013b).

**Table W 2.9a** Inputs to rural water supply—supply network intake volume for surface water source, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	3 727 459	1 823 328	536 032	89 805	405 333
2007–08	1 677 102	1 383 487	622 979	79 854	298 652
2008–09	2 205 299	1 329 711	602 148	81 473	266 717
2009–10	2 732 428	1 751 884	821 479	82 123	239 214
2010–11	4 975 150	1 605 951	473 234	70 643	245 958
2011–12	7 219 133	1 978 876	473 234	99 087	231 528

Source: BITRE estimates based on NWC (2013b).



**Table W 2.9b** Inputs to rural water supply—supply network intake volume for groundwater source, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	3 615	70	39 938	0	0
2007–08	5 896	32 093	27 908	0	0
2008–09	4 178	34 841	23 567	0	0
2009–10	3 900	31 290	35 569	0	0
2010–11	1 201	15 349	6 678	0	0
2011–12	2 025	540	6 678	0	0

Source: BITRE estimates based on NWC (2013b).

**Table W 2.9c** Inputs to rural water supply—supply network intake volume for treated waste water, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	0	10 944	0	0	0
2007–08	0	12 521	0	0	0
2008–09	0	13 577	0	0	0
2009–10	0	12 729	0	0	0
2010–11	0	1 778	0	0	0
2011–12	0	23	0	0	0

Source: BITRE estimates based on NWC (2013b).

**Table W 2.9d** Inputs to rural water supply—supply network intake volume for other sources, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	0	16 000	0	0	0
2007–08	0	12 445	0	0	0
2008–09	0	11 604	0	0	0
2009–10	0	12 887	0	0	0
2010–11	0	586	0	0	0
2011–12	0	0	0	0	0

Source: BITRE estimates based on NWC (2013b).

**Table W 2.9e** Inputs to rural water supply—total supply network intake volume, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	3 731 074	1 850 342	575 970	89 805	405 333
2007–08	1 682 999	1 440 546	650 887	79 854	298 652
2008–09	2 209 477	1 389 733	625 715	81 473	266 717
2009–10	2 736 328	1 808 790	857 048	82 123	239 214
2010–11	4 976 351	1 623 663	479 912	70 643	245 958
2011–12	7 233 508	1 979 439	479 912	99 087	250 021

Source: BITRE estimates based on NWC (2013b).

**Table W 2.10a Rural water markets—entitlements<sup>6</sup> on issue, by state/territory**

Financial year	NSW	VIC	QLD	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory
<i>gigalitres</i>								
2007–08	11 058	4 295	4 717	1 333	2 515	1 471	117	65
2008–09	10 679	4 530	4 938	1 691	2 561	1 460	188	80
2009–10	11 094	5 701	5 604	1 374	2 437	1 650	258	76
2010–11	11 649	5 990	5 734	1 482	2 722	1 711	323	76
2011–12	13 280	6 664	5 870	1 747	2 634	1 794	311	76

<sup>6</sup> See end notes.

Source: NWC (2013a).

**Table W 2.10b Rural water markets—total entitlement<sup>6</sup> trade, by state/territory**

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
<i>gigalitres</i>								
2007–08		218	76	17	2	57	0	34
2008–09	1 286	252	75	73	8	104	0	2
2009–10	1 276	402	70	150	24	27	0	10
2010–11	635	300	136	88	25	20	0	0
2011–12	768	377	130	93	14	55	0	0

<sup>6</sup> See end notes.

Note: Data are not readily available for missing years..

Source: NWC (2013a).

**Table W 2.10c Rural water markets—value of market turnover for water entitlement,<sup>6</sup> by state/territory**

Financial year	NSW	VIC	QLD	SA <sup>b</sup>	WA	TAS	NT	ACT
<i>\$ million</i>								
2007–08	470.5	277.4	57.7	38.3	1.0	na	0.0	na
2008–09	1 661.8	370.6	70.4	118.6	1.7	na	0.0	na
2009–10	1 564.2	733.2	91.6	227.1	0.7	na	0.0	na
2010–11	687	428	104	122	1	na	0	na
2011–12	730	491	142	135	1	na	0	na

<sup>b</sup> The South Australian entitlement turnover value for 2007–08 is based on average prices for whole-of-licence transfers whereas for 2008–09 and 2009–10 the values are based on permanent allocation trades.

<sup>6</sup> See end notes.

na. Not available.

Source: NWC (2013a).

**Table W 2.10d Rural water markets—value of market turnover for water allocations,<sup>7</sup> by state/territory**

Financial year	NSW	VIC	QLD	SA <sup>b</sup>	WA	TAS	NT	ACT
<i>\$ million</i>								
2007–08	384.0	270.5	na	181.3	0.3	na	0.0	0.0
2008–09	448.0	124.6	na	33.2	0.1	na	0.0	0.0
2009–10	217.9	127.7	na	20.4	0.3	na	0.0	0.0
2010–11	85	33	na	10	1	0	0	0
2011–12	39	28	na	11	0	na	0	0

<sup>b</sup> The South Australian entitlement turnover value for 2007–08 is based on average prices for whole-of-licence transfers whereas for 2008–09 and 2009–10 the values are based on permanent allocation trades.

<sup>7</sup> See end notes.

na. Not available.

Source: NWC (2013a).

## CHAPTER 3

# Supply and use

**Table W 3.1** Urban water supply—Australian population receiving water supply services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT C
				<i>thousands</i>				
2005–06	6 237	4 879	2 915	1 131	1 714		132	372
2006–07	6 291	4 905	2 958	1 139	1 772		134	374
2007–08	6 318	5 087	3 005	1 147	1 820	392	136	380
2008–09	6 370	5 196	3 164	1 165	1 882		138	387
2009–10	6 474	5 350	3 338	1 173	1 953	406	140	396
2010–11	6 659	5 439	3 581	1 190	1 983	410	142	403
2011–12	6 686	9 828	3 735	1 198	2 061	423	146	412

**C** ACT population receiving water supply services includes some NSW residents in adjacent areas.

**I** See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 3.2a** Urban water supply—number of residential properties connected to the urban water supply network, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
				<i>thousands</i>				
2005–06	2 320	1 962	1 152	489	672		49	132
2006–07	2 350	1 994	1 173	496	689		50	133
2007–08	2 372	2 033	1 200	502	707		51	134
2008–09	2 389	2 069	1 253	509	725		51	137
2009–10	2 446	2 110	1 296	517	743	168	53	139
2010–11	2 472	2 158	1 367	525	759	171	54	142
2011–12	2 494	3 823	1 453	531	784	177	53	146

**I** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.2b** Urban water supply number of non-residential properties connected to the urban water supply network, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
				<i>thousands</i>				
2005–06	186	194	96	30	91		8	7
2006–07	187	198	98	31	91		9	7
2007–08	191	203	99	31	90		10	7
2008–09	196	203	103	31	91		11	7
2009–10	206	206	106	32	95	28	8	7
2010–11	213	207	107	32	93	25	8	8
2011–12	218	353	107	31	92	24	10	8

**I** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.2c** Urban water supply—total number of properties connected to the urban water supply network, by state/territory<sup>d</sup>

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>l</sup>	NT	ACT
	<i>thousands</i>							
2005–06	2 505	2 154	1 249	519	762		57	139
2006–07	2 536	2 190	1 271	527	781		59	140
2007–08	2 566	2 233	1 306	533	799	193	61	141
2008–09	2 586	2 273	1 356	540	816		62	144
2009–10	2 653	2 315	1 402	548	837	196	61	146
2010–11	2 685	2 365	1 474	557	852	197	62	150
2011–12	2 712	4 176	1 559	1 504	876	201	63	154

<sup>d</sup> Components may not sum to total due to rounding.

<sup>l</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 3.3a** Urban water supply—volume of urban water supplied to residential properties, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	466 928	400 484	222 572	113 887	184 440		22 523	34 436
2006–07	458 990	358 567	204 490	115 690	198 472		24 634	31 954
2007–08	420 677	323 974	182 769	97 152	192 962		25 299	26 079
2008–09	453 865	324 878	177 063	96 680	202 972		25 642	27 494
2009–10	471 094	321 327	209 730	98 649	206 237		25 163	27 609
2010–11	450 114	307 864	197 990	94 289	201 926		21 794	25 204
2011–12	443 879	331 218	238 155	94 700	198 018		24 756	26 326

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.3b** Urban water supply—volume of urban water supplied to commercial, municipal, and industrial properties, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	221 048	184 741	129 249	41 187	61 525		19 175	14 177
2006–07	222 805	171 501	128 171	42 889	64 006		19 589	13 642
2007–08	209 888	158 010	118 995	38 580	64 015		19 435	11 153
2008–09	205 447	156 366	110 474	38 936	64 026		20 280	11 223
2009–10	212 120	151 046	130 250	22 491	61 972		16 680	10 185
2010–11	199 694	142 545	117 214	35 168	62 666		15 034	8 822
2011–12	200 480	149 433	136 883	33 206	63 464		16 951	10 977

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.3c** Urban water supply—volume of urban water supplied for other uses,<sup>8</sup> by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	89 166	70 843	27 324	19 948	24 201		1 681	3 857
2006–07	75 527	65 275	21 659	12 343	20 354		1 253	2 103
2007–08	83 551	62 558	19 273	15 952	22 286		1 290	3 517
2008–09	74 764	57 634	17 190	14 880	23 496		1 061	3 080
2009–10	72 366	54 197	23 207	15 638	25 968		1 454	3 778
2010–11	126 623	54 900	28 348	6 432	26 251		2 002	3 345
2011–12	114 454	59 757	29 126	21 873	32 822		1 432	3 052

<sup>8</sup> See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.3d** Urban water supply—total volume of urban water supplied, by state/territory<sup>d</sup>

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>l</sup>	NT	ACT
	<i>megalitres</i>							
2005–06	1 095 926	655 447	401 747	176 006	269 732		43 379	52 470
2006–07	1 060 765	592 342	375 365	171 906	282 267		45 476	47 699
2007–08	991 962	544 542	342 252	152 656	279 263	80 961	46 025	40 749
2008–09	1 017 923	538 878	376 955	152 081	290 494		46 730	41 797
2009–10	1 094 031	887 932	393 992	137 617	294 177		43 297	41 572
2010–11	1 211 415	857 070	360 624	135 889	290 844		38 830	37 371
2011–12	1 186 808	905 967	409 834	149 779	294 305		43 139	40 355

<sup>d</sup> components may not sum to total due to rounding.

<sup>l</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 3.4** Urban water supply—Australian population receiving sewerage services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>l</sup>	NT	ACT
	<i>thousands</i>							
2005–06	5 844	4 612	2 764	1 070	1 525		126	334
2006–07	5 870	4 648	2 794	1 078	1 575		129	336
2007–08	5 897	4 820	2 843	1 085	1 642	361	131	341
2008–09	5 960	4 946	2 973	1 103	1 716		133	348
2009–10	6 072	4 940	3 147	1 112	1 794	371	135	355
2010–11	6 258	5 121	3 419	1 125	1 830	379	137	362
2011–12	6 264	9 486	3 544	1 136	1 889	385	141	371

<sup>l</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 3.5a** Urban water treatment—number of residential properties connected to sewerage services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
				<i>thousands</i>				
2005–06	2 203	1 822	1 084	462	594		47	132
2006–07	2 222	1 847	1 100	469	617		48	133
2007–08	2 249	1 892	1 143	475	637		49	134
2008–09	2 276	1 929	1 165	482	656		49	137
2009–10	2 295	1 970	1 200	489	677	152	51	138
2010–11	2 319	2 015	1 253	495	698	156	51	142
2011–12	2 342	3 617	1 420	503	716	158	51	146

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.5b** Urban water treatment—number of non-residential properties connected to sewerage services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
				<i>thousands</i>				
2005–06	156	163	95	27	55		8	6
2006–07	165	162	99	27	56		8	6
2007–08	165	167	98	27	59		9	7
2008–09	165	171	96	28	61		10	7
2009–10	171	174	99	28	63	24	6	7
2010–11	176	175	97	29	64	21	6	7
2011–12	179	309	109	27	64	20	10	7

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.5c** Urban water treatment—total number of properties connected to sewerage services, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
				<i>thousands</i>				
2005–06	2 358	1 985	1 179	489	650		55	138
2006–07	2 386	2 009	1 199	496	673		56	139
2007–08	2 412	2 060	1 236	502	695	178	58	141
2008–09	2 441	2 099	1 262	509	717		59	144
2009–10	2 466	2 143	1 300	517	740	176	57	145
2010–11	2 495	2 190	1 350	524	761	177	57	149
2011–12	2 520	3 926	1 529	597	780	178	60	153

I See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6a** Urban water treatment—volume of recycled water supplied to residential properties,<sup>9</sup> by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	1 693	0	31	50	0		0	0
2006–07	1 667	5	31	200	0		0	0
2007–08	1 415	123	36	305	0		0	0
2008–09	1 704	213	31	352	0		0	0
2009–10	2 209	1 404	31	334	0		0	0
2010–11	2 373	0	31	291	0		0	0
2011–12	1 993	2	63	155	0		0	0

**9** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6b** Urban water treatment—volume of recycled water supplied to commercial, municipal, and industrial properties,<sup>9,10</sup> by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	9 000	4 491	10 092	679	5 385		1 415	2 021
2006–07	13 766	5 298	12 912	1 324	6 402		942	2 009
2007–08	16 246	6 151	12 035	1 572	7 420		974	3 736
2008–09	14 677	7 621	13 781	1 516	7 732		1 159	4 204
2009–10	18 505	4 264	30 245	1 810	6 118		1 030	4 151
2010–11	15 851	3 945	18 983	1 861	6 604		490	1 789
2011–12	16 248	4 915	23 669	2 380	6 856		746	1 857

**9, 10** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6c** Urban water treatment—volume of recycled water supplied for agricultural uses,<sup>11</sup> by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	12 330	50 211	5 443	12 680	1 915		0	120
2006–07	13 387	52 141	5 381	18 465	1 873		0	95
2007–08	12 782	51 377	4 423	18 727	1 900		0	53
2008–09	17 110	48 727	9 158	18 839	1 958		0	0
2009–10	19 614	51 041	8 236	18 119	2 063		0	96
2010–11	22 212	25 865	5 301	12 117	1 993		0	0
2011–12	19 051	37 618	5 688	17 480	3 156		0	0

**11** See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6d** Urban water treatment—volume of recycled water supplied for on-site use,<sup>12</sup> by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	15 604	16 369	5 127	4 073	2 069		187	0
2006–07	17 686	16 274	5 852	2 914	2 069		343	0
2007–08	20 220	15 873	6 656	3 033	2 075		295	0
2008–09	18 908	18 898	9 614	2 675	2 087		300	3
2009–10	17 865	19 951	9 526	2 289	2 404		0	2
2010–11	17 349	20 252	10 337	2 023	3 060		0	405
2011–12	16 680	19 805	10 253	123	2 834		0	2 750

<sup>12</sup> See end notes.

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6e** Urban water treatment—volume of recycled water supplied for other uses, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>megalitres</i>							
2005–06	0	0	0	160	0		0	0
2006–07	8	0	0	2 450	0		0	0
2007–08	0	0	0	2 232	0		0	0
2008–09	62	0	0	2 477	0		185	0
2009–10	0	0	0	2 331	1 475		203	0
2010–11	103	0	0	3 901	2 200		294	0
2011–12	0	0	0	2 984	2 980		336	0

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 3.6f** Urban water treatment—total volume of recycled water supplied, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
	<i>megalitres</i>							
2005–06	38 951	80 698	20 692	17 642	9 369		1 602	31 160
2006–07	46 634	96 743	24 175	25 353	10 344		1 285	29 061
2007–08	50 723	95 969	27 924	25 869	11 395	4 216	1 269	29 496
2008–09	56 572	99 207	32 584	25 858	11 778		1 645	29 516
2009–10	66 098	97 872	48 038	24 883	12 060		1 233	31 019
2010–11	84 865	56 241	44 376	20 194	13 857		784	34 531
2011–12	79 515	70 509	39 707	23 122	15 826		1 083	4 607

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).



**Table W 3.7** Urban water treatment—percentage of effluent recycled, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>I</sup>	NT	ACT
	<i>per cent</i>							
2005–06	6.37	10.60	6.61	19.47	7.28		9.15	97.45
2006–07	6.87	14.12	8.51	27.37	8.02		7.44	93.76
2007–08	6.83	14.24	9.62	29.68	8.34	7.62	6.97	96.04
2008–09	8.52	14.94	9.77	29.76	8.64		9.13	98.22
2009–10	10.30	14.19	14.26	28.06	8.73		6.01	97.43
2010–11	11.87	6.83	11.53	21.63	10.16		3.34	97.43
2011–12	9.80	8.76	10.90	25.11	10.91		5.41	13.08

<sup>I</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 3.8** Rural water supply—volume of rural water supplied at customer service points, by state/territory

Financial year	NSW	VIC	QLD	SA	WA
	<i>megalitres</i>				
2006–07	3 010 908	1 771 352	1 047 399	89 805	259 646
2007–08	1 405 459	1 578 128	861 623	76 793	199 853
2008–09	1 851 526	1 837 605	830 011	80 188	212 771
2009–10	2 329 787	2 163 308	1 114 916	77 793	183 087
2010–11	4 162 279	1 497 101	393 399	68 326	177 245
2011–12	6 621 017	2 019 868	393 399	97 786	164 912

Source: BITRE estimates based on NWC (2013b).

**Table W 3.9a** Rural water supply—water consumption by agricultural activity, by state or territory—irrigation water

Financial year	NSW <sup>e</sup>	VIC	QLD	SA	WA	TAS	NT	Australia
	<i>megalitres</i>							
2004–05	3 716 557	2 363 764	2 613 404	877 818	267 098	231 758	14 198	10 084 596
2005–06	4 534 108	2 448 485	2 325 003	897 197	306 284	203 931	22 356	10 737 364
2006–07	2 605 019	1 648 914	1 840 252	966 057	293 186	263 029	19 737	7 636 194
2007–08	1 677 083	1 332 045	1 842 729	880 268	284 878	252 113	15 683	6 284 799
2008–09	1 910 033	1 194 501	2 058 471	827 230	226 085	262 296	21 962	6 500 577
2009–10	2 002 797	1 504 742	1 823 870	711 992	252 058	281 953	18 629	6 596 040
2010–11	2 746 189	1 134 701	1 693 994	621 308	253 759	172 709	22 713	6 645 375
2011–12	3 527 444	1 646 243	1 884 062	655 898	246 369	192 035	22 271	8 174 320

<sup>e</sup> Includes the Australian Capital Territory.

Source: ABS (2013f).

**Table W 3.9b** Rural water supply—water consumption by agricultural activity, by state or territory—other water use

Financial year	NSW <sup>e</sup>	VIC	QLD	SA	WA	TAS	NT	Australia
	<i>megalitres</i>							
2004–05	259 551	206 456	251 486	127 010	162 274	23 690	31 440	1 061 906
2005–06	262 364	192 653	255 633	78 378	121 241	25 789	15 369	951 428
2006–07	240 062	174 371	243 980	68 723	118 806	24 816	14 477	885 234
2007–08	178 691	138 822	196 442	53 685	85 026	18 795	32 994	704 455
2008–09	198 070	139 351	237 211	74 419	92 310	22 634	21 062	785 056
2009–10	202 053	139 366	213 380	60 291	88 207	23 413	36 006	762 716
2010–11	236 524	165 648	265 908	77 721	93 349	28 490	37 587	905 227
2011–12	223 787	166 683	224 189	65 628	90 221	25 922	35 823	832 253

<sup>e</sup> Includes the Australian Capital Territory.

Source: ABS (2013f).

**Table W 3.9c** Rural water supply—water consumption by agricultural activity, by state or territory—total

Financial year	NSW <sup>e</sup>	VIC	QLD	SA	WA	TAS	NT	Australia
	<i>megalitres</i>							
2004–05	3 976 108	2 570 220	2 864 890	1 004 828	429 372	255 448	45 638	11 146 502
2005–06	4 796 472	2 641 138	2 580 636	975 575	427 525	229 720	37 725	11 688 792
2006–07	2 845 081	1 823 285	2 084 232	1 034 780	411 992	287 845	34 214	8 521 428
2007–08	1 855 774	1 470 867	2 039 171	933 953	369 904	270 908	48 677	6 989 254
2008–09	2 108 103	1 333 852	2 295 682	901 649	318 395	284 930	43 024	7 285 633
2009–10	2 204 850	1 644 108	2 037 251	772 283	340 265	305 366	54 635	7 358 756
2010–11	2 982 713	1 300 349	1 959 902	699 029	347 108	201 199	60 300	7 550 602
2011–12	3 751 231	1 812 926	2 108 251	721 526	336 590	217 957	58 094	9 006 573

<sup>e</sup> Includes the Australian Capital Territory.

Source: ABS (2013f).

**Table W 3.10a** Rural water supply—area of irrigated crops and pastures, by agricultural activity—New South Wales<sup>e</sup>

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	np	np	<sup>f</sup> 173	0	<sup>f</sup> 29	30	15	4	34
2003–04	np	np	<sup>f</sup> 112	0	<sup>f</sup> 43	25	<sup>f</sup> 22	<sup>f</sup> 5	34
2004–05	590	np	146	np	<sup>f</sup> 30	26	<sup>f</sup> 17	4	36
2005–06 <sup>13</sup>	595	101	169	0	29	30	18	5	44
2006–07	445	<sup>f</sup> 20	99	np	<sup>f</sup> 20	34	15	<sup>f</sup> 5	41
2007–08	385.8	2.1	36.7	<sup>g</sup> 0.9	15.5	29.6	12.3	<sup>f</sup> 3.2	35.8
2008–09	320.7	<sup>f</sup> 7.2	70.3	0.0	<sup>f</sup> 18.3	24.8	13.5	3.8	<sup>f</sup> 41.2
2009–10	342.7	np	80.1	np	<sup>f</sup> 21.1	26.5	14.8	<sup>f</sup> 3.9	<sup>f</sup> 37.3
2010–11	np	<sup>f</sup> 75.0	196.2	0.1	21.1	25.1	14.6	3.6	39.2
2011–12	353.7	<sup>f</sup> 101.9	<sup>f</sup> 235.6	0.0	<sup>f</sup> 17.9	23.4	12.8	2.8	33.4

<sup>e</sup> Includes the Australian Capital Territory.

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10b** Rural water supply—area of irrigated crops and pastures, by agricultural activity—Victoria

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	np	np	0	0	<sup>f</sup> 8	<sup>f</sup> 39	26	3	35
2003–04	np	np	0	0	<sup>f</sup> 7	29	23	3	33
2004–05	np	np	0	0	<sup>f</sup> 9	30	25	3	36
2005–06 <sup>13</sup>	535	1	0	0	6	36	26	3	37
2006–07	330	0	0	0	<sup>g</sup> 2	35	22	3	<sup>f</sup> 44
2007–08	312.3	0.0	0.0	0.0	<sup>g</sup> 7.0	33.5	27.7	<sup>f</sup> 3.9	<sup>g</sup> 39.2
2008–09	267.5	0.0	0.0	0.0	<sup>g</sup> 2.2	35.0	24.7	2.7	<sup>f</sup> 36.6
2009–10	322.1	np	0.0	0.0	np	45.6	25.2	3.0	<sup>f</sup> 38.1
2010–11	np	<sup>f</sup> 0.2	0.0	0.0	5.6	46.1	25.6	3.1	30.0
2011–12	<sup>g</sup> 436.9	<sup>g</sup> 0.8	0.0	0.0	<sup>f</sup> 7.0	45.9	24.6	3.0	32.7

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10c Rural water supply—area of irrigated crops and pastures, by agricultural activity—Queensland**

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed 14	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
'000 hectares									
2002–03	143	0	61	235	<sup>f</sup> 11	35	34	3	<sup>f</sup> 3
2003–04	154	0	73	237	<sup>f</sup> 24	33	35	3	<sup>g</sup> 3
2004–05	122	0	<sup>f</sup> 124	209	<sup>f</sup> 11	31	31	4	<sup>g</sup> 4
2005–06 13	np	0	101	205	10	37	31	4	3
2006–07	141	0	35	196	<sup>f</sup> 9	37	31	4	<sup>f</sup> 1
2007–08	207.3	0.0	21.2	184.0	<sup>f</sup> 17.0	35.4	33.7	<sup>f</sup> 4.4	<sup>f</sup> 1.3
2008–09	185.0	0.0	<sup>f</sup> 71.6	191.9	<sup>f</sup> 20.7	34.9	29.4	3.9	<sup>g</sup> 3.1
2009–10	126.2	np	73.1	np	<sup>f</sup> 13.9	33.6	29.4	4.0	np
2010–11	np	0.4	163.0	129.4	13.8	35.1	34.9	3.3	2.8
2011–12	<sup>f</sup> 82.5	<sup>g</sup> 0.3	160.8	166.1	<sup>f</sup> 7.5	34.4	28.6	3.8	2.0

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

13, 14 See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10d Rural water supply—area of irrigated crops and pastures, by agricultural activity—South Australia**

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed 14	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
'000 hectares									
2002–03	80	0	0	0	<sup>g</sup> 3	18	14	<sup>f</sup> 1	66
2003–04	87	0	0	0	<sup>f</sup> 2	17	14	<sup>g</sup> 2	64
2004–05	82	0	0	0	<sup>g</sup> 3	19	17	<sup>f</sup> 1	61
2005–06 13	95	0	0	0	np	19	15	1	85
2006–07	85	0	0	0	<sup>g</sup> 2	19	14	1	78
2007–08	103.5	0.0	0.0	0.0	<sup>f</sup> 7.7	16.4	15.5	0.8	77.2
2008–09	np	0.0	0.0	0.0	<sup>g</sup> 3.0	18.0	14.5	np	77.7
2009–10	75.1	0.0	0.0	0.0	<sup>g</sup> 1.4	14.9	11.8	<sup>f</sup> 0.8	<sup>f</sup> 71.9
2010–11	np	0.0	0.0	0.0	2.5	17.8	13.8	0.9	68.0
2011–12	<sup>f</sup> 73.8	0.0	0.0	0.0	<sup>f</sup> 2.6	16.1	14.7	<sup>f</sup> 0.8	58.6

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

13, 14 See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10e** Rural water supply—area of irrigated crops and pastures, by agricultural activity—Western Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	np	0	0	4	np	<sup>f</sup> 10	9	2	<sup>f</sup> 10
2003–04	np	0	0	4	np	<sup>f</sup> 9	9	<sup>f</sup> 2	<sup>g</sup> 14
2004–05	np	0	0	np	np	<sup>f</sup> 9	7	<sup>f</sup> 2	<sup>f</sup> 8
2005–06 <sup>13</sup>	np	0	0	<sup>f</sup> 5	np	10	8	2	12
2006–07	np	0	0	4	l	9	8	2	<sup>f</sup> 13
2007–08	np	0.0	0.0	2.2	np	10.2	9.4	np	<sup>f</sup> 12.7
2008–09	np	0.0	0.0	0.0	1.4	8.5	8.5	1.4	<sup>f</sup> 12.5
2009–10	np	0.0	0.0	0.0	3.0	7.5	8.0	<sup>f</sup> 1.2	<sup>f</sup> 11.2
2010–11	np	<sup>g</sup> 0.2	0.0	0.0	<sup>f</sup> 3.8	8.1	9.3	1.5	10.5
2011–12	<sup>g</sup> 16.8	0.1	<sup>f</sup> 0.8	np	1.3	<sup>f</sup> 7.8	9.5	<sup>f</sup> 1.2	<sup>f</sup> 9.9

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10f** Rural water supply—area of irrigated crops and pastures, by agricultural activity—Tasmania

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	48	0	0	0	16	<sup>f</sup> 4	18	0	<sup>f</sup> 1
2003–04	49	0	0	0	<sup>f</sup> 12	<sup>f</sup> 4	19	0	<sup>g</sup> 1
2004–05	51	0	0	0	8	<sup>f</sup> 4	17	0	<sup>g</sup> 1
2005–06 <sup>13</sup>	56	0	0	0	5	3	15	0	l
2006–07	59	0	0	0	<sup>f</sup> 3	3	14	0	<sup>f</sup> 1
2007–08	63.1	0.0	0.0	0.0	7.1	2.6	14.2	0.3	1.1
2008–09	np	0.0	0.0	0.0	6.1	<sup>f</sup> 3.4	13.0	np	1.1
2009–10	np	0.0	0.0	0.0	17.1	<sup>f</sup> 3.1	14.6	np	<sup>f</sup> 1.3
2010–11	np	0.0	0.0	0.0	14.7	3.0	13.3	0.3	1.2
2011–12	<sup>f</sup> 49.3	0.0	0.0	0.0	12.5	3.3	13.5	0.3	<sup>f</sup> 1.2

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10g** Rural water supply—area of irrigated crops and pastures, by agricultural activity—Northern Territory

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	np	0	0	0	np	2	0	0	0
2003–04	np	0	0	0	np	3	0	0	0
2004–05	np	0	0	0	np	2	0	0	0
2005–06 <b>13</b>	np	0	0	0	0	6	np	0	np
2006–07	np	0	0	0	np	5	1	0	0
2007–08	np	0.0	0.0	0.0	np	<sup>f</sup> 3.1	<sup>f</sup> 1.0	np	<sup>g</sup> 0.3
2008–09	<sup>g</sup> 1.3	0.0	0.0	0.0	0.0	3.6	0.9	0.1	<sup>f</sup> 0.3
2009–10	np	0.0	0.0	0.0	np	3.2	0.7	np	np
2010–11	np	0.0	0.0	0.0	0.0	3.9	1.3	0.1	0.2
2011–12	<sup>f</sup> 0.3	0.0	0.0	0.0	0.0	3.7	1.5	1.5	0.1

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.10h** Rural water supply—area of irrigated crops and pastures, by agricultural activity—Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>'000 hectares</i>									
2002–03	1 377	44	234	238	68	138	116	13	150
2003–04	1 411	65	185	241	89	120	121	<sup>f</sup> 16	149
2004–05	1 387	51	270	213	63	122	114	14	147
2005–06 <b>13</b>	1 445	102	270	210	55	139	114	15	183
2006–07	1 077	<sup>f</sup> 20	134	202	37	141	105	15	178
2007–08	1 095.1	2.1	58.0	187.2	57.7	130.7	113.8	14.2	167.5
2008–09	932.3	<sup>f</sup> 7.2	141.9	191.9	51.8	128.0	104.6	12.9	172.3
2009–10	952.0	18.9	153.2	212.6	59.1	134.2	104.3	13.1	162.6
2010–11	np	75.8	359.3	129.5	61.5	139.0	112.7	12.8	151.9
2011–12	<sup>f</sup> 997.1	<sup>f</sup> 103.1	397.2	166.1	48.8	134.5	105.2	11.9	137.9

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**13, 14** See end notes.

Source: ABS (2013f).

**Table W 3.11a** Rural water supply—volume of irrigation water applied, by agricultural activity—New South Wales<sup>e</sup>

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	np	np	<sup>f</sup> 1 211 732	0	<sup>f</sup> 71 683	151 943	68 960	31 404	140 690
2003–04	np	np	<sup>f</sup> 792 122	<sup>g</sup> 27	<sup>f</sup> 154 582	135 723	<sup>f</sup> 104 528	<sup>f</sup> 38 594	168 133
2004–05	<sup>l</sup> 626 289	np	964 306	np	<sup>f</sup> 94 925	133 561	<sup>f</sup> 68 290	<sup>f</sup> 20 712	<sup>f</sup> 171 629
2005–06 <b>13</b>	<sup>l</sup> 635 232	<sup>l</sup> 240 626	<sup>l</sup> 127 730	<sup>l</sup> 501	95 887	138 815	74 303	24 776	185 320
2006–07	<sup>l</sup> 243 753	<sup>f</sup> 237 214	673 905	np	<sup>f</sup> 53 879	134 564	62 195	<sup>f</sup> 26 362	<sup>f</sup> 171 025
2007–08	<sup>l</sup> 061 431	26 664	204 646	<sup>g</sup> 3 569	<sup>f</sup> 36 704	135 259	48 081	<sup>f</sup> 16 270	135 294
2008–09	907 517	<sup>f</sup> 101 474	465 833	0	<sup>f</sup> 54 100	120 683	61 365	<sup>f</sup> 21 883	<sup>f</sup> 166 923
2009–10	876 999	np	468 843	np	<sup>g</sup> 42 314	116 531	68 552	<sup>f</sup> 18 629	150 649
2010–11	np	758 998	<sup>l</sup> 073 849	3	50 026	188 474	54 450	17 723	106 616
2011–12	<sup>f</sup> 791 054	<sup>l</sup> 131 541	<sup>l</sup> 280 129	0	<sup>f</sup> 40 288	92 966	46 332	9 106	<sup>f</sup> 123 311

**e** Includes the Australian Capital Territory.

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.11b** Rural water supply—volume of irrigation water applied, by agricultural activity—Victoria

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	np	np	0	0	<sup>f</sup> 17 495	172 755	81 928	10 680	205 451
2003–04	np	np	0	0	<sup>f</sup> 14 916	173 567	82 777	9 992	179 359
2004–05	np	np	0	0	<sup>f</sup> 15 367	159 047	78 746	11 262	<sup>f</sup> 198 234
2005–06 <b>13</b>	<sup>l</sup> 953 857	<sup>l</sup> 2 600	0	0	13 808	172 859	91 054	11 216	185 620
2006–07	<sup>l</sup> 151 782	np	0	0	<sup>g</sup> 3 268	190 622	73 213	11 529	<sup>f</sup> 214 835
2007–08	887 000	0	0	0	<sup>g</sup> 21 407	162 430	85 970	<sup>f</sup> 13 289	<sup>f</sup> 152 661
2008–09	775 214	0	0	0	<sup>g</sup> 4 621	159 302	84 726	11 376	<sup>f</sup> 152 588
2009–10	966 519	np	0	0	np	259 716	93 797	11 247	<sup>f</sup> 155 293
2010–11	np	<sup>f</sup> 1 660	0	0	10 217	199 189	59 240	8 671	83 520
2011–12	<sup>f</sup> 1 122 219	np	0	0	<sup>f</sup> 11 935	281 054	74 789	9 100	123 663

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.1 Ic** Rural water supply—volume of irrigation water applied, by agricultural activity—Queensland

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	410 463	0	<sup>f</sup> 313 770	<sup>f</sup> 1 212 802	<sup>f</sup> 32 542	125 713	110 904	14 052	<sup>f</sup> 8 291
2003–04	502 288	0	<sup>f</sup> 456 802	1 141 173	<sup>f</sup> 62 444	128 163	97 564	15 030	<sup>f</sup> 9 599
2004–05	361 713	0	<sup>f</sup> 855 009	1 109 917	<sup>f</sup> 30 026	115 003	102 833	16 123	<sup>f</sup> 7 860
2005–06 <sup>13</sup>	437 840	0	606 761	988 643	29 022	125 564	90 756	23 664	15 107
2006–07	437 901	0	193 757	931 468	<sup>f</sup> 23 826	133 057	86 940	14 501	<sup>f</sup> 5 644
2007–08	600 316	0	104 796	834 414	<sup>g</sup> 44 434	106 655	<sup>f</sup> 112 980	16 110	<sup>f</sup> 4 700
2008–09	558 124	0	414 170	761 086	<sup>f</sup> 50 288	119 060	93 440	15 808	<sup>g</sup> 15 906
2009–10	383 401	np	383 107	np	32 416	122 668	87 576	18 438	<sup>f</sup> 16 279
2010–11	np	2 480	808 195	459 334	26 270	92 216	90 995	12 371	6 539
2011–12	186 485	<sup>g</sup> 1 390	780 650	668 195	<sup>f</sup> 12 065	113 517	74 937	<sup>f</sup> 17 776	6 399

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

Source: ABS (2013f).

**Table W 3.1 Id** Rural water supply—volume of irrigation water applied, by agricultural activity—South Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	444 602	0	0	0	<sup>g</sup> 6 848	145 665	76 256	<sup>g</sup> 6 835	217 496
2003–04	490 300	0	0	0	<sup>g</sup> 5 575	123 033	89 474	<sup>g</sup> 20 413	<sup>f</sup> 228 156
2004–05	435 268	0	0	0	<sup>g</sup> 9 373	143 808	79 905	<sup>g</sup> 5 515	<sup>f</sup> 200 821
2005–06 <sup>13</sup>	445 578	0	0	0	5 743	131 923	79 429	<sup>g</sup> 5 201	227 885
2006–07	509 119	0	0	0	<sup>f</sup> 3 202	130 052	85 945	<sup>f</sup> 3 534	224 606
2007–08	414 272	0	0	0	<sup>f</sup> 52 980	94 390	88 244	2 450	<sup>f</sup> 203 349
2008–09	400 783	0	0	0	<sup>g</sup> 9 094	131 280	88 606	np	<sup>f</sup> 188 369
2009–10	307 517	0	0	0	<sup>g</sup> 3 175	103 372	73 272	<sup>f</sup> 2 880	174 513
2010–11	np	0	0	0	6 287	108 831	79 117	3 057	142 384
2011–12	<sup>g</sup> 216 835	0	0	0	<sup>g</sup> 7 079	120 814	80 335	<sup>f</sup> 2 597	148 512

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).



**Table W 3.11e** Rural water supply—volume of irrigation water applied, by agricultural activity—Western Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	np	0	0	80 298	np	<sup>f</sup> 46 154	64 369	13 491	<sup>f</sup> 12 215
2003–04	np	0	0	69 043	np	<sup>f</sup> 47 720	61 663	10 320	<sup>g</sup> 17 284
2004–05	np	0	0	np	np	<sup>f</sup> 39 124	51 610	11 427	<sup>f</sup> 8 982
2005–06 <b>13</b>	np	0	0	<sup>f</sup> 66 455	<sup>f</sup> 11 685	40 239	50 204	14 556	16 386
2006–07	np	0	0	45 708	16 748	40 838	57 686	14 135	<sup>f</sup> 17 892
2007–08	np	0	0	25 214	<sup>f</sup> 15 218	48 062	47 527	12 541	<sup>f</sup> 17 239
2008–09	np	0	0	0	10 536	47 936	56 300	12 565	<sup>f</sup> 16 060
2009–10	np	0	0	0	20 879	36 519	50 315	<sup>f</sup> 10 783	<sup>f</sup> 14 019
2010–11	np	<sup>g</sup> 3 057	<sup>g</sup> 199	<sup>g</sup> 69	19 933	40 047	54 850	11 297	13 431
2011–12	<sup>g</sup> 84 939	1 035	<sup>g</sup> 8 129	np	12 031	<sup>f</sup> 39 347	57 671	9 939	<sup>f</sup> 10 813

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.11f** Rural water supply—volume of irrigation water applied, by agricultural activity—Tasmania

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	118 275	0	0	0	33 745	<sup>f</sup> 9 542	44 516	<sup>f</sup> 1 161	<sup>f</sup> 1 702
2003–04	137 851	0	0	0	28 678	<sup>f</sup> 8 273	51 872	775	<sup>g</sup> 1 575
2004–05	144 546	0	0	0	17 140	<sup>f</sup> 10 173	51 782	<sup>f</sup> 1 029	<sup>g</sup> 1 600
2005–06 <b>13</b>	np	0	0	0	10 528	4 950	42 931	1 543	1 167
2006–07	183 371	0	0	0	<sup>f</sup> 7 942	6 670	45 420	1 455	<sup>f</sup> 2 492
2007–08	np	0	0	0	np	6 218	43 816	np	<sup>f</sup> 1 356
2008–09	np	0	0	0	16 044	<sup>f</sup> 9 448	44 658	np	<sup>f</sup> 1 177
2009–10	np	0	0	0	34 616	<sup>f</sup> 7 649	44 322	896	np
2010–11	np	0	0	0	25 189	4 415	28 701	756	1 013
2011–12	<sup>f</sup> 112 220	0	0	0	25 794	7 479	35 861	840	<sup>f</sup> 1 423

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.1 Ig** Rural water supply—volume of irrigation water applied, by agricultural activity—Northern Territory

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	np	0	0	0	np	8 121	752	298	2 950
2003–04	np	0	0	0	np	9 333	1 117	259	2 977
2004–05	np	0	0	0	np	7 422	1 226	200	2 819
2005–06 <sup>13</sup>	np	0	0	0	0	15 257	np	531	np
2006–07	np	0	0	0	np	12 639	2 490	583	2 097
2007–08	np	0	0	0	np	<sup>f</sup> 6 910	<sup>f</sup> 4 031	np	<sup>g</sup> 2 191
2008–09	5 513	0	0	0	0	9 825	3 998	397	<sup>f</sup> 2 229
2009–10	np	0	0	0	np	8 208	1 395	610	np
2010–11	np	0	0	0	129	11 478	5 119	461	2 218
2011–12	<sup>f</sup> 2 267	0	0	0	0	11 451	6 239	735	1 502

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.1 Ih** Rural water supply—volume of irrigation water applied, by agricultural activity—Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres</i>									
2002–03	5 022 631	615 375	<sup>f</sup> 1 525 502	<sup>f</sup> 1 293 099	172 184	659 893	447 684	77 920	588 794
2003–04	5 070 729	813 812	1 248 924	1 210 243	<sup>f</sup> 268 343	625 812	488 994	<sup>f</sup> 95 384	607 083
2004–05	4 539 687	618 964	1 819 316	1 171 933	177 339	608 138	434 391	66 267	591 945
2005–06 <sup>13</sup>	4 720 613	1 253 227	1 734 951	1 056 598	166 673	629 639	431 417	81 666	633 183
2006–07	3 627 630	<sup>f</sup> 239 432	867 662	977 611	108 939	648 443	413 889	72 099	638 590
2007–08	3 260 070	26 664	309 442	863 198	185 394	559 924	430 649	62 257	516 790
2008–09	2 915 937	<sup>f</sup> 101 474	880 003	761 086	144 683	597 535	433 093	65 425	543 252
2009–10	2 840 592	246 909	851 950	756 317	<sup>f</sup> 139 292	654 663	419 229	63 483	515 484
2010–11	np	286 156	1 882 243	459 405	138 052	550 422	372 472	54 337	355 719
2011–12	<sup>f</sup> 2 516 018	1 138 287	2 068 908	668 252	109 192	666 627	376 165	50 093	415 622

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12a** Rural water supply—application rate for irrigation water, by agricultural activity—New South Wales<sup>e</sup>

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	np	np	7.0	0.0	2.5	5.1	4.6	7.0	4.2
2003–04	np	np	7.1	0.2	3.6	5.5	4.8	7.3	4.9
2004–05	2.8	np	6.6	np	<sup>f</sup> 3.2	5.2	4.0	5.1	4.7
2005–06 <sup>13</sup>	2.7	12.3	6.7	3.4	3.3	4.7	4.1	5.3	4.3
2006–07	2.8	12.2	6.8	np	2.7	4.0	4.1	5.5	4.2
2007–08	2.8	12.9	5.6	<sup>g</sup> 3.9	2.4	4.6	3.9	5.2	3.8
2008–09	2.8	14.1	6.6	0.0	3.0	4.9	4.6	5.7	4.1
2009–10	2.6	np	5.9	np	<sup>f</sup> 2.0	4.4	4.6	4.8	4.0
2010–11	np	10.1	5.2	3.5	2.2	4.0	3.3	4.2	2.3
2011–12	2.2	11.1	5.4	0.0	2.2	4.0	3.6	3.3	3.7

<sup>e</sup> Includes the Australian Capital Territory.

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12b** Rural water supply—application rate for irrigation water, by agricultural activity—Victoria

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <sup>14</sup>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	np	np	0.0	0.0	2.2	4.5	3.2	4.2	5.8
2003–04	np	np	0.0	0.0	2.3	5.9	3.6	3.3	5.5
2004–05	np	np	0.0	0.0	<sup>f</sup> 1.7	5.3	3.1	3.6	5.5
2005–06 <sup>13</sup>	3.7	12.6	0.0	0.0	2.4	4.9	3.5	3.7	5.0
2006–07	3.5	np	0.0	0.0	1.6	5.5	3.3	3.8	4.9
2007–08	2.8	0.0	0.0	0.0	3.1	4.9	3.1	3.4	3.9
2008–09	2.9	0.0	0.0	0.0	<sup>f</sup> 2.1	4.6	3.4	4.2	4.2
2009–10	3.0	np	0.0	0.0	np	5.7	3.7	3.7	4.1
2010–11	np	6.9	0.0	0.0	1.8	4.3	2.3	2.8	2.8
2011–12	2.6	<sup>f</sup> 5.4	0.0	0.0	<sup>f</sup> 1.7	6.1	3.0	3.1	3.8

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>13, 14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12c** Rural water supply—application rate for irrigation water, by agricultural activity—Queensland

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	2.9	0.0	5.1	5.2	2.9	3.6	3.3	4.1	3.1
2003–04	3.3	0.0	6.3	4.8	2.6	3.9	2.8	4.6	2.9
2004–05	3.0	0.0	6.9	5.3	<sup>f</sup> 2.6	3.7	3.3	4.3	<sup>g</sup> 2.2
2005–06 <b>13</b>	np	0.0	6.0	4.8	2.9	3.4	2.9	5.5	4.9
2006–07	3.1	0.0	5.5	4.7	<sup>f</sup> 2.5	3.6	2.8	4.0	<sup>f</sup> 4.7
2007–08	2.9	0.0	4.9	4.5	2.6	3.0	3.4	<sup>f</sup> 3.7	<sup>f</sup> 3.7
2008–09	3.0	0.0	5.8	4.0	2.4	3.4	3.2	4.0	5.2
2009–10	3.0	np	5.2	np	2.3	3.7	3.0	4.6	np
2010–11	np	6.7	5.0	3.5	1.9	2.6	2.6	3.7	2.4
2011–12	2.3	4.8	4.9	4.0	<sup>f</sup> 1.6	3.3	2.6	<sup>f</sup> 4.7	3.3

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12d** Rural water supply—application rate for irrigation water, by agricultural activity—South Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	5.6	0.0	0.0	0.0	2.5	8.1	5.4	6.5	3.3
2003–04	5.6	0.0	0.0	0.0	2.5	7.1	6.4	9.4	3.6
2004–05	5.3	0.0	0.0	0.0	3.0	7.7	4.7	5.4	3.3
2005–06 <b>13</b>	4.7	0.0	0.0	0.0	np	7.0	5.3	5.0	2.7
2006–07	6.0	0.0	0.0	0.0	<sup>g</sup> 1.6	6.9	6.1	4.3	2.9
2007–08	4.0	0.0	0.0	0.0	6.9	5.7	5.7	3.2	2.6
2008–09	np	0.0	0.0	0.0	<sup>f</sup> 3.0	7.3	6.1	np	2.4
2009–10	4.1	0.0	0.0	0.0	<sup>g</sup> 2.2	6.9	6.2	3.7	2.4
2010–11	np	0.0	0.0	0.0	2.5	6.1	5.7	3.6	2.1
2011–12	2.9	0.0	0.0	0.0	<sup>f</sup> 2.7	7.5	5.4	<sup>f</sup> 3.3	2.5

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12e** Rural water supply—application rate for irrigation water, by agricultural activity—Western Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	np	0.0	0.0	20.3	np	4.9	7.2	8.3	1.2
2003–04	np	0.0	0.0	16.0	np	5.2	6.9	6.4	1.3
2004–05	np	0.0	0.0	np	np	4.1	7.4	<sup>f</sup> 6.7	<sup>f</sup> 1.2
2005–06 <b>13</b>	np	0.0	0.0	<sup>f</sup> 13.9	np	4.2	6.3	7.5	1.3
2006–07	np	0.0	0.0	13.1	14.0	4.7	7.2	7.9	<sup>f</sup> 1.4
2007–08	np	0.0	0.0	11.3	np	4.7	5.1	np	<sup>f</sup> 1.4
2008–09	np	0.0	0.0	0.0	7.4	5.7	6.7	8.7	1.3
2009–10	np	0.0	0.0	0.0	6.9	4.9	6.3	9.3	1.3
2010–11	np	13.9	7.7	12.3	5.3	4.9	5.9	7.5	1.3
2011–12	<sup>g</sup> 5.1	12.4	<sup>f</sup> 9.9	10.0	9.3	5.0	6.1	<sup>f</sup> 8.0	1.1

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12f** Rural water supply—application rate for irrigation water, by agricultural activity—Tasmania

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <b>14</b>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	2.5	0.0	0.0	0.0	2.1	2.4	2.5	3.6	2.0
2003–04	2.8	0.0	0.0	0.0	2.4	2.1	2.7	2.5	1.6
2004–05	2.8	0.0	0.0	0.0	2.2	<sup>f</sup> 2.3	3.0	3.6	1.3
2005–06 <b>13</b>	np	0.0	0.0	0.0	2.1	1.7	2.9	3.9	1.1
2006–07	3.1	0.0	0.0	0.0	<sup>f</sup> 2.7	2.4	3.2	4.2	<sup>f</sup> 2.1
2007–08	np	0.0	0.0	0.0	np	2.4	3.1	np	1.3
2008–09	np	0.0	0.0	0.0	2.6	2.8	3.4	np	1.1
2009–10	np	0.0	0.0	0.0	2.0	2.5	3.0	np	np
2010–11	np	0.0	0.0	0.0	1.7	1.5	2.2	2.3	0.9
2011–12	2.3	0.0	0.0	0.0	2.1	2.3	2.7	3.3	<sup>f</sup> 1.2

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**13, 14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12g** Rural water supply—application rate for irrigation water, by agricultural activity—Northern Territory

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <a href="#">14</a>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	np	0.0	0.0	0.0	np	3.5	3.3	6.5	9.3
2003–04	np	0.0	0.0	0.0	np	3.5	2.6	4.1	7.9
2004–05	np	0.0	0.0	0.0	np	3.0	3.7	2.9	7.7
2005–06 <a href="#">13</a>	np	0.0	0.0	0.0	0.0	2.6	np	5.7	np
2006–07	np	0.0	0.0	0.0	np	2.8	3.6	6.5	8.2
2007–08	np	0.0	0.0	0.0	np	<sup>f</sup> 2.2	<sup>f</sup> 4.0	np	7.0
2008–09	4.3	0.0	0.0	0.0	0.0	2.7	4.2	4.4	8.4
2009–10	np	0.0	0.0	0.0	np	2.6	2.1	np	np
2010–11	np	0.0	0.0	0.0	1.7	1.5	2.2	2.3	0.9
2011–12	8.3	0.0	0.0	0.0	0.0	3.1	4.1	9.5	10.8

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

[13, 14](#) See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2013f).

**Table W 3.12h** Rural water supply—application rate for irrigation water, by agricultural activity—Australia

Financial year	Pasture, cereal and other crops for grazing, hay, silage, grain or seed <a href="#">14</a>	Rice	Cotton	Sugar cane	Other broadacre crops	Fruit trees, nut trees, plantation or berry fruits	Vegetables for human consumption or seed	Nurseries, cut flowers and cultivated turf	Grapevines
<i>megalitres per hectare</i>									
2002–03	3.6	14.1	6.5	5.4	2.5	4.8	3.9	5.8	3.9
2003–04	3.6	12.4	6.7	5.0	3.0	5.2	4.0	6.1	4.1
2004–05	3.3	12.1	6.7	5.5	2.8	5.0	3.8	4.7	4.0
2005–06 <a href="#">13</a>	3.3	12.3	6.4	5.0	3.0	4.5	3.8	5.4	3.5
2006–07	3.4	12.2	6.5	4.9	2.9	4.6	3.9	5.0	3.6
2007–08	3.0	12.9	5.3	4.6	3.2	4.3	3.8	4.4	3.1
2008–09	3.1	14.1	6.2	4.0	2.8	4.7	4.1	5.1	3.2
2009–10	3.0	13.0	5.6	3.6	2.4	4.9	4.0	4.8	3.2
2010–11	np	10.1	5.2	3.5	2.2	4.0	3.3	4.2	2.3
2011–12	2.5	11.0	5.2	4.0	2.2	5.0	3.6	4.2	3.0

[13, 14](#) See end notes.

Source: ABS (2013f).

**Table W 3.13a** Rural water supply—area irrigated, by irrigation method—  
New South Wales<sup>e</sup>

Financial year	Surface	Drip or trickle		Sprinkler				Solid set	Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		
<i>'000 hectares</i>									
2002–03	691	31	f 5	f 15	f 45	f 54	f 55	f 15	g 2
2003–04	659	f 48	f 5	f 13	f 31	f 51	f 58	f 10	f 1
2004–05	678	f 43	f 11	f 10	f 32	f 31	f 63	f 12	g 1
2005–06 <b>I3</b>									
2006–07	421	42	f 8	f 13	25	34	f 68	f 8	g 1
2007–08									
2008–09	308	f 45	f 5	11	f 23	f 37	f 52	f 4	29

**e** Includes the Australian Capital Territory.

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**I3** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13b** Rural water supply—area irrigated, by irrigation method—Victoria

Financial year	Surface	Drip or trickle		Sprinkler				Solid set	Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		
<i>'000 hectares</i>									
2002–03	386	f 42	f 3	18	f 28	f 32	f 40	f 32	g 5
2003–04	433	32	f 7	18	f 21	26	f 41	f 24	g 2
2004–05	442	f 46	f 6	18	f 16	f 23	f 36	f 26	g 1
2005–06 <b>I3</b>									
2006–07	250	f 50	g 7	f 20	f 14	22	f 28	f 21	np
2007–08									
2008–09	f 197	49	g 6	f 22	f 15	f 20	f 43	f 17	f 20

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**I3** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13c Rural water supply—area irrigated, by irrigation method—Queensland**

Financial year	Surface	Drip or trickle		Sprinkler				Other	
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		Solid set
'000 hectares									
2002–03	208	f 29	f 13	24	f 35	154	f 50	f 18	g 5
2003–04	245	28	f 16	24	f 39	158	f 51	13	g 2
2004–05	274	f 29	f 11	20	f 25	122	f 48	f 14	g 2
2005–06 <b>13</b>									
2006–07	193	25	f 10	24	f 19	110	f 43	f 12	g 2
2007–08									
2008–09	263	22	11	28	f 25	f 119	f 62	f 16	f 22

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13d Rural water supply—area irrigated, by irrigation method—South Australia**

Financial year	Surface	Drip or trickle		Sprinkler				Other	
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		Solid set
'000 hectares									
2002–03	f 35	55	0	17	f 4	f 5	44	f 20	f 1
2003–04	f 34	56	g 1	17	f 3	f 4	50	15	g 1
2004–05	f 33	56	g 1	17	f 4	f 5	45	f 14	0
2005–06 <b>13</b>									
2006–07	f 28	75	f 2	15	f 2	f 5	57	f 13	0
2007–08									
2008–09	f 17	80	g 2	14	f 1	g 7	f 60	f 7	f 12

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013f).



**Table W 3.13e** Rural water supply—area irrigated, by irrigation method—Western Australia

Financial year	Surface	Drip or trickle		Sprinkler				Solid set	Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		
'000 hectares									
2002–03	f 17	f 17	f 1	f 5	f 1	np	1	4	np
2003–04	16	f 20	f 1	4	np	np	f 4	5	0
2004–05	14	f 14	f 1	f 4	np	g 3	np	3	0
2005–06	<b>13</b>								
2006–07	f 17	18	1	4	np	g 1	f 4	4	np
2007–08									
2008–09	f 14	f 17	f 1	5	f 1	0	f 6	4	f 4

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13f** Rural water supply—area irrigated, by irrigation method—Tasmania

Financial year	Surface	Drip or trickle		Sprinkler				Solid set	Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines		
'000 hectares									
2002–03	f 6	f 5	0	f 1	f 10	44	19	f 2	g 1
2003–04	np	f 4	0	f 1	13	41	24	f 2	np
2004–05	np	f 4	0	f 1	12	34	27	f 2	np
2005–06	<b>13</b>								
2006–07	np	f 4	0	f 1	f 13	30	28	1	0
2007–08									
2008–09	g 4	3	0	f 2	f 16	30	29	g 2	f 8

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13g Rural water supply—area irrigated, by irrigation method—Northern Territory**

Financial year	Surface	Drip or trickle		Sprinkler					Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines	Solid set	
'000 hectares									
2002–03	0	1	0	2	0	np	1	0	np
2003–04	np	1	1	2	np	np	0	0	np
2004–05	np	1	0	2	np	0	np	0	np
2005–06 <b>13</b>									
2006–07	np	1	<sup>f</sup> 1	3	np	0	0	0	np
2007–08									
2008–09	<sup>g</sup> 1	1	0	3	0	0	1	0	0

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.13h Rural water supply—area irrigated, by irrigation method—Australia**

Financial year	Surface	Drip or trickle		Sprinkler					Other
		Above ground	Sub-surface	Micro-spray	Portable irrigators	Hose irrigators	Large mobile machines	Solid set	
'000 hectares									
2002–03	1 344	180	23	80	123	289	209	91	<sup>f</sup> 14
2003–04	1 393	189	31	80	109	281	229	68	<sup>f</sup> 7
2004–05	1 147	194	<sup>f</sup> 31	71	90	219	220	71	<sup>f</sup> 5
2005–06 <b>13</b>									
2006–07	915	214	29	81	74	202	229	59	<sup>g</sup> 4
2007–08									
2008–09	804	217	26	85	81	214	253	51	95

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**13** See end notes.

Note: Data are not readily available for missing years.

Source: ABS (2013f).

**Table W 3.14a** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—New South Wales<sup>e</sup>

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	218.8	402.4	346.4	848.0	<sup>f</sup> 0.3	251.3	180.8	109.5	222.0
2001–02	287.2	569.7	323.1	<sup>f</sup> 918.1	0.0	281.0	175.7	<sup>f</sup> 116.3	271.3
2002–03	<sup>f</sup> 263.6	np	np	<sup>f</sup> 658.7	0.0	329.8	156.4	<sup>f</sup> 107.1	196.9
2003–04	249.1	np	np	<sup>f</sup> 383.7	np	301.7	227.3	<sup>f</sup> 133.2	287.8
2004–05	268.0	np	np	<sup>f</sup> 514.4	np	328.3	<sup>f</sup> 215.7	142.5	255.2
2005–06	276.0	np	270.9	548.0	<sup>f</sup> 1.1	350.0	310.3	291.3	246.9
2006–07	264.0	np	<sup>f</sup> 54.3	371.9	np	417.4	350.4	303.8	217.7
2007–08	298.7	np	7.3	142.8	np	368.8	346.2	<sup>f</sup> 220.0	324.0
2008–09	386.5	399.4	<sup>f</sup> 34.5	309.6	0.0	333.9	252.1	<sup>f</sup> 241.8	223.2
2009–10	<sup>f</sup> 340.9	np	88.9	393.8	np	288.6	286.1	240.8	163.5
2010–11	292.5	<sup>f</sup> 452.8	171.9	927.6	<sup>f</sup> 0.1	313.8	348.7	233.2	162.8

**e** Includes the Australian Capital Territory.

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14b** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Victoria

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	945.7	409.9	3.8	0.0	0.0	381.0	398.8	142.6	319.6
2001–02	<sup>l</sup> 143.3	460.8	<sup>g</sup> 3.7	0.0	0.0	419.2	376.1	164.4	368.1
2002–03	844.8	np	np	0.0	0.0	475.2	330.7	144.7	306.2
2003–04	932.8	np	np	0.0	0.0	514.4	350.0	188.5	346.4
2004–05	<sup>l</sup> 115.5	np	np	0.0	0.0	<sup>f</sup> 577.8	375.6	208.1	356.3
2005–06	<sup>l</sup> 134.7	np	2.8	0.0	0.0	611.3	505.8	315.1	320.5
2006–07	938.8	np	np	0.0	0.0	<sup>f</sup> 741.9	570.9	<sup>f</sup> 369.8	<sup>f</sup> 272.6
2007–08	<sup>l</sup> 363.8	np	0.0	0.0	0.0	636.6	662.2	<sup>f</sup> 396.9	374.3
2008–09	<sup>l</sup> 159.1	np	0.0	0.0	0.0	719.2	543.4	<sup>f</sup> 250.1	<sup>f</sup> 355.4
2009–10	<sup>f</sup> 906.5	412.5	<sup>g</sup> 0.1	0.0	0.0	732.0	511.2	323.8	<sup>f</sup> 367.4
2010–11	<sup>l</sup> 266.8	465.4	0.6	0.0	0.0	<sup>l</sup> 025.8	573.1	272.1	277.0

**f** Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

**g** Estimate has a relative standard error of 25% to 50% and should be used with caution.

**14** See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14c** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Queensland

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	138.3	292.5	np	np	301.5	411.6	486.7	156.4	13.0
2001–02	147.6	321.1	0.0	<sup>f</sup> 364.4	465.6	528.7	475.8	109.6	<sup>f</sup> 20.1
2002–03	<sup>f</sup> 125.7	334.4	0.0	<sup>f</sup> 175.6	398.6	481.8	502.4	105.6	<sup>f</sup> 13.3
2003–04	<sup>f</sup> 141.1	492.9	0.0	<sup>f</sup> 274.4	398.0	530.3	695.6	137.2	<sup>f</sup> 16.0
2004–05	<sup>f</sup> 110.4	358.0	0.0	<sup>f</sup> 393.7	455.0	548.9	554.3	153.8	<sup>f</sup> 18.4
2005–06	131.2	np	0.0	321.8	490.3	643.7	815.0	265.5	29.6
2006–07	130.5	np	0.0	114.0	570.9	1129.7	935.3	247.6	<sup>f</sup> 44.7
2007–08	<sup>f</sup> 143.6	np	0.0	65.4	446.7	<sup>f</sup> 802.1	904.3	<sup>f</sup> 308.0	30.9
2008–09	<sup>f</sup> 193.9	370.3	0.0	310.7	537.1	734.8	831.1	254.1	<sup>f</sup> 23.3
2009–10	<sup>f</sup> 177.6	299.9	0.9	270.5	np	699.8	721.2	261.2	<sup>f</sup> 31.0
2010–11	134.5	<sup>f</sup> 191.7	0.6	638.5	374.1	636.2	981.9	216.2	31.6

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14d** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Western Australia

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	36.3	np	np	np	6.6	100.0	169.4	73.8	81.2
2001–02	<sup>f</sup> 35.4	np	0.0	np	5.9	101.1	160.0	65.6	<sup>f</sup> 61.5
2002–03	np	np	0.0	0.0	8.3	105.2	159.8	62.2	<sup>f</sup> 81.9
2003–04	np	np	0.0	0.0	7.2	119.6	177.2	72.8	<sup>g</sup> 114.8
2004–05	np	np	0.0	0.0	np	<sup>f</sup> 128.6	155.8	<sup>f</sup> 86.1	<sup>f</sup> 95.5
2005–06	48.7	np	0.0	0.0	<sup>f</sup> 5.6	150.3	244.5	172.4	79.1
2006–07	np	np	np	np	np	153.8	234.6	166.4	<sup>f</sup> 90.8
2007–08	64.4	np	0.0	0.0	3.6	161.5	315.0	np	110.7
2008–09	0.0	np	0.0	0.0	0.0	194.3	297.3	155.1	78.6
2009–10	<sup>f</sup> 64.6	np	0.0	0.0	0.0	150.0	253.4	132.9	<sup>g</sup> 109.3
2010–11	100.1	<sup>g</sup> 56.3	<sup>g</sup> 0.5	<sup>g</sup> 0.1	<sup>g</sup> 0.0	165.9	286.3	103.8	92.1

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14e** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—South Australia

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	137.4	90.2	0.0	0.0	0.0	236.2	251.2	35.9	663.9
2001–02	138.8	119.4	0.0	0.0	0.0	240.1	251.7	35.7	639.8
2002–03	<sup>f</sup> 139.4	129.6	0.0	0.0	0.0	216.5	232.3	<sup>f</sup> 34.4	527.1
2003–04	144.4	143.9	0.0	0.0	0.0	238.8	246.4	37.5	696.1
2004–05	<sup>f</sup> 140.6	121.3	0.0	0.0	0.0	277.5	280.8	40.4	614.5
2005–06	154.5	np	0.0	0.0	0.0	304.7	374.9	70.9	556.3
2006–07	<sup>f</sup> 152.6	np	0.0	0.0	0.0	361.8	404.7	58.0	398.3
2007–08	<sup>f</sup> 195.0	np	0.0	0.0	0.0	224.3	519.1	60.1	728.8
2008–09	<sup>f</sup> 184.9	np	0.0	0.0	0.0	307.3	455.9	<sup>f</sup> 40.5	502.9
2009–10	<sup>f</sup> 140.8	141.8	0.0	0.0	0.0	260.0	392.9	48.6	376.0
2010–11	135.5	160.6	0.0	0.0	0.0	263.9	476.6	46.2	346.5

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14f** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Tasmania

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	77.0	74.0	0.0	0.0	0.0	44.5	137.3	11.5	7.2
2001–02	135.6	89.9	0.0	0.0	0.0	<sup>f</sup> 48.8	152.8	9.5	<sup>f</sup> 5.5
2002–03	81.7	109.5	0.0	0.0	0.0	<sup>f</sup> 54.0	149.9	10.4	8.3
2003–04	109.2	105.9	0.0	0.0	0.0	<sup>f</sup> 51.4	158.0	12.3	<sup>g</sup> 15.0
2004–05	126.8	108.2	0.0	0.0	0.0	<sup>f</sup> 56.3	155.0	13.1	<sup>g</sup> 13.3
2005–06	132.7	np	0.0	0.0	0.0	41.4	188.9	39.3	10.2
2006–07	162.5	np	0.0	0.0	0.0	56.5	167.6	33.3	10.5
2007–08	<sup>f</sup> 223.3	np	0.0	0.0	0.0	64.1	210.6	np	22.5
2008–09	254.2	np	0.0	0.0	0.0	<sup>f</sup> 74.5	217.3	<sup>f</sup> 27.3	<sup>f</sup> 13.7
2009–10	195.2	161.8	0.0	0.0	0.0	72.8	201.8	21.0	<sup>f</sup> 18.1
2010–11	213.9	120.0	0.0	0.0	0.0	79.6	170.4	27.3	14.8

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>g</sup> Estimate has a relative standard error of 25% to 50% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14g** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Northern Territory

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	np	np	np	0.0	0.0	np	1.4	3.3	np
2001–02	np	np	0.0	0.0	0.0	np	1.2	np	np
2002–03	np	np	0.0	0.0	0.0	np	1.1	np	np
2003–04	np	np	0.0	0.0	0.0	np	2.2	3.5	5.7
2004–05	np	np	0.0	0.0	0.0	np	np	4.0	8.1
2005–06	np	np	0.0	0.0	0.0	35.7	np	<sup>f</sup> 8.5	np
2006–07	np	np	0.0	0.0	0.0	52.0	np	6.1	np
2007–08	0.0	np	0.0	0.0	0.0	<sup>f</sup> 34.4	14.3	np	5.4
2008–09	np	np	0.0	0.0	0.0	np	np	<sup>f</sup> 10.3	<sup>f</sup> 3.2
2009–10	0.0	np	0.0	0.0	0.0	39.1	np	5.8	np
2010–11	0.0	<sup>f</sup> 3.7	0.0	0.0	0.0	37.6	40.6	6.6	3.8

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

**Table W 3.14h** Gross value of irrigated agricultural production, by agricultural activity, experimental estimates—Australia

Financial year	Dairy Farming	Livestock, pasture, grains & other <sup>14</sup>	Rice	Cotton	Sugar	Fruit	Vegetables	Nurseries, cut flowers & turf	Grapes
<i>\$ million</i>									
2000–01	1 553.9	1 300.0	350.3	1 220.5	308.3	1 454.6	1 625.5	536.5	1 319.6
2001–02	1 891.2	1 591.1	326.8	1 283.1	471.5	1 644.1	1 593.2	505.3	1 384.1
2002–03	1 505.5	1 598.1	152.5	<sup>f</sup> 834.3	406.9	1 682.6	1 532.7	467.9	1 142.7
2003–04	1 627.4	1 858.6	179.8	658.1	405.5	1 779.2	1 856.8	588.0	1 482.2
2004–05	1 802.5	1 596.2	100.6	<sup>f</sup> 908.1	459.9	1 948.8	1 741.3	651.0	1 361.9
2005–06	1 877.7	np	273.7	869.8	496.9	2 137.2	2 453.2	1 165.9	1 251.5
2006–07	1 697.1	np	<sup>f</sup> 55.0	485.8	583.1	2 913.2	2 677.9	1 187.4	1 040.5
2007–08	2 288.8	np	7.3	208.1	451.6	2 291.9	2 971.9	1 171.8	1 597.2
2008–09	2 273.8	1 289.3	<sup>f</sup> 34.5	620.3	537.1	2 389.6	2 624.9	982.8	1 200.4
2009–10	1 825.6	1 420.4	89.9	664.3	750.4	2 242.3	2 385.8	1 036.5	1 069.5
2010–11	2 143.3	1 450.6	173.6	1 566.2	374.2	2 522.9	2 878.1	908.6	928.6

<sup>f</sup> Estimate has a relative standard error of 10% to less than 25% and should be used with caution.

<sup>14</sup> See end notes.

np Not available for publication, but included in totals where applicable, unless otherwise indicated.

Source: ABS (2012h).

# CHAPTER 4

## Health and emissions

**Table W 4.1** Water quality—percentage of population in zones where compliance with microbiological standards was achieved, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
2005–06	97.4	99.8	91.9	100.0	100.0		100.0	100.0
2006–07	98.9	99.8	92.1	100.0	100.0		100.0	100.0
2007–08	99.6	100.0	91.6	100.0	100.0		100.0	100.0
2008–09	100.0	100.0	90.5	100.0	100.0		100.0	100.0
2009–10	100.0	100.0	94.5	100.0	100.0		100.0	100.0
2010–11	100.0	99.9	94.6	100.0	100.0		100.0	100.0
2011–12	100.0	100.0	97.3	100.0	100.0		100.0	100.0

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.2a** Water quality—number of urban zones where microbiological compliance was achieved, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	92	443	149	8	42		5	4
2006–07	95	470	149	8	42		7	4
2007–08	92	473	148	8	42	0	9	4
2008–09	104	469	148	8	41		3	4
2009–10	100	473	220	8	36	63	3	4
2010–11	98	472	193	8	36	64	3	4
2011–12	103	425	169	8	36	72	3	4

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 4.2b** Water quality—number of urban zones where microbiological compliance was measured, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
2005–06	107	459	157	8	42		7	4
2006–07	106	474	157	8	42		7	4
2007–08	104	475	157	8	42	0	9	4
2008–09	109	471	158	8	41		3	4
2009–10	104	473	223	8	36	96	3	4
2010–11	102	475	205	8	36	100	3	4
2011–12	104	427	171	8	36	99	3	4

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 4.2c** Water quality—percentage of urban zones where microbiological compliance achieved, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS I	NT	ACT
				<i>per cent</i>				
2005–06	86.0	96.5	94.9	100.0	100.0		71.4	100.0
2006–07	89.6	99.2	94.9	100.0	100.0		100.0	100.0
2007–08	88.5	99.6	94.3	100.0	100.0		100.0	100.0
2008–09	95.4	99.6	93.7	100.0	100.0		100.0	100.0
2009–10	96.2	100.0	98.7	100.0	100.0	65.6	100.0	100.0
2010–11	96.1	99.4	94.1	100.0	100.0	64.0	100.0	100.0
2011–12	99.0	99.5	98.8	100.0	100.0	72.7	100.0	100.0

I See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC (2013c).

**Table W 4.3a** Water quality—number of urban zones where chemical compliance was achieved, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
2005–06	88	390	111	8	42		4	4
2006–07	85	429	111	7	42		4	4
2007–08	91	398	110	7	42		2	4
2008–09	100	422	106	7	41		1	4
2009–10	91	433	161	8	36	89	3	3
2010–11	97	426	169	7	36	92	3	4
2011–12	102	418	138	5	36	90	3	4

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.3b** Water quality—number of urban zones where chemical compliance was measured, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
2005–06	105	420	131	8	42		4	4
2006–07	104	467	131	8	42		7	4
2007–08	102	434	131	8	42		9	4
2008–09	108	463	134	8	41		3	4
2009–10	104	466	186	8	36	93	3	4
2010–11	102	475	185	8	36	100	3	4
2011–12	104	427	151	8	36	99	3	4

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).



**Table W 4.3c** Water quality—percentage of urban zones where chemical compliance achieved, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
				(per cent)				
2005–06	83.8	92.9	84.7	100.0	100.0		100.0	100.0
2006–07	81.7	91.9	84.7	87.5	100.0		57.1	100.0
2007–08	89.2	91.7	84.0	87.5	100.0		22.2	100.0
2008–09	92.6	91.1	79.1	87.5	100.0		33.3	100.0
2009–10	87.5	92.9	86.6	100.0	100.0	95.7	100.0	75.0
2010–11	95.1	89.7	91.4	87.5	100.0	92.0	100.0	100.0
2011–12	98.1	97.9	91.4	62.5	100.0	90.9	100.0	100.0

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.4** Environmental pollution—sewer overflows to the environment per 100 kilometres of main, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS <sup>l</sup>	NT	ACT
2005–06	59.9	14.1	7.1	12.9	8.5		5.3	77.0
2006–07	65.2	16.0	6.3	18.5	10.3		5.1	82.0
2007–08	46.9	14.1	3.8	22.3	9.3		5.1	80.0
2008–09 <sup>h</sup>	0.7	0.4	3.1	0.5	0.5		0.7	9.0
2009–10	0.8	0.5	3.6	0.4	1.0		0.3	8.5
2010–11	0.5	0.5	3.8	0.7	0.2		0.7	3.1
2011–12	0.9	0.4	3.6	0.5	0.2		4.3	1.9

<sup>h</sup> Prior to 2008–09, data are provided for all sewer overflows to the environment. From 2008–09 onwards, statistics relate only to sewer overflows reported to the environmental regulator.

<sup>l</sup> See end notes.

Note: Data are not readily available for missing years.

Source: OTER (2009), BITRE estimates based on NWC et al. (2013c).

**Table W 4.5a** Urban water supply emissions—greenhouse gas (carbon dioxide equivalent) emissions from urban water supply, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>tonnes of CO<sub>2</sub> equivalent</i>							
2005–06	329 856	162 964	77 424	133 748	218 648		14 873	14 819
2006–07	321 156	161 119	69 892	192 187	225 326		15 594	19 471
2007–08	287 485	176 277	75 734	219 391	326 490		15 755	24 393
2008–09	257 386	195 074	65 952	240 942	287 938		16 378	26 898
2009–10	273 154	184 307	123 826	105 267	282 067		16 626	20 211
2010–11	252 741	103 405	148 517	96 986	315 360		13 413	6 683
2011–12	261 078	196 807	227 932	305 958	374 753		15 281	5 281

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.5b** Urban water supply emissions—greenhouse gas (carbon dioxide equivalent) emissions from sewerage, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>tonnes of CO<sub>2</sub> equivalent</i>							
2005–06	383 828	272 988	213 465	51 627	124 143		2 596	12 926
2006–07	392 723	285 570	207 490	79 484	136 143		2 142	16 985
2007–08	393 897	272 087	223 782	93 137	145 105		2 077	21 432
2008–09	497 405	273 797	415 182	89 768	155 109		1 919	34 425
2009–10	500 372	274 317	683 300	57 668	158 876		2 304	31 658
2010–11	539 674	293 403	685 708	75 125	167 191		2 292	32 985
2011–12	488 367	615 457	735 785	96 523	165 184		2 824	33 471

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.5c** Urban water supply emissions—greenhouse gas (carbon dioxide equivalent) emissions from other activities, by state/territory

Financial year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	<i>tonnes of CO<sub>2</sub> equivalent</i>							
2005–06	146 156	5 384	476 509	137 535	12 117		16 478	2 741
2006–07	148 162	5 462	477 948	221 340	12 404		17 066	3 602
2007–08	46 050	6 542	476 847	263 302	14 758		17 084	4 512
2008–09	-73 270	28 741	1 095 589	8 368	13 081		723	4 269
2009–10	-131 995	12 411	22 440	8 483	13 340		621	9 680
2010–11	-197 393	13 804	19 867	576	12 871		760	14 619
2011–12	-253 513	-19 554	32 920	1 173	13 148		795	9 488

Note: Data are not readily available for missing years.

Source: BITRE estimates based on NWC (2013c).

**Table W 4.6** Rural water supply emissions—greenhouse gas (carbon dioxide equivalent) emissions from rural water supply, by state/territory

Financial year	New South Wales	Victoria	Queensland	South Australia	Western Australia
	<i>tonnes of CO<sub>2</sub> equivalent</i>				
2006–07	6 689	29 324	59 178	18 828	0
2007–08	6 621	29 386	38 212	15 343	595
2008–09	6 082	29 631	37 126	13 717	355
2009–10	5 659	22 695	50 682	11 796	602
2010–11	4 654	12 854	16 352	9 466	1 265
2011–12	5 481	35 511	16 352	17 260	1 225

Source: BITRE estimates based on NWC (2013b)..

**Table W 4.7a** Water emissions—wastewater handling greenhouse gas (carbon dioxide equivalent) net emissions, by state or territory—from industrial wastewater

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT
			<i>gigagrams of CO<sub>2</sub> equivalent</i>				
1990	538.4	581.3	464.6	198.7	142.9	62.3	3.2
1991	527.4	572.1	451.0	193.2	139.5	60.2	3.1
1992	510.7	557.5	433.1	186.2	134.7	57.7	3.1
1993	488.0	537.9	415.0	177.6	128.6	54.9	2.9
1994	471.4	525.9	399.2	170.4	123.8	52.3	2.9
1995	438.7	493.7	373.4	157.9	114.8	48.2	2.7
1996	401.7	459.0	343.5	143.9	104.8	43.7	2.5
1997	380.8	442.0	320.3	133.2	98.3	39.5	2.4
1998	356.2	418.8	302.3	124.4	91.7	36.7	2.2
1999	339.1	405.9	287.0	117.6	87.0	34.5	2.2
2000	324.2	393.8	277.9	112.8	83.2	33.1	2.1
2001	357.8	425.2	306.6	129.3	92.6	37.9	2.2
2002	339.4	410.8	290.9	129.2	87.3	35.3	2.1
2003	306.5	372.3	265.7	118.2	78.3	31.0	1.9
2004	311.4	375.9	269.4	120.9	79.5	31.5	2.0
2005	312.1	376.7	269.1	122.5	79.7	31.6	2.0
2006	313.4	378.2	263.0	122.4	79.9	31.5	2.0
2007	319.3	381.4	267.7	120.9	81.5	32.1	2.0
2008	318.0	378.0	267.1	123.6	81.1	32.0	2.0
2009	325.5	352.7	306.1	103.5	77.5	27.3	1.8
2010	307.6	304.6	296.5	91.0	71.0	24.3	1.7
2011	352.0	265.2	271.1	80.6	63.3	19.8	1.4

Source: DCCEE (2013).

**Table W 4.7b** Water emissions—wastewater handling greenhouse gas (carbon dioxide equivalent) net emissions, by state or territory—from domestic and commercial wastewater, sewered population

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT
			<i>gigagrams of CO<sub>2</sub> equivalent</i>				
1990	454.8	584.0	212.7	78.4	197.4	63.6	16.5
1991	458.2	599.0	216.3	77.6	195.2	64.5	16.4
1992	462.3	612.0	219.9	76.6	192.3	65.0	16.2
1993	465.2	623.8	224.0	75.4	188.9	65.4	16.6
1994	465.0	631.9	227.3	73.4	184.7	65.4	16.3
1995	465.9	641.3	230.2	71.4	181.2	65.3	16.3
1996	472.0	656.2	235.3	70.3	179.0	65.6	16.2
1997	481.9	674.2	241.5	70.3	177.6	66.0	16.2
1998	486.2	688.5	244.5	69.2	174.3	65.9	16.0
1999	490.5	695.3	247.8	70.0	176.9	65.7	16.6
2000	496.6	384.3	251.4	70.3	179.3	65.6	16.8
2001	502.9	389.1	255.4	70.4	181.5	65.5	17.0
2002	509.6	393.8	260.9	71.1	162.4	65.5	17.1
2003	513.4	398.6	267.8	71.5	152.7	65.9	17.2
2004	516.9	403.3	273.9	71.9	155.5	66.6	17.1
2005	520.4	407.3	279.1	72.2	157.6	67.0	17.3
2006	523.2	415.7	289.3	73.0	161.9	67.7	17.9
2007	529.9	422.8	296.3	73.6	165.9	68.1	18.3
2008	549.7	441.9	298.0	75.5	166.3	68.7	18.7
2009	564.4	433.1	323.1	47.4	153.1	68.3	18.7
2010	572.8	475.9	284.5	33.7	198.6	67.2	17.1
2011	607.4	390.2	277.2	53.6	136.2	67.5	18.4

Source: DCCEE (2013).

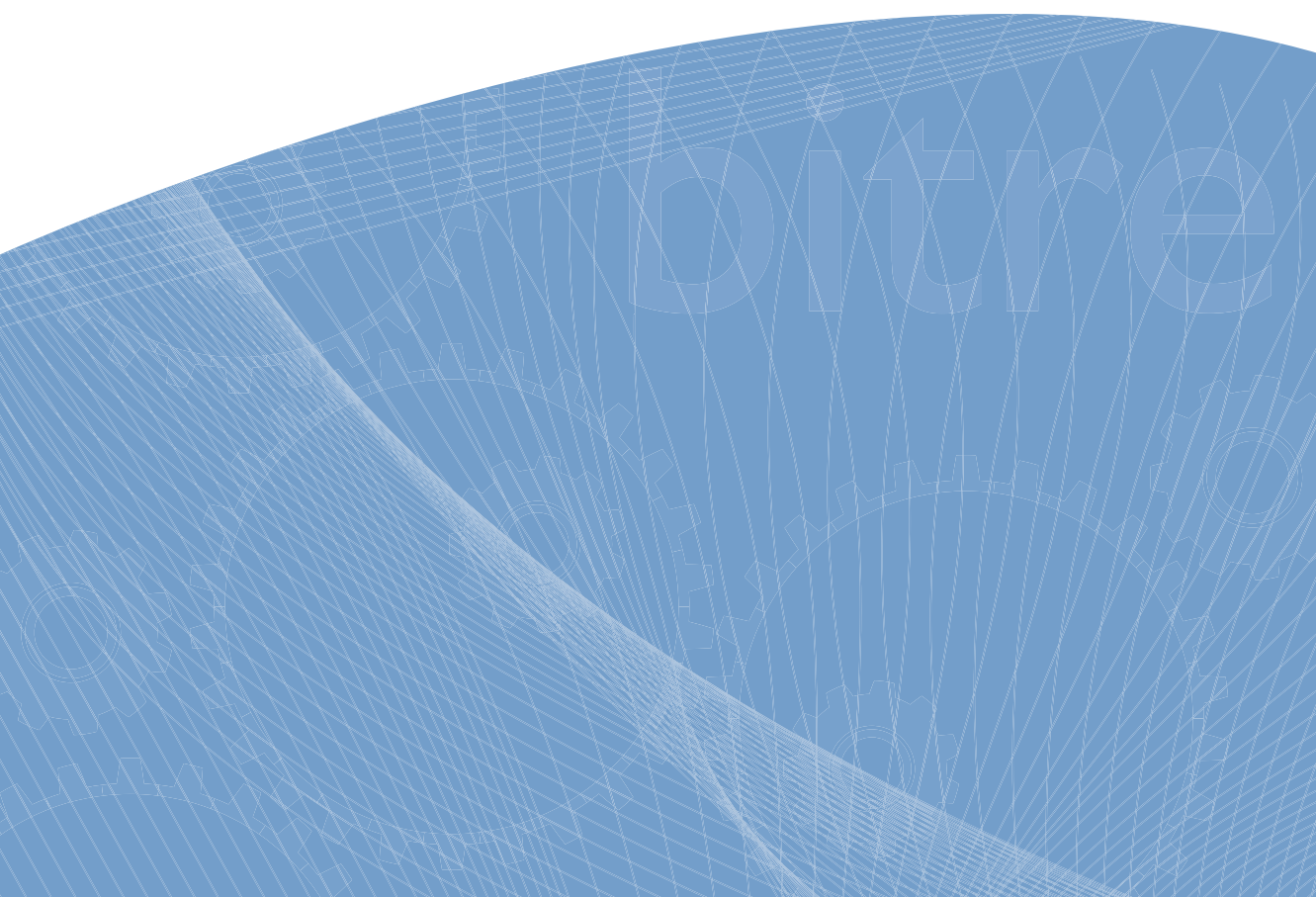
**Table W 4.7c** Water emissions—wastewater handling greenhouse gas (carbon dioxide equivalent) net emissions, by state or territory—from domestic and commercial wastewater, unsewered population

Calendar year	NSW	VIC	QLD	SA	WA	TAS	NT
			<i>gigagrams of CO<sub>2</sub> equivalent</i>				
1990	13.4	49.8	26.9	12.1	26.7	4.7	2.6
1991	12.9	46.0	24.1	10.8	24.3	4.8	2.3
1992	12.4	42.1	21.1	9.5	21.8	4.8	2.0
1993	11.8	37.9	18.0	8.0	19.2	4.9	1.7
1994	11.3	33.6	14.8	6.6	16.5	4.9	1.4
1995	10.7	29.4	11.4	5.2	13.8	4.9	1.1
1996	10.1	25.2	7.8	3.7	11.1	4.9	0.7
1997	9.6	20.9	4.0	2.3	8.2	4.9	0.4
1998	8.9	16.5		0.8	5.2	4.9	
1999	8.9	16.4		1.3	5.2	4.9	0.3
2000	9.2	16.3	6.9	1.4	5.4	4.9	0.3
2001	9.4	13.8	6.6	1.4	5.4	4.9	0.4
2002	9.8	12.5	7.8	1.9	5.5	4.9	0.5
2003	9.8	12.6	7.7	2.0	5.6	4.9	0.6
2004	9.7	12.6	7.9	2.1	5.7	5.0	0.5
2005	9.7	12.7	8.0	2.1	5.8	5.0	0.6
2006	9.8	13.0	8.4	2.2	6.0	5.1	0.6
2007	9.9	13.3	8.6	2.2	6.2	5.1	0.6
2008	10.1	13.6	8.8	2.2	6.4	5.1	0.6
2009	10.3	13.9	9.1	2.3	6.6	5.2	0.6
2010	10.4	14.1	9.3	2.3	6.7	5.2	0.6
2011	10.4	14.1	9.1	2.3	6.9	5.3	0.6

Note: For years where data are missing, emissions are either not estimated, included elsewhere or are not occurring.

Source: DCCEE (2013).

## End notes and definitions





# End notes and definitions

This publication presents annual estimates of activity related to major Australian economic infrastructure (transport, energy, communication and water infrastructure). These estimates were compiled from a range of sources. Where possible, statistics are presented on a financial year basis (year ended 30 June). Throughout this publication, “See end notes” are numbered consecutively within each part. To avoid duplication, an end note will be explained under the heading of the table in which it first occurs.

## Part I Infrastructure and the economy

Industry statistics provided in this publication are based on the Australian and New Zealand Standard Industrial Classification (ANZSIC) (ABS 2008). Industry classification is allocated to businesses based on each business' predominant activity. As such, there is a distinct difference between industry statistics and activity statistics. For example, road transport gross value added is a measure of the economic production of Australian businesses for which the provision of road transport services is the major activity. Road transportation services provided by businesses classified to other industries (e.g. delivery services provided by the retail industry) are not included in these estimates and conversely, non-transportation activities undertaken by businesses classified to the road transport industry are included in these estimates.

### Table I 1.1

Gross value added is the value of output at basic prices minus the value of intermediate consumption at purchasers' prices. The term is used to describe gross product by industry and by sector.

1. Changes to current price production measures may be due to either price or volume changes. Chain volume measures are provided to allow analysis of variations in production volumes; however, component chain volume measures do not sum to a total in the way original current price components do.
2. Gross value added at basic values represents the amounts received by producers, including the value of any subsidies on products, but before any taxes on products. The difference between the sum over all industries of gross value added at basic prices and GDP at market (or purchasers') prices is the value of taxes less subsidies on products.
3. The rail, pipeline and other transport industry includes water transport.

### Table I 1.2

Table I 1.2 provides estimates for total employment by major infrastructure industries in August each year, including both full-time and part-time employment.

4. From 1986, the definition of employed persons was changed to include persons who worked without pay between 1 and 14 hours per week in a family business or on a farm (i.e. contributing family workers).

### Table I 1.3

Average weekly earnings statistics provide an estimate of the average weekly income of wage and salary earners in key infrastructure industries. The estimates reflect the overall level of earnings of employees and the changes in the composition of the infrastructure industries' workforce (e.g. changes to the proportions of full-time, part-time and casual employees and changes to the proportions of occupations over time).

ABS compiles average weekly earnings statistics on a quarterly basis in the Survey of Average Weekly Earnings and on a bi-annual basis in more detail in the Survey of Employee Earnings and Hours. The Australian Infrastructure Statistics Yearbook provides data sourced from the Survey of Employee Earnings and Hours as the Survey of Average Weekly Earnings does not provide adequate industry detail.

5. Estimates of average weekly earnings in Table I 1.3 exclude amounts salary sacrificed (the collection of salary sacrifice amounts are a relatively recent addition to the survey). Average weekly earnings represent gross earnings (before tax, superannuation and other items are deducted).
6. Caution should be exercised when comparing data across years. The Survey of Employee Earnings and Hours is not designed as a times series. In addition, The industry classification used in compiling average weekly earnings statistics changed in 2008. Earlier industry estimates were based on the 1993 version of ANZSIC, while the 2008 estimate was compiled based on an updated (2006) version of ANZSIC.

Estimates are compiled from a sample survey of employers and are subject to sampling variability. That is, they may differ from the estimates that would have been produced if the information had been obtained from all employers. A measure of sampling error is calculated (standard error), which indicates the degree to which an estimate may vary from the value which would have been obtained from a census of all employers. There are about two chances in three that a sample estimate differs from the true value by less than one standard error and about nineteen chances in twenty that the difference will be less than two standard errors.

An example of the use of a relative standard error (standard error expressed as a percentage of the estimate) is as follows. If the estimate for average earnings is \$500 with a relative standard error of 1 per cent then there would be about two chances in three that a full enumeration would have given an estimate in the range \$495 to \$505 and about nineteen chances in twenty that it would be in the range \$490 to \$510.

Table I 1.3 includes a number of estimates that are subject to high relative standard errors (greater than 25 per cent).

### Table I 1.4

The indexes provided in Table I 1.4 relate to the prices received by businesses classified to major infrastructure industries. For the transport industry, indexes are only available for freight



transport and storage services. Indexes for prices received by businesses providing passenger transport services are not currently available from the ABS.

Index numbers for financial years are simple averages of the four relevant quarterly index numbers.

### Table I 1.5

State and territory population estimates are classified by capital city and rest of state on the last day of the financial year (30 June). Population estimates are based on census counts for census years, and are derived and updated by adding estimates of natural increase and net overseas migration. After each census, population estimates are revised to remove discrepancies between census outcomes.

7. ACT capital city data include Queanbeyan (NSW) for the period 1971 to 1990. The rest of state estimate for ACT is shown as na for this period.
8. Excludes Jervis Bay Territory from June 1994.
9. Data for 1991 to 1995 are based on 2001 Australian Standard Geographical Classification boundaries.
10. Data for 1995–96 to 2010–11 Australian Standard Geographical Classification (ASGC) boundaries.
11. In June 2011 the ABS replaced the nation's official statistical geography, the ASGC with the new Australian Statistical Geography Standard (ASGS).
12. Rest of state estimates are calculated by subtracting the capital city population from the corresponding state/territory total population.

### Table I 1.6

Table I 1.6 provides a number of measures of economic activity that may influence Australian infrastructure activity. Goods exports and goods imports figures provide measures of the flow of physical goods into and out of Australia, over the full financial year. The consumer price index provides a measure of annual changes in the price of consumer goods for the June quarter of each financial year; while exchange rate and interest rate data were measured in respect of the last day of the financial year (30 June).

13. The exchange rate data provided represent the \$US value of one Australian dollar.
14. The interest rate provided is the 90 day bank accepted bill rate at the close of trading at the end of the financial year (30 June).

### Table I 2.1

Table I 2.1 provides estimates of engineering construction work done on major economic infrastructure by both private and public sector organisations. Estimates exclude the cost of land; the cost of repair and maintenance activity; the construction of buildings; the value of transfers of existing assets; the value of installed machinery and equipment not integral to the structure; and expenses for relocation of utility services.

Statistics are provided for the sector providing engineering construction services and the sector that is expected to own the project at the time of completion. Thus, statistics for work done by the private sector for the public sector summarise the work done by private sector engineering construction companies on projects that are owned by the public sector at the time of completion. When a project is undertaken as a Private Public Partnership (PPP) or similar arrangement, it is classified according to the expected ownership of the project at completion. PPPs may be classified as private sector even if ownership eventually resides with the public sector.

ABS provides both current price and chain volume measures for the value of engineering construction work done by the private sector for the private sector; by the private sector for the public sector; and by the public sector. Deflators for these chain volume measures were calculated by BITRE and applied to estimates for transport construction to create approximate volume adjusted estimates for transport engineering construction.

## Part T Transport infrastructure

### Table T 1.1

Table T 1.1 provides estimates of engineering construction work done on transport infrastructure, providing transport detail to the data provided in Table I 2.1. Estimates for the construction of airport runways are included in the roads and bridges measure.

### Table T 1.2

BITRE regularly prepares estimates of road expenditure sourced from unpublished ABS Government Finance Statistics (GFS) and internal Department of Infrastructure and Regional Development data. There have been a number of methodological changes in the compilation of estimates over time, with the most significant being the ABS adoption of accrual-based accounting for GFS in 1998–99. In addition, data are subject to revision as non-road related expenditures are identified. Estimates include private road related expenditure from 1998–99 onwards.

Data provided are estimates of expenditure on roads by each level of government from their own sources rather than the total expenditure on roads by that level of government. Commonwealth and state estimates of expenditure may include grants to other levels of government for expenditure on roads.

Estimates are presented at constant 2011–12 prices calculated using the BITRE Road Construction and Maintenance Price Index.

### Table T 1.4

1. In the years 2010 and 2011, road lengths were not adjusted for dual carriageways
2. In 2012 road lengths were adjusted for dual carriageways. This removed 3005 km from New South Wales, 2516 km from Victoria, 2325 km from Queensland, 840 km from South Australia, 1491 km from Western Australia, 216 km from Tasmania and 331 km from the

Australian Capital Territory. No adjustment was necessary for the Northern Territory or Other Territories.

## Table T 1.5

Table T 1.5 includes a mix of indexes from ABS and BITRE sources. ABS Producer Price Indexes (ABS 2012–13k) for Australian road and bridge construction commence in September 1997 (base of index 2011–12 = 100), with state data only available from September 1998 for New South Wales, Victoria, Queensland, South Australia and Western Australia. The ABS does not publish road and bridge construction indexes for Tasmania, the Northern Territory or the Australian Capital Territory. The ABS Producer Price Index series is provided quarterly. Estimates provided in Table T 1.5 are a mean of the four relevant quarters.

## Domestic freight transport

Tonne kilometres (TKM) is a measure of freight task. It is measured as the number of tonnes moved by a vehicle multiplied by the distance the load travelled in kilometres. Individual trips are aggregated to provide estimates for total TKM by mode.

### Road Freight

The aggregate road freight estimates in this chapter are modelled by BITRE based on estimates from the Survey of Motor Vehicle Use (SMVU) (ABS 2011c). The SMVU is not designed for time series usage, with the sample design and survey methodology changing several times since the survey commenced in 1963. In addition, the survey was only conducted annually between 1998 and 2007 (the survey was undertaken approximately triennially between 1971 and 1995, and biennially since 2007, although experimental estimates were modelled for 2008).

BITRE modelling modifies SMVU estimates to enable time series analysis by adjusting estimates to a common reference period, interpolating data for years when the survey was not conducted and imposing consistency requirements between SMVU and related data from other sources. An analysis of data discrepancies was undertaken in a joint ABS/BITRE project and published in an ABS research paper, *Survey of Motor Vehicle Use—An investigation into coherence* (ABS 2006a). A detailed description of BITRE modelling techniques for freight data is provided in *Freight Measurement and Modelling* (BITRE 2006a).

### Rail Freight

From 2001 to 2003, the ABS published estimates of Australian rail freight in *Freight Movements, Australia* (ABS 2002) and *Rail Freight Movements, Australia, Summary* (ABS 2004). These data have been used in BITRE modelling to estimate the tonne kilometres moved by rail for 1970–71 through to 2001–02. Estimates of total tonnes moved by rail and tonne kilometres moved for 2002–03 to 2006–07 were based on the results of the 2007 Australian Rail Survey as published in the *Australian Rail Industry Report 2007* (ARA 2008). The Australasian Railway Association Inc commissioned the Apelbaum Consulting Group to prepare the report. The *Australian Rail Industry Report 2007* provides measures of bulk and non-bulk freight based on definitions that differ from BITRE models and, therefore, are only included in estimates of

total rail freight in this publication. Estimates for state rail freight are derived from the Australian estimates using BITRE models (BITRE 2006a).

3. From the 2007–08 financial year, BITRE expanded the scope of direct collection activities to include businesses for which rail transport was not their primary activity (eg: large mining companies). Previously this information had been estimated using data from other sources. Recent estimates should not be compared with earlier data.

## Air Freight

For some time, estimates have only been available in respect of Australia's international air freight tonnage (Table T 6.2). BITRE recently commenced data collection of domestic air freight statistics (Table T 2.1 and Table T 6.3). Air freight statistics are compiled from surveys undertaken by the Aviation Statistics Unit of BITRE.

## Sea freight

Australia's international freight task relies heavily on shipping in terms of tonnage moved, with all of Australia's international trade in bulk commodities transported by sea. Specific bulk shipping statistics are not readily available. For some time BITRE estimated bulk sea freight under the assumption that all non-liner freight transport was for bulk commodities (non-liner cargo consisted of all dry and liquid bulk cargo, but also comprised cargo not shipped on regular liner services such as charters, dedicated car carriers and passenger ships). Liner/non-liner statistics are no longer available from ABS.

## Tables T 2.1–T 2.5

Measures of domestic freight moved by mode are provided in terms of tonnes moved and tonne kilometres, where data are available. State and territory estimates of road freight relate to the state or territory of vehicle registration, or in the case of sea freight, the state or territory of loading.

## Passenger transport

Passenger kilometres (PKM) is a measure of total passenger travel. It is the number of kilometres travelled by a vehicle multiplied by the number of occupants in the vehicle. Individual trips are aggregated to provide estimates for total PKM.

## Tables T 3.1–T 3.2

BITRE modelling uses data from a range of sources to provide a consistent time series of Australian passenger travel (PKM). Estimates of air passenger travel (Table T 3.1) differ from survey results for revenue passenger travel on domestic airlines (Table T 6.3) as Table T 3.1 is derived from a statistical model that creates estimates for all motorised modes of passenger transport. Vehicles not classified to passenger cars, buses, rail or air are included in 'other transport mode' (Table T 3.1).

4. The other transport mode represents primarily non–business use of light commercial vehicles (with contributions from motorcycles, non–business use of trucks and ferries).

For intercapital city passenger travel, estimates of the land based component include travel between origin and principle destination, while the aviation component includes all travel between city pairs.

### Table T 3.3

These estimates were made for Estimating Urban Traffic Congestion Cost Trends for Australian Cities (BTRE 2007) and have been updated using BITRE models. Estimates of passenger kilometres travelled in commercial vehicles primarily represent non–business use of light commercial vehicles. Data for cars, light commercial vehicles and motorcycles were drawn from successive Surveys of Motor Vehicle Use. Data on rail, light rail and buses up to 2000 were drawn from quarterly surveys of state authorities, stored on BITRE transport indicators database.

### Table T 3.4

Method of travel to work statistics are compiled every five years as part of the Population Census conducted by the ABS. These statistics show the method used to travel to work on the day of the Census by the entire Australian working population, attributed to the state or territory where each worker spent Census night.

5. Public transport and other method refers to the total number of persons who used more than one method of travel for the day which included bus or trains.

## Road

Vehicle kilometres travelled (VKT) is a measure of the total distance travelled by vehicles in a year.

### Map T 4.1

A map of the National road network is provided. The National road network follows Australia's national land transport plan, linking cities, regions and communities.

### Table T 4.1

Intercapital road distances are calculated from capital city GPO to capital city GPO using the shortest route as provided by whereis.com.au.

### Tables T 4.2–T 4.5

Estimates for motor vehicle usage are modelled by BITRE, primarily from data compiled by the SMVU (ABS 2011c). In addition to the SMVU, modelling of passenger transport also incorporates fuel use statistics from the monthly Australian Petroleum Statistics (RET 2012). Freight Measurement and Modelling (BTRE 2006a) provides an outline of modelling techniques

used for freight estimation, while Greenhouse Gas Emissions From Transport (BTRE 2002 and 2006b) provide an outline of modelling techniques used for passenger estimation.

### Table T 4.6

The Australian motor vehicle producer price index reflects movements in the prices received by manufacturers for new motor vehicles. The motor vehicle retail price index reflects the prices consumers pay for new and used motor vehicles and vehicle hire and lease expenses (non-holiday). The other indexes in this table reflect changes in the prices consumers pay for a range of motor vehicle goods and services

### Tables T 4.7–T 4.8

The ABS Motor Vehicle Census (ABS 2012j) is a census of all vehicles registered for use on public roads, excluding vehicles registered as vintage or historical cars, military vehicles and consular vehicles (in New South Wales, vintage or historical cars cannot be separately identified and are included in census results). The census date is 31 March each year, although this has varied in previous years (care should be taken when comparing movements over years). From 1991 onwards, data are not strictly comparable with previous surveys due to revisions to Australian Design Rules, which had an impact on the way vehicles were classified in ABS statistics:

- The classification of rigid trucks is restricted to only vehicles with a gross weight of 3.5 tonnes or more. Vehicles that had previously been classified as rigid trucks with a gross weight of less than 3.5 tonnes are classified as light commercial vehicles under the new standards.
- The classification of buses is restricted to only vehicles with seating for 10 passengers (including driver) or more. Vehicles that had previously been classified as buses with seating for less than 10 passengers are classified as passenger vehicles under the new standards.

Data from the Motor Vehicle Census are not available with a state disaggregation prior to 1982.

### Tables T 4.9–T 4.10

Data for new motor vehicle sales are sourced from the Federal Chamber of Automotive Industries and presented in Sales of New Motor Vehicles, Australia (ABS 2012i). The scope of these statistics is different to motor vehicle registrations data (Tables T 4.7–T 4.8) as it may include defence force vehicles, consular vehicles and vehicles that are intended for off-road use that are not registered for use on public roads. New motor vehicle sales statistics do not include sales of new motor cycles.

## Rail

### Table T 5.1

Intercapital rail distances can vary significantly depending on whether the distances are measured between freight terminals or passenger terminals and on the route chosen. The freight and passenger terminals used in compiling Table T 5.1 are provided below:

Sydney:

- Chullora South Junction (for the Chullora freight terminal).
- Sydney Central Railway Station (for regional and interstate passengers).

Melbourne:

- Tottenham Junction (for Tottenham yard, Dynon terminals and the Port of Melbourne).
- Southern Cross Railway Station (Spencer Street) for regional and interstate passengers.

Brisbane:

- Acacia Ridge freight terminal.
- Roma Street Railway Station for regional and interstate passengers.

Adelaide:

- Dry Creek South freight yards.
- Adelaide—Parklands Terminal (Keswick) for interstate passengers.

Perth:

- Forrestfield freight yards.
- East Perth for regional and interstate passengers.

Darwin:

- East Arm Wharf.
- Darwin Railway Station, Berrimah, for interstate passengers.

Canberra:

- Railway lands adjacent to railway corridor, Queanbeyan—Canberra (Fyshwick).
- Canberra Railway Station, Kingston.

Where more than one route exists between capital cities, the route chosen is the one that is typically used by the given train type. Some city pairs do not have point-to-point services so routes have been assumed. The following routes have been used:

Cootamundra/Parkes route for:

- Sydney—Adelaide/Perth/Darwin freight
- Brisbane—Perth/Darwin freight
- Canberra—Perth/Darwin freight

Lithgow/Parkes route for:

- Sydney—Adelaide/Perth/Darwin passenger
- Brisbane—Adelaide/Perth/Darwin passenger

Melbourne route for:

- Brisbane—Adelaide freight
- Canberra—Adelaide

For the Brisbane–Melbourne passenger terminal calculations, the distance is calculated via North Strathfield and Granville, bypassing Sydney Central.

### Table T 5.2

6. “Open” railways include heritage railways; “mothballed” lines (that is, lines with no scheduled or unscheduled services) are excluded. Also excluded are Queensland narrow-gauge (610 mm) sugar tram lines — estimated to be around 4 000 route-kilometres.

## Aviation

### Table T 6.1

Intercapital air distances are provided in terms of greater circle distances. These are distances that take into account the curvature of the earth.

### Tables T 6.2–T 6.3

7. Revenue passengers are fare paying passengers.
8. Number of international revenue passengers divided by number of available seats.
9. Revenue passenger kilometres are calculated by multiplying the number of revenue passengers travelling on each flight stage by the distance in kilometres between the airports. Modelled estimates of air passenger travel (Table T 3.1) differ from survey results for domestic airline revenue passenger travel.
10. Domestic revenue passenger kilometres divided by available seat kilometres.

### Table T 6.4

11. Regular Public Transport (RPT) operations only. RPT is aircraft transport available to the public and operated to fixed schedules and between specified fixed terminals.

### Table T 6.5

Airline on time measures are provided in terms of on time departures (flights that depart within 15 minutes of the scheduled departure time), on time arrivals (flights that arrive within 15 minutes of the scheduled arrival time) and cancellations (flights cancelled or rescheduled within seven days of the scheduled departure time).

12. Participating airlines are Jetstar, Qantas, QantasLink, Regional Express, Skywest, Tiger Airways and Virgin Australia.
13. Series commenced November 2003. Jetstar commenced reporting from May 2004, Macair from July 2005 and Tiger Airways from April 2008. MacAir ceased reporting from December 2008 onwards.



**Table T 6.6**

Airfare indexes provided are the annual average of monthly indexes compiled by BITRE.

**Table T 6.7**

Estimates of airport charges for domestic and regional aircraft types now include terminal charges, based on the use of the common user terminals at each airport.

Airport charges are shown inclusive of GST, but exclude confidential agreements between airports and airlines and also exclude volume based discounts.

- 14. Presented in September quarter 2012 dollars. Calculated on a return passenger basis (one arrival and one departure) for price schedules as at 31 July each year.
- 15. Represented by airport charges for a Boeing 747–438. Sydney and Brisbane international airport charges have been adjusted to exclude transit and transfer passengers.
- 16. Represented by airport charges for a Boeing 737–800.
- 17. Represented by airport charges for a SAAB340B.

**Shipping**

Deadweight tonnage (DWT) is the measure of weight that a vessel can carry, including cargo, bunkers, water and stores, expressed in tonnes.

**Table T 7.1**

The main source of information on intercapital sea distances was The Ports of Australia (Australian Chamber of Shipping 1993). Where optional routes are available, the shorter distance was used.

**Tables T 7.2–T 7.3**

Tables T 7.2 and T 7.3 provide estimates of the number of ships that visit major ports or states and the number of vessel visits a port or state receive during a financial year.

- 18. Improvements have been made to the methodology used to compile estimates of port calls, with revisions back to 1998–99.
- 19. From 2002–03 numbers include only cargo ships.

**Table T 7.4**

Data for international sea freight was compiled by BITRE from ABS international cargo statistics that were provided to the ABS by Australian Customs. The classification of cargo to bulk or non-bulk categories was an approximation based on the ship type. Liners were assumed to be non-bulk carriers and non-liners were assumed to be bulk carriers.

Liners carry mostly containerised, roll-on roll-off, and general cargo. They operate on a fixed schedule between specified ports and accept cargo from all sources. Non-liner cargo includes all dry and liquid bulk cargo as well as cargo not carried on regular liner services.

20. Since 2008–09, bulk and non-bulk categories are no longer available from ABS International cargo statistics. Numbers provided from 2008–09 are BITRE estimates.

### Tables T 7.5–T 7.7

Tables T 7.5, T 7.6 and T 7.7 provide estimates of the tonnes of cargo loaded or discharged from ships at Australian ports. Domestic cargo is recorded in these estimates at both the port of loading and the port of discharge, while international cargo is recorded only at the Australian port of loading or discharge.

21. International Trade cargo statistics are no longer available, so merchandise trade data have been used and backcast to 2005–06 for comparative purposes. Merchandise trade data have a different scope to the previously used cargo statistics with one of the differences being the inclusion of exports' ship and aircraft stores. The timing of the data supply has also changed to now include fully revised data.

### Table T 7.9

Table T 7.9 provides the number of ships operating out of Australian ports for at least part of the financial year that are owned or operated by Australian entities. In any financial year, there may be ships managed by Australian registered companies that operate internationally without calling into Australian ports.

### Tables T 7.10–T 7.11

A list of the major Australian registered trading vessels (greater than 2000 dwt) engaged in Australian coastal and international trade is provided in Tables T 7.10 and T 7.11. Vessels are classified to coastal or international trade based on their primary activity. Some predominantly international trading vessels occasionally engage in coastal trade and some predominantly coastal trading vessels occasionally engage in international trade.

## Safety

Fatalities include injuries resulting in death within 30 days of the accident where death is attributable to injuries sustained during the accident.

Serious injuries are defined as injuries that require hospitalisation.

### Table T 8.1

Table T 8.1 provides a cross-modal comparison of fatality accidents and fatalities. Road statistics are compiled by BITRE, rail and aviation statistics are compiled by the Australian Transport Safety Bureau (ATSB), while marine data are provided by the National Marine Safety Committee. Data are not currently available for the number of rail fatality accidents.

Cross-modal comparisons should be undertaken with caution as level crossing accidents between trains and road vehicles are included in the estimates of both modes from 2001 (level crossing deaths were not included in rail fatality statistics prior to 2001). In addition, suicides are excluded from aviation casualty estimates and road estimates but included in rail estimates from 2001.

### Tables T 8.2–T 8.9

Fatality rates and serious injury rates are presented for each mode using population data provided in Table I 1.5 and passenger kilometre data provided in Table T 3.1.

22. Between 1989 and 1997, statistics for serious injuries resulting from road accidents were based on statistics compiled from police accident reports. Comparable national statistics are no longer available from these sources.
23. From 2000–01, serious injury statistics for roads are compiled on a financial year basis (year ended 30 June) from hospital records provided to the Australian Institute of Health and Welfare and maintained on their National Hospital Morbidity Database.

### Tables T 8.10–T 8.12

Rail safety statistics are sourced from the state rail regulators and are based on operators/owners occurrence reports as reported in the ATSB National Rail Occurrence Data collection.

24. ACT rail fatalities are recorded under NSW.

### Tables T 8.13–T 8.15

Aviation accident statistics include all occurrences associated with the operation of an aircraft which take place between the time any person boards the aircraft with the intention of flight until disembarking, in which a person is injured as a result of:

- being in the aircraft, or
- direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
- direct exposure to jet blast.

For aviation safety statistics, injuries include serious and minor injuries.

Casualties are excluded when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew.

## *Energy and the environment*

### Tables T 9.1–T 9.2

Australian petroleum sales data include reporting companies' own use of petroleum products, but excludes refinery fuel.

25. Includes all LPG production and trade.

26. All diesel imports are included in automotive diesel.

### Table T 9.3

Annual average retail petrol prices are calculated as a simple average of quarterly prices for unleaded petrol collected by the ABS as part of CPI compilation processes.

### Tables T 9.4–T 9.8

Emission estimates that are provided in terms of carbon dioxide equivalent emissions in Tables T 9.4 and T 9.5 include directly radiative gases only (carbon dioxide, methane and nitrous oxide). The estimates of carbon dioxide equivalent emissions do not include the indirect effects of gases such as carbon monoxide, nitrogen oxides and non-methane volatile organic compounds. Emission estimates are available in Tables I 1.7 to I 1.9 for carbon dioxide, methane and nitrous oxide without conversion to carbon dioxide equivalent.

Greenhouse gas emissions presented in Australian Infrastructure Statistics Yearbook 2013 represent emissions from end-use activity only. That is, they do not include emissions from 'upstream' activity (primarily fuel refining). Greenhouse gas emission estimates provided in Australian Transport Statistics Yearbook 2009 were presented on a 'full fuel cycle' basis (inclusive of 'upstream' emissions).

Estimates for maritime and aviation emissions only include domestic transport (coastal shipping and domestic aviation).

A discussion of the modelling techniques used is available in Greenhouse Gas Emissions From Australian Transport (BTRE 2006b).

## Part E Energy infrastructure

### Table E 1.1

Table E 1.1 provides estimates of engineering construction work done on energy infrastructure, providing energy detail to the data provided in Table I 2.1. From the 2012 issue of Yearbook, estimates are no longer provided for construction work done of Gas and other hydrocarbons projects. The ABS definition of pipelines used in this table includes oil and gas pipelines, urban supply mains for gas, pipelines for refined petroleum products, chemicals, etc. Pipelines used for water supply are included in the category 'water storage and supply' (see Table W 1.1).

### Table E 1.2, E 1.3 and E 3.6

Early statistics (up to 1993–94) presented in these tables were sourced from a Historical Data Disk produced by ESAA. ESAA also provided data from 1997–98, however data for 1994–95 to 1996–97 were not available. From 1997–98, measures of ACT activity were included with NSW and were not available separately.

## Table E 1.4

Table E 1.4 provides reliability measures of electricity supply. In general, data have not been normalised to exclude distribution outages beyond the reasonable control of the network operator. However, adjustments have been made to estimates for Queensland in 2005–06 to take into account the impact of Cyclone Larry, and estimates for New South Wales in 2006–07 to take into account extreme storm activity in that year.

## *Raw inputs to energy supply*

### Table E 2.1

Australia's economic demonstrated mineral energy resources are estimated by Geoscience Australia using a methodology based on the McKelvey resource classification system. It classifies identified mineral resources according to two parameters: the degree of geological assurance and the degree of economic feasibility of exploitation.

The degree of geological assurance is determined by the results of geological testing. A demonstrated resource is considered to exist where the tonnage, density, shape, physical characteristics, grade and mineral content of a deposit can be estimated with a reasonable level of confidence. Overlaying the measure of geological assurance is the economic feasibility of the extraction or production of the mineral. A demonstrated mineral energy resource is determined to be economic when 'profitable extraction or production under defined investment assumptions has been established, analytically demonstrated, or assumed with reasonable certainty' (GA 2013).

### Table E 2.2 and E 2.3

These tables show the input fuels used to generate electricity (Table E 2.2) and gas (Table E 2.3) measured in terms of energy units (petajoules) and physical measures (units vary depending on input fuel type). BREE presents energy use statistics in terms of energy units only; BITRE has converted these measures to physical units using conversion factors provided in *Energy in Australia* (BREE 2013).

## *Energy production and usage*

The majority of statistics provided in this chapter are sourced from the BREE Australian energy statistics (AES) database, as published on the BREE website. The AES uses a methodology which balances energy consumption estimates with production and trade estimates. As such, data from AES are internally consistent, but may differ slightly from individual source datasets.

Energy consumption estimates are provided as a net concept. That is, intermediate consumption of energy (energy used to produce energy products) is not included in estimates of total energy consumed (further explanation is provided in *Energy update*, BREE 2012a).

Where separate estimates for ACT are not provided in state/territory tables, ACT estimates are included with NSW estimates. Estimates of energy consumption by industry are compiled based on a modified form of the 1993 version of the Australia and New Zealand Standard

Industry Classification (ANZSIC). The ANZSIC was updated in 2006, however the industry classification used for energy consumption estimates has not been updated to avoid breaks in time series and consequential breaches of confidentialised data.

For several detailed energy consumption tables, there are time series that are not published to preserve the confidentiality of individual responses. Where this has occurred, suppressed estimates have been included in totals.

### Table E 3.10

In converting black coal consumption estimates from energy units (petajoules) to physical units (kilotonnes), a number of assumptions had to be made relating to the grade of coal used in each state/territory and industry. The energy content of solid fuels in Australia for some states and some categories of fuel are provided in Energy in Australia (BREE 2013). Where the energy content of a fuel type is not available for a particular state, assumptions were made based on energy content of fuels used by similar industries or in nearby states.

For NSW, BITRE assumes that the representative grade of coal used by the food, beverages and tobacco industry is washed thermal coal, the grade of coal used by other manufacturing industries (including the suppressed industries: cement, lime, plaster and concrete; iron and steel; and basic non-ferrous metals manufacturing industries) is steelworks grade coal, and the coastal shipping bunkers and other industries use unwashed thermal coal. The electricity generation industry in NSW uses a grade of black coal specific to that industry.

For VIC, BITRE assumes that the representative grade of coal used by all manufacturing industries has the same energy content as NSW washed thermal coal. In addition, BITRE assumes that non-manufacturing industries use the same grade of coal as NSW non-manufacturing industries (unwashed thermal coal).

The electricity generation industry in QLD uses a grade of black coal specific to that industry and that state. For all other industries in QLD, BITRE assumes that the representative grade of coal is other non-export grade

For SA, BITRE assumes that the representative grade of coal used by all manufacturing industries has the same energy content as NSW washed thermal coal. In addition, BITRE assumes that non-manufacturing industries use the same grade of coal as NSW non-manufacturing industries (unwashed thermal coal).

For WA and TAS, Energy in Australia (BREE 2013) only provides one conversion factor for each state (thermal coal).

### Table E 3.13

State and territory based estimates of petroleum fuel consumption by the petroleum refining and basic chemicals manufacturing industries are not separately available for publication, but have been included in the other manufacturing industry. Estimates for the petroleum refining and basic chemical manufacturing industries are available at the national level.

1. Estimates of Australian petroleum fuel consumption includes all petroleum fuels, but excludes petroleum-based lubricants and greases.

### Table E 3.14

Annual world crude oil prices are presented as the average of quarterly prices compiled by ABARES from posted or official selling prices with Rotterdam spot prices for Middle East and North Sea crudes.

2. Middle East crude, 32 American Petroleum Institute (API) gravity.
3. North Sea crude, 38 API gravity.
4. North American crude, 40 API gravity.
5. Australian crude, 42 API gravity.
6. Malaysia tapis blend, 44 API gravity.

API gravity is an international standard measure of crude oil density, with higher API gravities signifying lighter oils. Light crude oil has an API gravity higher than 30.

## Energy safety and emissions

### Table E 4.1

There are few datasets available that provide quality estimates of health-related issues for the production or use of energy in Australia. Annual estimates of hospital admissions due to exposure to electricity, radiation, or extreme temperature/pressure have been provided in Table E 4.1. Further disaggregation of these estimates to measure admissions solely due to exposure to electricity is not possible.

### Table E 4.2 and Table E 4.3

Greenhouse gas emissions provided elsewhere in the Yearbook are presented as direct or 'Scope 1' (National Greenhouse Gas Inventory terminology) emissions. This excludes upstream or indirect emissions from the conversion of energy to its final form. The National Greenhouse Gas Inventory defines 'Scope 2' emissions as 'indirect greenhouse gas emissions from the generation of purchased electricity'.

The sum of all estimates of the direct (Scope 1) greenhouse gas emissions for the electricity generation industry that are presented in Tables E 4.2 and E 4.3 are equal to the sum of Scope 2 emissions for all industries.

## Part C Communications infrastructure

### Table C 1.1

Table C 1.1 provides estimates of engineering construction work done on telecommunications infrastructure, drawing together telecommunications data provided in Table I 2.1.

## Table C 1.2

Table C 1.2 provides a number of broad indicators of capital investment by selected communications industries using the national accounts concepts gross fixed capital expenditure, net capital expenditure, and depreciation and amortisation.

Gross fixed capital expenditure represents the total value of producers' acquisitions less disposals of fixed assets during a financial year; where fixed assets are assets used repeatedly in processes of production for more than one year (e.g. vehicles, machinery, capitalised computer software, computers, electronics, houses, buildings and structures, mining exploration expenditure, etc).

Net capital expenditure represents the value of total capital expenditure less disposal of assets, while depreciation and amortisation represent the notional reduction in value (consumption) of an asset over the life of the asset, apportioned to the reference time period (depreciation usually refers to the reduction in value of tangible assets and amortisation usually refers to the reduction in value of intangible assets).

## *Investment in information technology*

### Table C 2.1 to Table C 2.3

These tables provide a statistical summary of investment in information technology assets by businesses classified to the information media and telecommunications industry, with assets classified by broad technology.

1. Gross fixed capital formation is a measure of total expenditure on new and second-hand fixed assets, less sales of fixed assets, which occur during the reference period.
2. Consumption of fixed capital represents the reduction in the value of fixed assets resulting from physical deterioration, obsolescence or accidental damage that occurs over the reference period.
3. Information technology net capital stock is a measure of the total value of all information technology capital assets held at the end of the reference period. The change in net capital stock from the end of one financial year to the next is equivalent to gross fixed capital formation (Table C 2.1) less consumption of fixed capital (Table C 2.2).

## *Subscribers and providers*

### Table C 3.1 to Table C 3.2

Statistics on communications subscribers and providers are classified according to the technology or medium used. For telecommunications, Table C 3.1 provides estimates of the number of public payphones, fixed voice telephones and terrestrial mobile phones (excludes satellite mobile phones), while Table C 3.2 provides some recent estimates of GSM and 3G terrestrial mobile subscribers.



4. GSM (Global System for Mobile communications) is a digital technology with good call security, but relatively poor range. GSM mobile phones are most popular in metropolitan areas.
5. 3G (third generation digital mobile phone technology) networks allow information to be transferred many times faster than on previous networks. 3G was initially introduced to Australia in April 2003 and was adopted by the major networks in 2005.

### Table C 3.3 to Table C 3.4

Table C 3.3 provides a summary of internet subscribers by download speed and type of subscriber; while Table C 3.4 provides a summary of internet subscribers by type of access connection. In earlier years, statistics for both tables reflect information gathered from a complete census of all internet service providers, but for the December 2009 collection, information was gathered from a survey of only the internet service providers with more than 1000 active subscribers.

## Price and activity

### Table C 4.1

The numbers presented in Table C 4.1 are an annual average of the quarterly telecommunication services index that contributes to the consumer price index estimation process. Indexes are available for capital cities only.

### Table C 4.4

Table C 4.4 provides estimates of businesses undertaking internet commerce activity as a percentage of all businesses, including businesses with no internet connection.

## Communications security

There is no known source for statistics on physical injuries associated with communications infrastructure. The Yearbook provides statistics on the number of telephone numbers listed on the ACMA Do Not Call register (covering unsolicited telemarketing calls and marketing faxes) and the number of 000 and 112 calls forwarded to emergency service organisations.

## Part W Water infrastructure

### Table W 1.1

Table W 1.1 provides estimates of engineering construction work done on water infrastructure, providing water detail to the data provided in Table I 2.1. Pipelines used for water supply and sewerage and drainage are included in this table, however the ABS definition of pipelines used in Table E 1.1 includes oil and gas pipelines, urban supply mains for gas, pipelines for refined petroleum products, chemicals, etc.

## Table W 1.2

Current value of water infrastructure assets are measured as the written down replacement costs of fixed water assets. This concept represents the 'current cost of replacing the service potential of fixed water and sewerage business assets based on current technology'

1. BITRE estimates for urban water supply are sourced from utility reports in the National Performance Report published by NWC et al. (2013c). BITRE aggregates reports only for those utilities with more than 10 000 connections. For the majority of states there are relatively few water utilities with less than 10 000 customers; however, Tasmania is the exception to this rule, with most Tasmanian utilities falling below this threshold. This recently changed, with utilities amalgamating into three large water providers. A trial set of estimates were compiled for Tasmania on the new basis in 2007–08. New data are being added to Yearbook as they become available.

## Table W 1.3

2. A definition of 'large dams' is provided by the Australian National Committee on Large Dams (ANCOLD): The dam wall must be more than 15 m in height, or more than 10 m in height, but with:
  - a crest of at least 500 m in length,
  - a capacity of at least 1 million cubic metres,
  - a maximum flood discharge dealt with by the dam of at least 2000 cubic metres per second, or
  - unusual design.
3. From 2010–11, data are sourced from Water Storage (BOM 2013b). Capacity measures on Water Storage measure accessible capacity (excludes "dead storage" — water at the bottom of the dam, below the take-off pipe that cannot be accessed)

## Table W 1.5

Water and sewerage infrastructure capital expenditure includes all capital expenditure on new works, renewals or replacements, other expenditure that would otherwise be referred to as capital and recycling water assets.

## Table W 1.6

Water treatment plants providing full treatment generally use multiple processes to achieve high quality water. In addition to filtration and disinfection, plants may also undertake processes for taste and odour reduction.

## Table W 1.7

The length of urban water mains includes all transfer, distribution, and reticulation mains, but excludes connections between mains and property meter; mains delivering recycled water for non-urban use (e.g. agriculture re-use), disused pipe lengths, privately owned mains, mains

associated with source works (e.g. borefield mains), interconnecting mains between schemes or sources, and on-site mains within water facilities.

### Table W 1.9

This table provides estimates of the average number of water main breaks, bursts and leaks. Estimates exclude breaks in mains to meter connections and above-ground seepage that can be repaired without shutting down the main.

### Table W 1.10

Estimates of the number of sewerage treatment plants include all primary, secondary and tertiary level treatment plants.

### Table W 1.11

The length of sewerage mains and channels includes all trunk, pressure and reticulation mains, but excludes connections between mains and properties, and conduits carrying treated effluent downstream from treatment plants.

### Table W 1.13

The definition of recycled water treatment plants used in Table W 1.13 includes sewerage treatment plants where the majority of treated water output has undergone additional treatment beyond tertiary standard for discharge to meet the requirements of the recycled water customer.

### Table W 1.14

This table provides estimates of the average number of breaks or chokes to sewer mains, where a break is any failure of a sewer main leading to an interruption to service and a choke is a confirmed partial or total blockage.

### Table W 1.15

A regulated river normally has a dam or weir structure that regulates or diverts the flow of water to storages or supply networks.

### Table W 1.16

Table W 1.16 provides a measure of the current cost of replacing assets (excluding administration, buildings, furniture fittings, equipment, vehicles and corporate service networks). This measure does not take into account accumulated depreciation based on the age and remaining life of the assets.

## Water inputs

### Table W 2.1

The total volume of rainwater available each year is a function of the area averaged annual state and territory rainfall and the land area of each state/territory.

4. Includes mainland area and island area. Total Australian island area is 32,163 square kilometres.
5. NSW figures include estimates for New South Wales, the Australian Capital Territory and Jervis Bay territory.

### Table W 2.2

Surface water sources include dams, rivers or irrigation channels.

### Table W 2.3

The volume of water sourced from groundwater excludes water sourced from groundwater supplies that have been artificially recharged using sources of water already counted elsewhere, such as:

- rivers;
- desalination plants; and
- sewage treatment plants.

Other forms of artificial groundwater recharge (e.g. storm water) that have not already been counted are included.

### Table W 2.5

The volume of water sourced from recycling includes all recycled water from direct or indirect reuse. This measure includes only recycled water used as a substitute for potable water.

### Table W 2.6

The volume of residential sewage, non-residential sewage and non-trade waste includes volumes collected in the sewerage system due to stormwater, illegal connection inflow and infiltration to the sewerage system. Estimates of the volume of trade waste include liquid waste generated from any industry, business, trade or manufacturing process and stormwater collected in the trade waste system.

### Table W 2.7

The consumer price index for water and sewerage services provides a measure of annual changes in the price to consumers of water and sewerage services.

### Table W 2.9

The measure of treated waste water intake by the rural water supply network (Table W 2.9c) complements the measure of urban water sourced from recycling (Table W 2.5) as it represents the volume of recycled water that is not used as a substitute for potable water.

### Table W 2.10

6. Entitlement trading includes, but is not limited to, water access entitlements. Water access entitlements are 'a perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan'.
7. Water allocations are 'the specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water plan' (NWC 2013a)

## Water supply and use

### Table W 3.2 and Table W 3.5

Table W 3.2 provides estimates of the number of properties connected to the urban supply network, while Table W 3.5 provides estimates of the number of properties connected to urban sewerage services. To be included, properties must be connected to the networks as a separate entity. Properties that are connected but are non-rateable or non-metered are included, while properties that are rateable, but not connected are excluded. Strata title flats or units are counted as separate properties, but a site with no more than 10 per cent of its properties as non-strata title units may be counted as one property.

8. The volume of water supplied for other uses includes estimates of water used for fire fighting, mains flushing, losses due to faulty meters, leakage and any other consumption.

### Table W 3.6

9. Recycled water would generally be provided via a third (non-potable, non-sewerage) pipe system.
10. Includes recycled water supplied to golf courses, heavy industry and commercial areas.
11. Recycled water used to irrigate forestry, pastures for livestock and other agricultural products.
12. Recycled water used on-site at water treatment plants that is external to the treatment process.

### Table W 3.8 and Table W 3.9

Table W 3.8 provides an estimate of the volume of water supplied to customer service points by rural water service providers, while Table W 3.9 provides an estimate of the volume of water consumed by agricultural activity. Conceptually, the majority of the difference between the estimates in the two tables represents rural water extracted from sources other than the major rural water service providers.

### Table W 3.10

13. The register of all farms in scope of the statistical collection prior to 2005–06 was maintained internally by ABS. From 2005–06 on, the register of all farms was derived from the Australian Business Register, maintained by the Australian Taxation Office.

14. This series groups several agricultural activities into the one measure. Relative standard errors were calculated for component series, but are not available for the new measure.

### Table W 3.12

The application rate for irrigation water is calculated by dividing the total volume of irrigation water applied by the area of pasture or crop that is being irrigated.

### Table W 3.14

The gross value of irrigated agricultural production (GVIAP) is the value placed on recorded production of agricultural commodities produced with the assistance of irrigation at wholesale market prices (prices realised in the market place). GVIAP is not a measure of the value that irrigation adds to production.

## Health and emissions

Urban supply water quality standards are either specified in the utility's licence or franchise agreement, set by the state health regulatory agency or government, or in the absence of a formal agreement, the compliance of utilities is measured against the Australian Drinking Water Guidelines (2004).

Water supply zones are generally a discrete area of similar water quality. Zones may be based on the area served by one treatment plant or an area that is easily described by its boundaries or system characteristics.

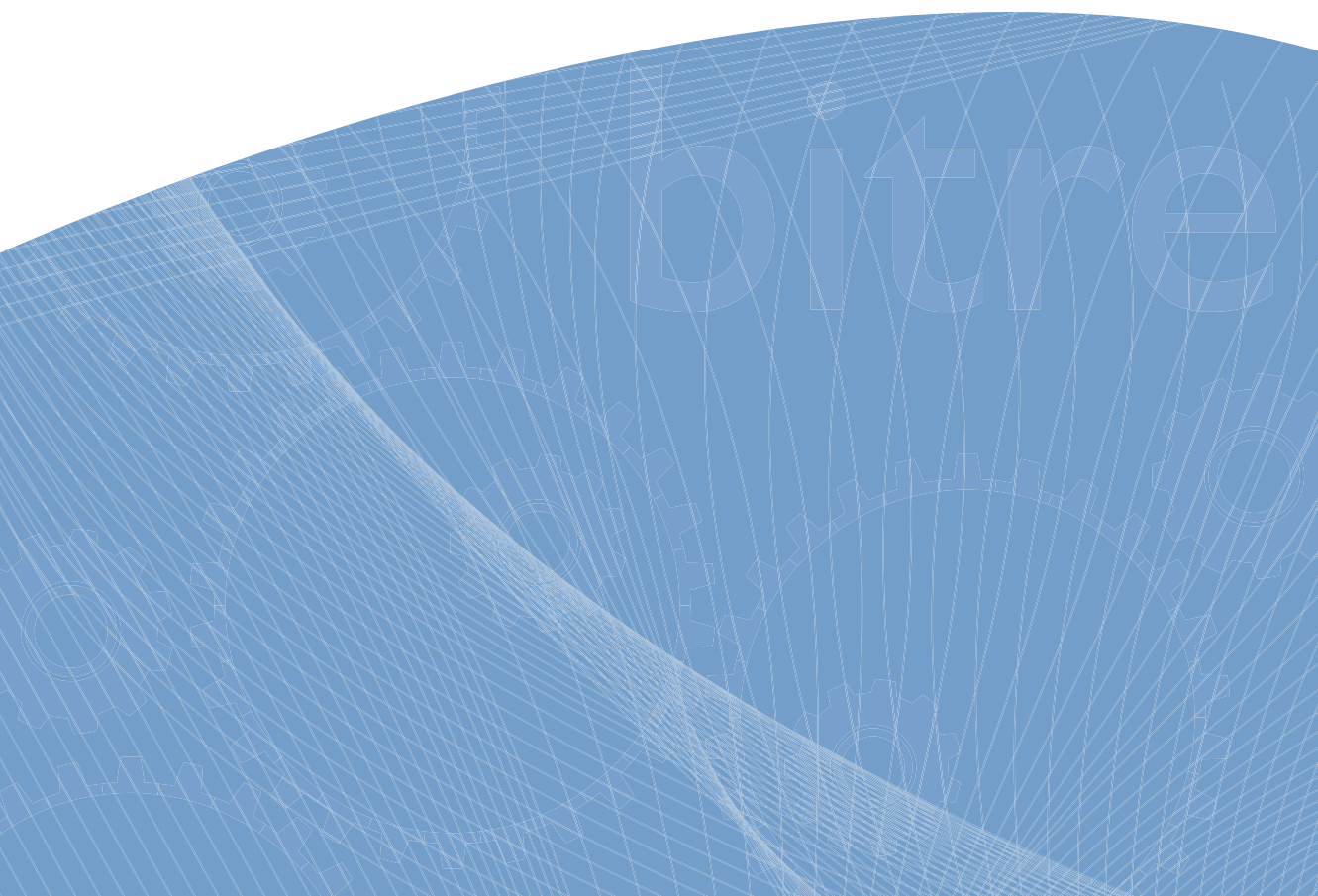
### Table W 4.5, Table W 4.6 and Table W 4.7

Greenhouse gas emissions of transport, energy, communication or water activities can either be measured in terms of the direct emissions of the activity or all greenhouse gas emissions resulting from the activity (direct emissions plus upstream emissions, in particular the emissions resulting from the generation of purchased electricity). To avoid double counting, the preferred Yearbook greenhouse gas measures are for direct emissions only, with Table E 4.2 electricity generation emissions, representing all upstream emissions for the economy. In National Greenhouse Gas Inventory terminology, direct emissions represent 'scope 1' emissions, while emissions from the generation of purchased electricity represent 'scope 2' emissions.

As direct emissions statistics are not available for water supply networks, Table W 4.5 and Table W 4.6 provide estimates of greenhouse gas emissions from water supply and sewerage networks that include both end-use emissions and upstream emissions from the generation of purchased electricity. These estimates are not comparable with greenhouse gas emission estimates for other major forms of infrastructure presented in Parts T, E and C of the Yearbook, which present direct emissions only.

Table W 4.7 provides estimates of scope 1 greenhouse gas emissions from wastewater handling sourced from the National Greenhouse Gas Inventory.

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