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**A statistical portrait of the
environment in NSW**

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A statistical portrait of the environment in NSW

by

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SUMMARY

This paper provides a statistical snapshot of a number of indicators relevant to the environment, particularly as it relates to NSW. It looks at air quality and greenhouse gas emissions, average rainfall and air temperatures, and the frequency of bushfire. Statistics are provided on the production, consumption and cost of energy. Figures relevant to the issue of waste and recycling are included, as well as those relating to vegetation cover and the problems associated with weeds and pests. Information may be found on threatened and endangered species, as well as the current status of fishing stock. The state of water catchment areas is noted, and data related to water consumption may also be found. Figures on the use of public transport are included as is an overview of the number of prosecutions for environmental offences.

The focus of this paper is on the situation in NSW. In some cases comparison is made to the other States and Territories. Information on the attitudes of the population to various aspects of the environment has also been provided for some indicators.

This paper does not claim to paint an exhaustive picture of the state of the environment. It generally does not consider issues associated with transport and population as they will be considered in a separate, future paper in the social indicators series published by the NSW Parliamentary Library Research Service.

This paper draws on a variety of sources and they are noted in each section.

More detailed information relating to the environment may be found in a number of papers published by the NSW Parliamentary Library Research Service. Relevant papers that have been published since the start of 2010 are listed below. However, there are many others likely to be of interest from previous years.

[Regulation of the coal seam gas industry in NSW](#)

NSW Parliamentary Library E-Brief No 01/2011 by Lenny Roth

[Plantation forestry in NSW: regulatory regimes and future prospects](#)

NSW Parliamentary Library Briefing Paper No 12/2010 by Daniel Montoya

[Bushfires in NSW: An Update](#)

NSW Parliamentary Library Briefing Paper No 10/2010 by Daniel Montoya

[Waste: Comparative Data and Management Frameworks](#)

NSW Parliamentary Library Briefing Paper No 09/2010 by Stewart Smith

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[NSW Planning Framework: History of Reforms](#)

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NSW Parliamentary Library Issues Backgrounder No 03/2010

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NSW Parliamentary Library E-Brief No 09/2010 by Holly Park

[Issues Backgrounder: Murray-Darling Basin: water management issues](#)

NSW Parliamentary Library Issues Backgrounder No 02/2010

[Mining and the Economy](#)

NSW Parliamentary Library E-Brief No 08/2010 by Daniel Montoya

[Water: Regulatory Frameworks in Rural NSW](#)

NSW Parliamentary Library Briefing Paper No 04/2010 by Daniel Montoya

[Biodiversity: Regulatory Frameworks](#)

NSW Parliamentary Library Briefing Paper No 03/2010 by Holly Park

[Agriculture, Landscapes and Carbon](#)

NSW Parliamentary Library E-Brief No 04/2010 by Stewart Smith

1 GREENHOUSE GAS EMISSIONS

Greenhouse gases are a natural part of the atmosphere and include water vapour, carbon dioxide, methane and nitrous oxide. They absorb and emit the sun's warmth in the atmosphere so that the Earth is warmer than it would otherwise be, thus allowing the presence of life on Earth.¹ However, there is a widely held view that climate change is occurring as a result of an increase in the amount of greenhouse gases produced by humans (global greenhouse gas emissions have risen by 70% since 1970).² The evidence shows that average air and ocean temperatures have increased, snow and ice caps are melting, and sea levels are rising. Australia has experienced an average warming of 0.9°C in the last 100 years and global sea levels have risen by 195 mm in that time.³ For more information see: *The Science of Climate Change*, NSW Parliamentary Library Background Paper No 1/06 by Stewart Smith.

Greenhouse gases are produced by:⁴

- The burning of fossil fuels (coal, oil and gas)
- Some farming practices
- Land clearing
- The breakdown of food and plant wastes and sewerage
- Some industrial processes

Australia contributes about 1.5% of global greenhouse gas emissions yet only 0.3% of the world's population reside here.⁵

Various initiatives have been developed in an effort to counter the increase in greenhouse gases. In NSW, the Greenhouse Gas Reduction Scheme commenced in 2003.⁶ It seeks to reduce the greenhouse gas emissions

¹ Cth Department of Climate Change and Energy Efficiency, 'What is climate change?', www.climatechange.gov.au

² The Intergovernmental Panel on Climate Change is more than 90% certain that most of the increases in global temperatures are due to increases in greenhouse gas concentrations in the atmosphere: NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*.

³ NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*.

⁴ Cth Department of Climate Change and Energy Efficiency, 'What is climate change?', www.climatechange.gov.au

⁵ ABS, *Australia's Environment: Issues and Trends, January 2010*, 4613.0, January 2010, p 4.

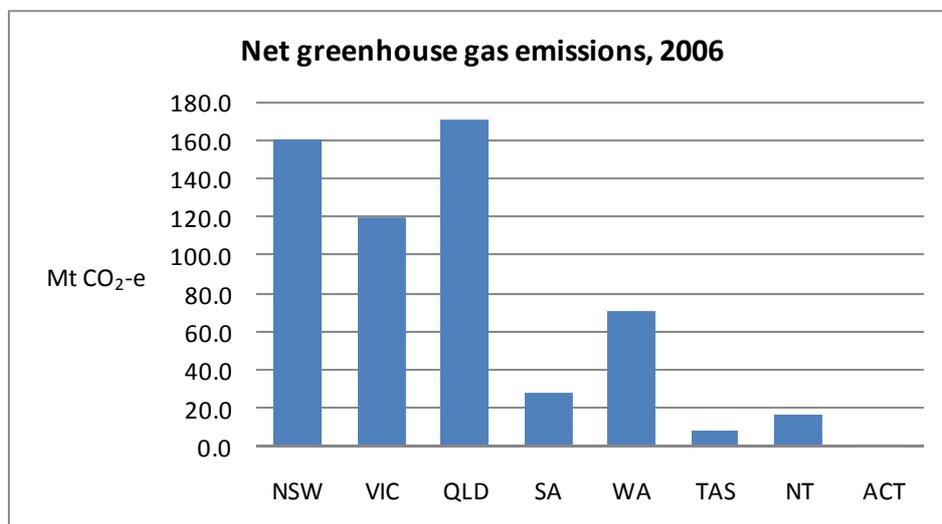
⁶ Greenhouse Gas Reduction Scheme, www.greenhousegas.nsw.gov.au

associated with the production and use of electricity and was one of the first mandatory greenhouse gas emissions trading schemes worldwide.

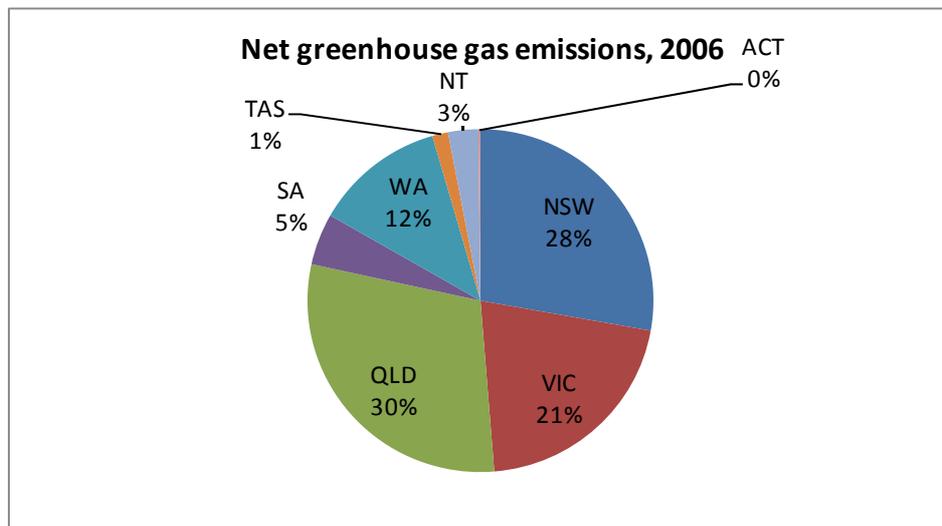
The following table compares the net greenhouse gas emissions for each of the Australian States and Territories between 1990 and 2006. In 2006, NSW was the second largest contributor to greenhouse gas emissions at 160 Mt CO₂-e, behind Queensland at 170.9 Mt CO₂-e. The greenhouse gas emissions from NSW fell by 0.25% between 1990 and 2006. However, for Australia as a whole, they increased by 4.23% in that same period.

	1990	1994	1998	2002	2006
Net greenhouse gas emissions	Mt CO ₂ -e				
NSW	160.4	149.9	152.3	157.0	160.0
VIC	107.2	101.5	114.9	117.8	120.3
QLD	169.8	143.7	154.2	164.0	170.9
SA	32.7	30.0	30.0	32.4	28.0
WA	58.8	57.3	63.3	71.7	70.4
TAS	11.5	8.9	8.7	7.8	8.5
NT	10.5	11.3	12.8	17.0	16.2
ACT	1.1	1.1	1.1	1.1	1.1
AUS	552.6	504.2	536.8	569.5	576.0

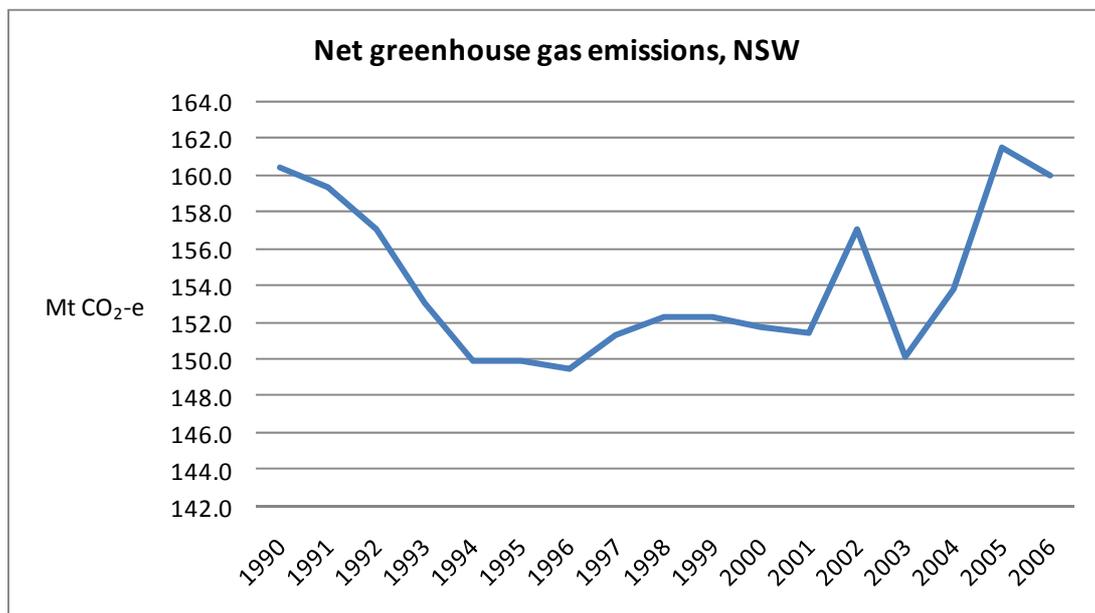
Source: ABS, *Measures of Australia's Progress: Summary Indicators*, 2009, 1383.0.55.001, 2009



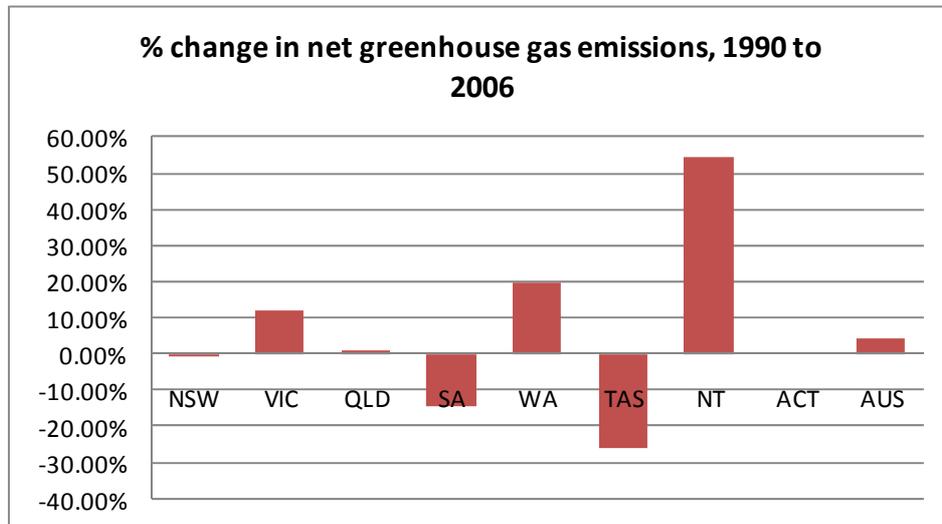
The following chart reveals the contribution of each of the States and Territories to Australia's greenhouse gas emissions. NSW is the second largest contributor, responsible for 28% of Australia's net greenhouse gas emissions. Together, Queensland and New South Wales contribute more than half of Australia's greenhouse gas emissions.



The following graph tracks the movement of greenhouse gas emissions in NSW between 1990 and 2006. It shows that the lowest amount of greenhouse gases emitted occurred in 1996.



The graph below shows the percentage change in net greenhouse gas emissions for each of the States and Territories between 1990 and 2006. NSW, South Australia and Tasmania were the only jurisdictions to experience a decrease in net greenhouse gas emissions in that time.

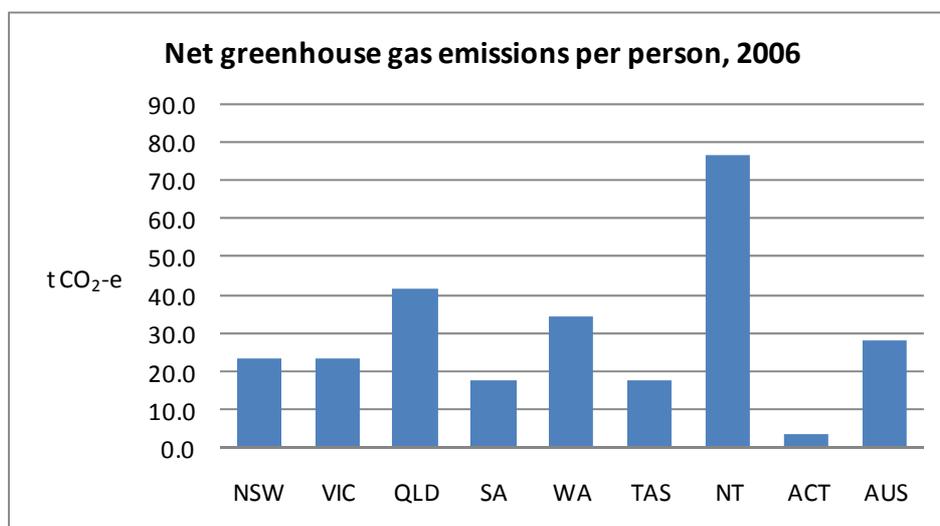


1.1 Per capita

The following table compares the net greenhouse gas emissions per person for each of the States and Territories between 1990 and 2006. NSW produced 23.5t CO₂-e per person in 2006 (14.5% less than in 1990), which is below the Australian average of 27.8 t CO₂-e.

	1990	1994	1998	2002	2006
Net greenhouse gas emissions per person	t CO ₂ -e				
NSW	27.5	24.7	24.0	23.7	23.5
VIC	24.5	22.6	24.8	24.2	23.5
QLD	58.6	45.1	44.7	44.1	41.8
SA	22.9	20.5	20.1	21.3	17.8
WA	36.5	33.7	34.7	37.2	34.2
TAS	25.0	18.9	18.5	16.4	17.4
NT	64.2	65.4	67.3	85.0	76.7
ACT	3.9	3.6	3.5	3.4	3.3
AUS	32.4	28.2	28.7	29.0	27.8

Source: ABS, *Measures of Australia's Progress: Summary Indicators, 2009*, 1383.0.55.001, 2009



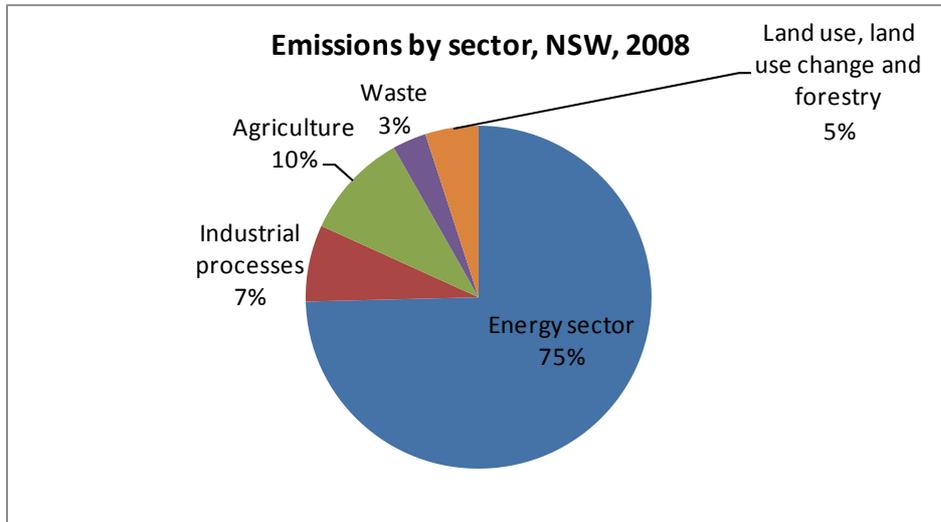
1.2 Per sector

The table below notes the emissions by sector for each of the States and Territories in 2008. The energy sector in NSW is responsible for 75% of greenhouse gas emissions in NSW, followed by agriculture which contributes 10%. Please note that transport is listed as part of the energy sector.

Greenhouse gas emissions per sector, 2008

	NSW	QLD	VIC	WA	SA	NT	TAS	ACT	AUS
Energy sector	122.7	97.3	102.1	57.7	24.2	5.7	4.8	0.9	416.6
Stationary energy	81.2	67.6	80.3	44.0	15.1	4.1	3.1	0.0	296.4
Energy industries	67.6	52.1	66.2	27.4	10.8	1.4	0.8	0.0	226.4
Electricity generation	63.2	48.6	63.2	17.7	9.6	1.3	0.8	0.0	204.3
Other energy industries	4.4	3.5	3.0	9.7	1.2	0.1	0.0	0.0	22.1
Manufacturing & construction	9.0	12.5	6.2	14.2	2.5	2.5	1.8	0.0	48.7
Other sectors	4.6	2.9	8.0	2.3	1.7	0.2	0.5	0.0	21.4
Transport	21.8	19.5	19.8	9.2	5.8	1.5	1.8	0.9	80.2
Fugitive emissions	19.8	10.2	2.0	4.5	3.3	0.1	0.0	0.0	39.9
Industrial processes	11.9	4.3	2.7	7.1	1.8	0.1	1.4	0.1	31.1
Agriculture	16.5	26.6	13.6	13.4	5.0	10.2	2.0	0.0	87.4
Livestock	13.2	21.8	10.5	5.7	3.6	2.5	1.5	0.0	58.9
Other agriculture	3.4	4.8	3.1	7.7	1.3	7.7	0.5	0.0	28.5
Waste	5.2	3.1	3.5	1.2	0.8	0.1	0.3	0.1	14.4
Other	-	-	-	-	1.6	0.0	0.0	0.0	-
Land use, land use change and forestry	8.2	29.0	-2.8	-6.7	-1.7	0.1	0.5	0.0	26.3
Afforestation and reforestation	-2.3	-0.5	-6.7	-9.6	-2.1	-0.1	-1.6	0.0	-23.0
Land use change (deforestation)	10.6	29.5	3.9	2.9	0.4	0.2	2.2	0.0	49.3
Total	164.7	160.3	119.1	72.8	31.7	16.3	9.1	1.2	575.8

Source: Department of Climate Change and Energy Efficiency, *Australian National Greenhouse Accounts: State and Territory Greenhouse Gas Inventories 2008*, May 2010.

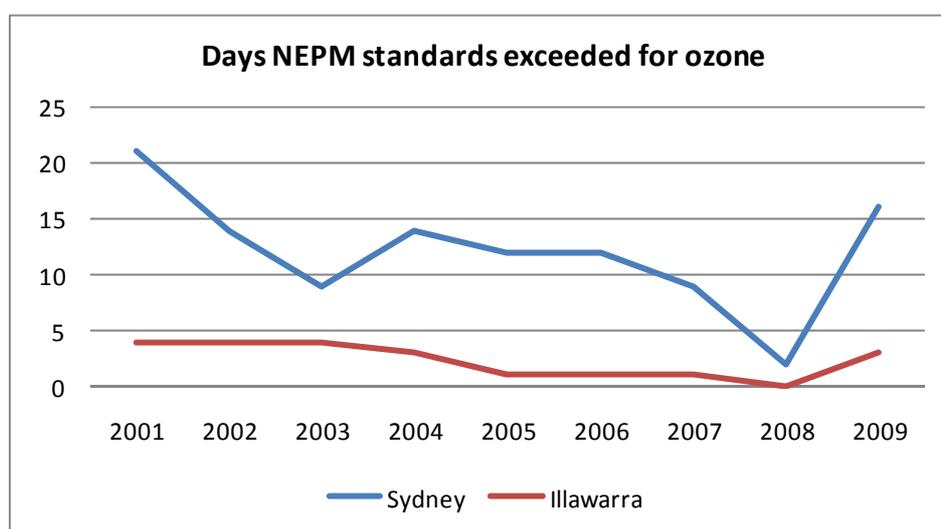


2 AIR QUALITY

The National Environmental Protection Measure (NEPM) sets maximum goals or standards for each pollutant type – ozone, particles, carbon monoxide, nitrogen dioxide, sulphur dioxide and lead.⁷ The following table notes the number of days the NEPM standards were exceeded each year for ozone and particulate concentrations. The standards for the remaining pollutants were met.⁸

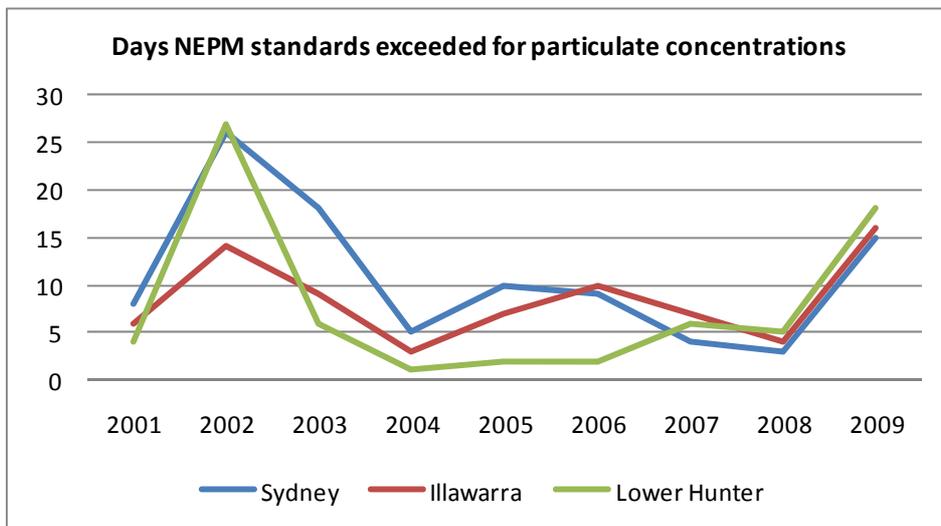
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Photochemical oxidants as ozone—4 hour average										
Sydney	12	21	14	9	14	12	12	9	2	16
Illawarra	7	4	4	4	3	1	1	1	0	3
Lower Hunter	0	0	0	0	0	0	0	0	0	0
Particulate concentrations—24 hour average										
Sydney	3	8	26	18	5	10	9	4	3	15
Illawarra	5	6	14	9	3	7	10	7	4	16
Lower Hunter	1	4	27	6	1	2	2	6	5	18

Source: ABS, *NSW State and Regional Indicators, December 2010*, 1338.1, January 2011.



⁷ NSW Department of Environment, Climate Change and Water, "Air quality data – exceedences" www.environment.nsw.gov.au

⁸ NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*.



3 RAINFALL AND AVERAGE TEMPERATURE

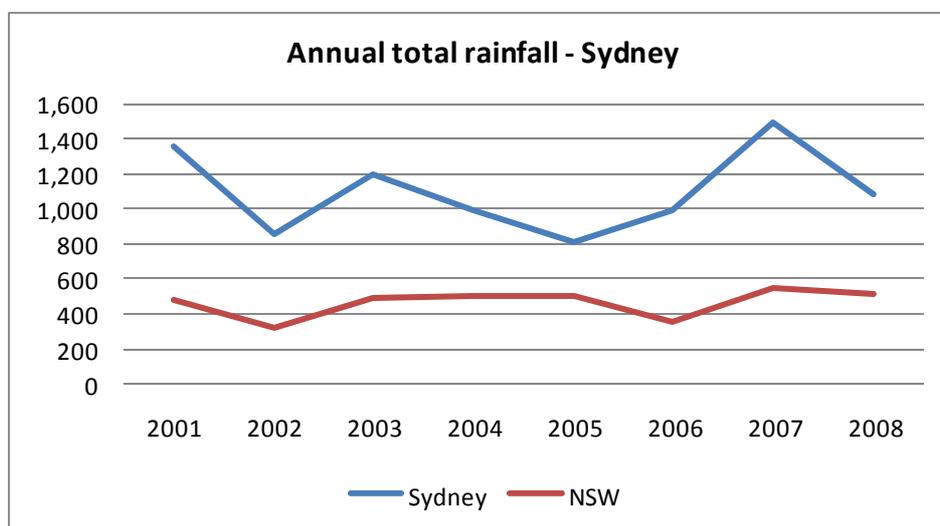
The onset of La Nina conditions in 2010 saw heavy rains, the easing of drought, and widespread flooding.⁹ Australia had its third wettest year on record in 2010 with the average rainfall being 690mm (compared to a long term average of 465mm). Whilst it was the coolest year since 2001, the last decade saw the warmest 10 years on record.¹⁰

The following table shows the average temperatures in NSW from 2001 to 2008, as well as the rainfall for that period.

	2001	2002	2003	2004	2005	2006	2007	2008
Mean minimum temperature–Sydney °C	14.7	14.6	14.5	14.7	14.8	14.7	15.2	14.3
Mean maximum temperature–Sydney °C	23.1	23.1	22.7	23.4	23.4	23.1	22.7	22.1
Mean minimum temperature–NSW °C	11.0	10.9	11.3	11.0	11.4	10.9	11.9	10.7
Mean maximum temperature–NSW °C	24.7	25.6	24.6	25.0	25.2	25.5	25.1	24.3
Annual total rainfall–Sydney mm	1,359	860	1,200	995	816	994	1,499	1,083
Annual total rainfall–NSW average mm	480	321	489	499	500	351	543	519

Source: ABS, *NSW State and Regional Indicators, September 2010*, 1338.1, October 2010.

The graph below compares the annual rainfall in Sydney with the NSW average.

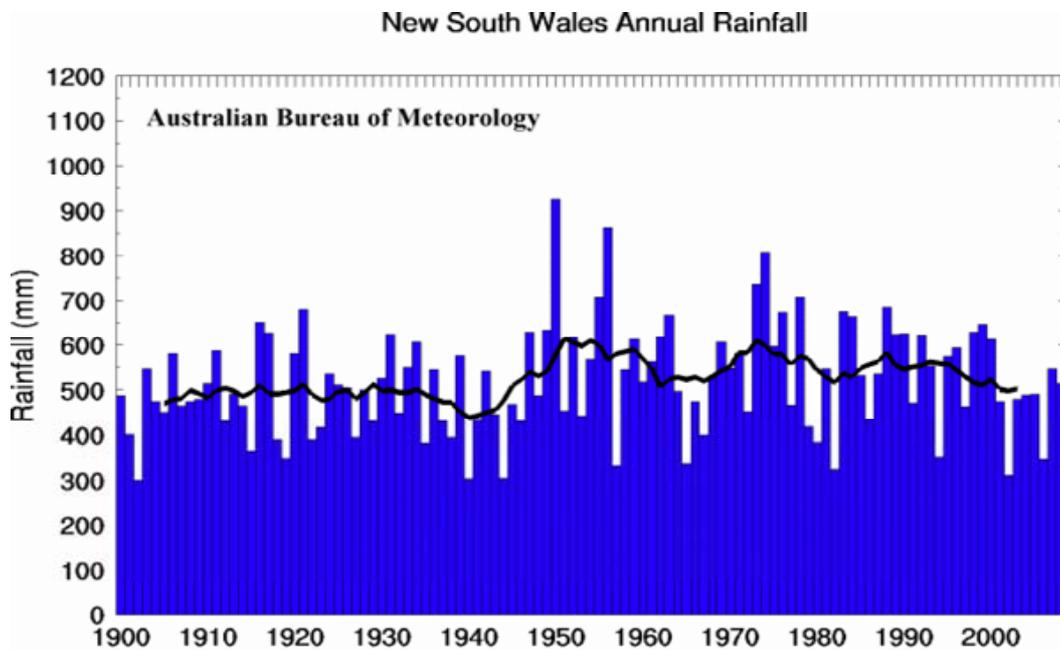


Source: ABS, *NSW State and Regional Indicators, September 2010*, 1338.1, October 2010.

The following chart by the Bureau of Meteorology tracks the annual rainfall in NSW since 1900. The average rainfall between 1961 and 1990 was 566.04mm.

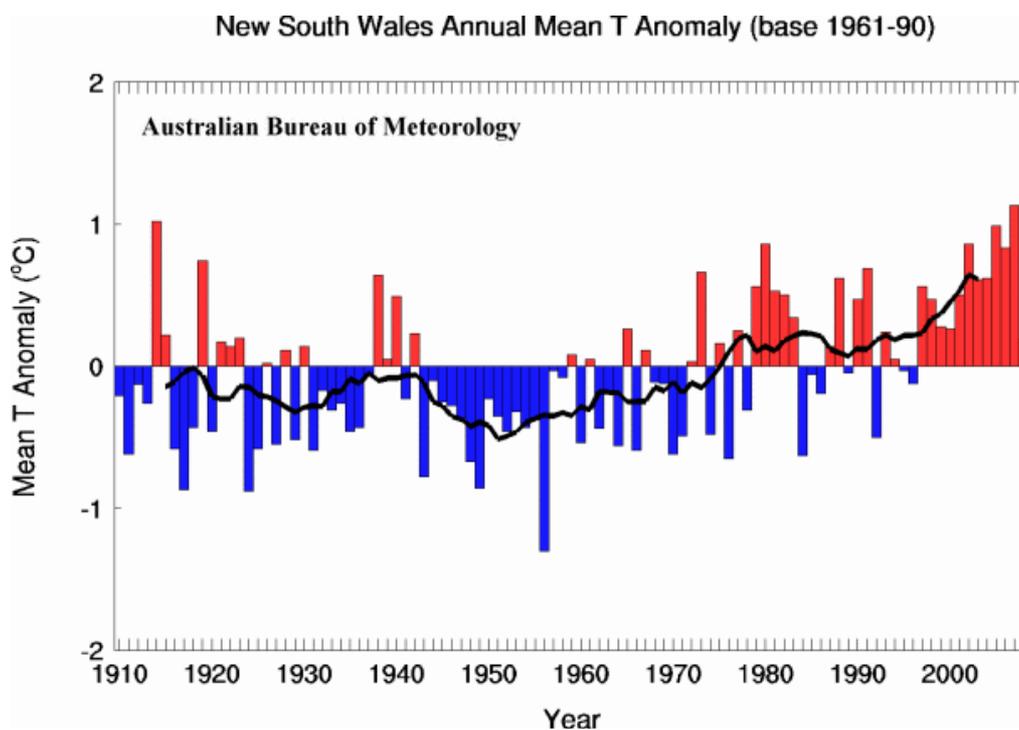
⁹ Bureau of Meteorology, *Annual Australian Climate Statement 2010*, January 2011.

¹⁰ Bureau of Meteorology, *Annual Australian Climate Statement 2010*, January 2011.



Source: Bureau of Meteorology

The chart below depicts the anomaly from the average temperature in NSW since 1910 (the average temperature between 1961 and 1990 was 17.3°C), thus showing the above average temperatures that have characterised NSW in the last decade.

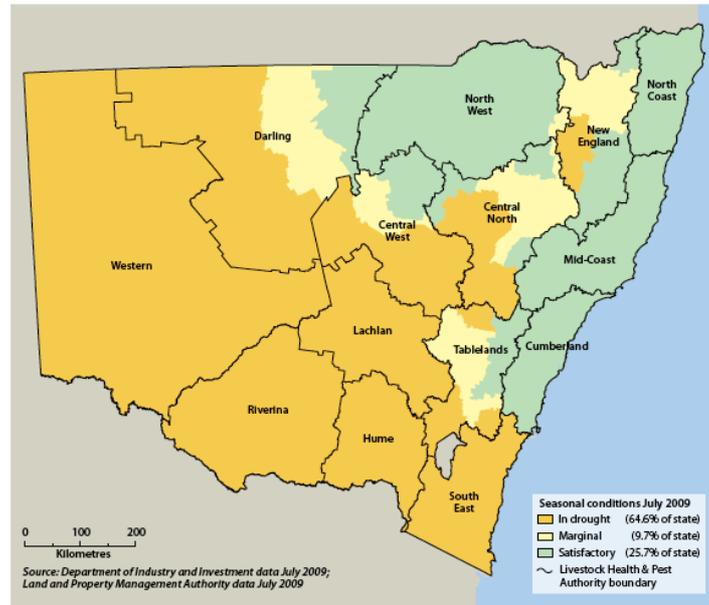


Source: Bureau of Meteorology.

In contrast to the heavy rains of 2010, 64.6% of NSW had been deemed as

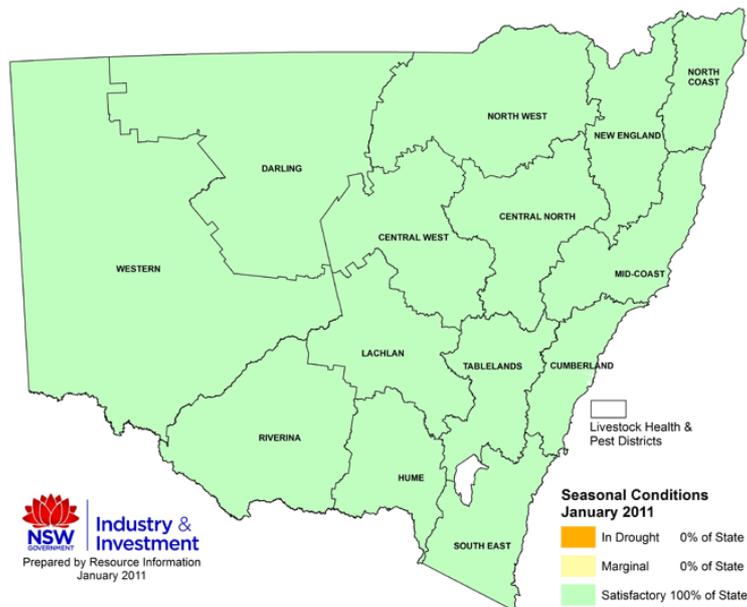
being in drought as at July 2009, as shown by the following map.

Map 1.3:
Drought declared areas in NSW, July 2009



Source: Department of Environment, Climate Change and Water NSW, *NSW State of the Environment 2009*, Section 1.1

However, as at January 2011, the seasonal conditions for 100% of NSW were deemed satisfactory (ie all of NSW was unaffected by drought).¹¹



11

4 BUSHFIRES

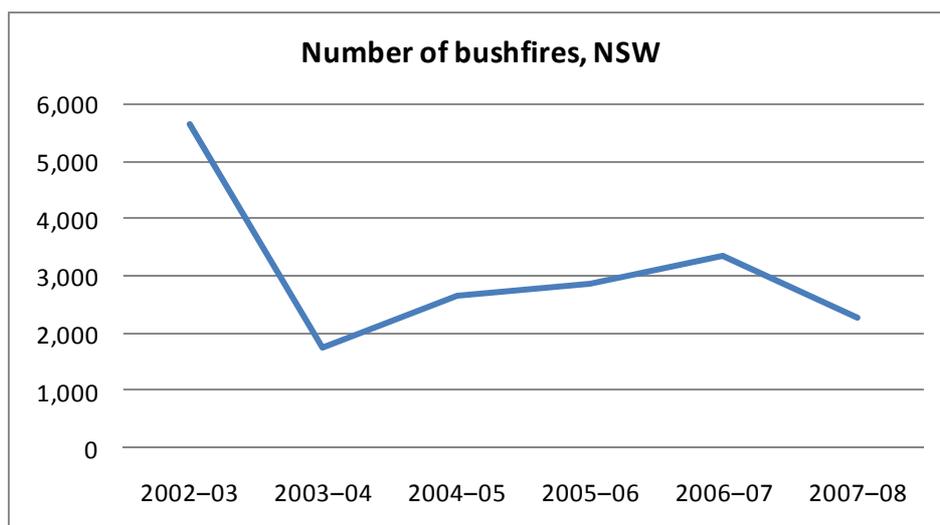
Bushfires, which have always been present in Australia, can present an enormous threat, with the possibility of destruction of property and livestock, and at times, the loss of life. The 2009 Victorian bushfires and the 2003 fires in Canberra are recent examples of the devastation that may be wrought by bushfire.

The table below tracks the number of bushfires and damage caused in NSW between 2002/03 and 2007/08.

Bushfires and damage between 2002-03 and 2007-08 in NSW

Fire season	No. of fires	Statewide fire bans (days)	No. of s.44 declarations in a fire season	Days between first and last s.44 declaration in a fire season	Lives lost as a direct result of fire
2002-03	5,642	13	61	151	3
2003-04	1,764	0	10	31	0
2004-05	2,659	1	20	16	0
2005-06	2,865	5	38	150	2
2006-07	3,361	0	36	151	2
2007-08	2,271	0	7	75	0

Source: Department of Environment, Climate Change and Water NSW, *State of the Environment Report 2009*.



5 ENERGY PRODUCTION AND CONSUMPTION

Energy sources can be grouped into two categories:¹²

1. Renewable energy – hydro electricity, biomass, solar, wind, geothermal, wave and tidal.
2. Non-renewable – fossil fuels such as oil, natural gas, and coal.

Whereas renewable energy is essentially inexhaustible, non-renewable sources are in finite supply. There is accordingly great interest in increasing the amount of energy obtained from renewable rather than non-renewable sources.

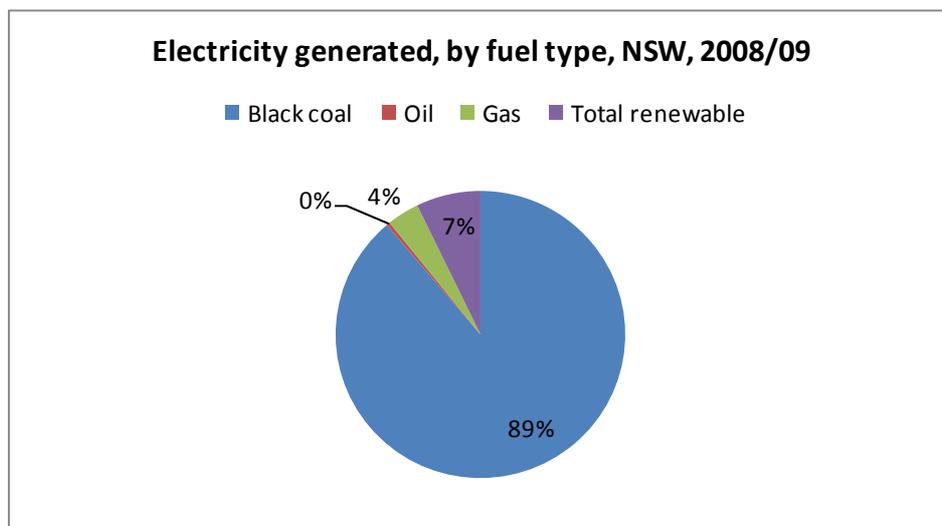
The table below shows electricity generation gross outputs by fuel type in NSW. 7.2% of electricity generated in 2008/09 was from renewable fuel, up from 6.4% in 2004/05. However, that still leaves 92.8% to thermal sources and black coal was the fuel used to generate 88.8% of all electricity in NSW in 2008/09.

Electricity generation, by fuel type, NSW, PJ

	2004/05	2005/06	2006/07	2007/08	2008/09
Thermal					
Black coal	241.4	241.4	246.8	251.2	254.9
Oil	1.1	1.1	1.1	1.1	1.1
Gas	8.3	8.3	8.9	9.7	10.4
Total thermal	250.8	250.8	256.8	262.0	266.4
Renewable					
Hydro	15.9	15.9	16.0	15.9	15.9
Wind	0.1	0.1	0.1	0.1	0.1
Biomass	0.6	1.0	1.1	1.2	1.2
Biogas	0.4	2.4	3.3	3.3	3.4
Total renewable	17.1	19.5	20.5	20.6	20.7
Total electricity generation gross outputs	267.9	270.2	277.3	282.5	287.1

Source: ABS, *NSW State and Regional Indicators*, September 2010, 1338.1, October 2010.

¹² ABS, *Australia's Environment: Issues and Trends*, January 2010, 4613.0, January 2010.



The following table compares energy consumption by State and fuel type. Petroleum products provided 34% of energy in Australia, followed by black coal at 29%. NSW consumed 27% of energy in Australia, with Victoria in second place at 24%.

Energy consumption by State, by fuel, 2007/08, PJ

	Black coal	Brown coal	Renewables	Petroleum products	Natural gas
NSW	831	0	48	527	128
VIC	2	611	34	452	266
QLD	631	0	125	453	140
WA	122	0	18	279	514
SA	80	0	11	119	153
TAS	15	0	39	42	15
NT	0	0	0	70	33
Total	1681	611	290	1941	1249
Share	29%	11%	5%	34%	22%

Source: ABARE, *Energy in Australia 2010*, p 12.

The following table looks at energy consumption in NSW between 2001 and 2008. Total energy consumption has increased by 6.3% since 2001, with natural gas being the only source of energy to decrease in consumption. Renewable electricity generation rose by 20% between 2005 and 2008.

Energy consumption and renewable electricity generation – NSW (PJ)

	2001	2002	2003	2004	2005	2006	2007	2008
Energy consumption								
Black coal	737.5	743.5	758.6	793.5	788.7	803.2	807.3	847.8
Natural gas	146.1	144.2	148.8	146.5	141.5	140.3	132.0	131.7
Petroleum products	542.1	533.2	522.9	539.9	549.1	565.8	568.1	581.4
Electricity	252.2	253.8	257.8	268.9	277.9	281.6	285.3	290.1
Total energy consumption	1,455.6	1,451.1	1,456.7	1,508.8	1,489.1	1,497.3	1,512.3	1,547.3
Renewable electricity generation	-	-	-	-	17.1	19.5	20.5	20.6

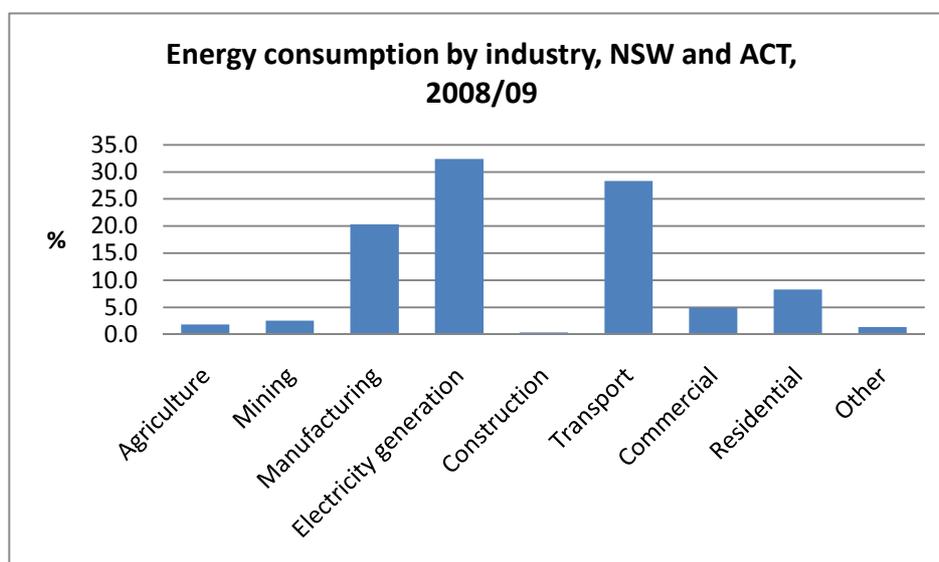
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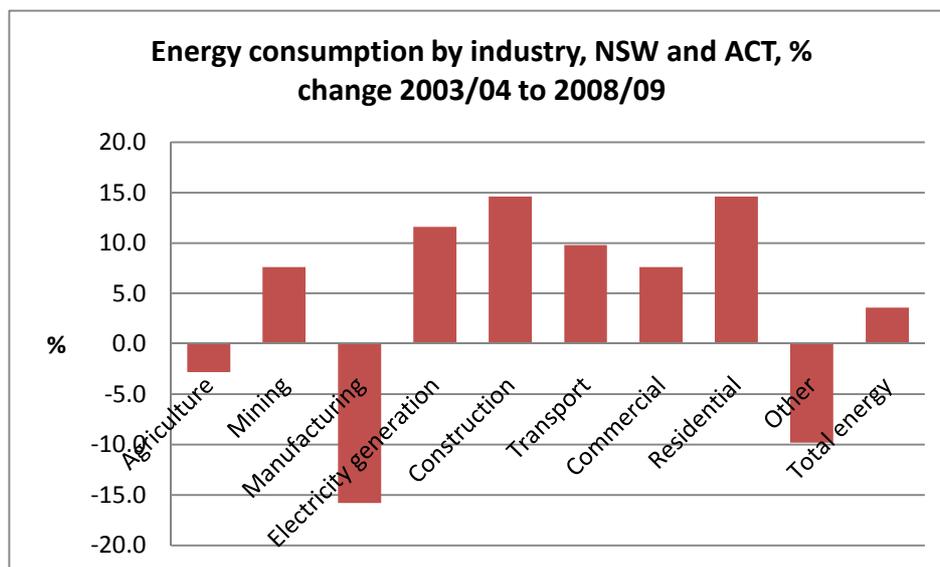
Electricity generation is the industry which consumes the greatest amount of energy in NSW and the ACT, followed by the transport and manufacturing industries. Together they consume more than 80% of energy. Residential use of energy consumes only 8% of total energy in NSW and the ACT.

Energy consumption, NSW and ACT, By industry, PJ

	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09
Agriculture	28.2	28.1	28.2	27.8	27.6	27.4
Mining	36.7	40.8	39.7	39.9	39.4	39.5
Manufacturing	377.6	351.4	336.8	351.9	324.7	317.9
Electricity generation	454.1	448.2	446.4	441.5	510.2	506.9
Construction	4.1	3.6	4.8	4.8	4.8	4.7
Transport	402.4	407.5	424.4	430.8	448.1	441.9
Commercial	71.0	73.8	74.9	76.1	76.2	76.4
Residential	112.7	114.7	117.9	121.8	124.6	129.2
Other	22.5	23.9	23.1	18.7	18.4	20.3
Total energy consumption	1,509.2	1,492.0	1,496.2	1,513.4	1,573.9	1,564.2

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1338.1, January 2011.



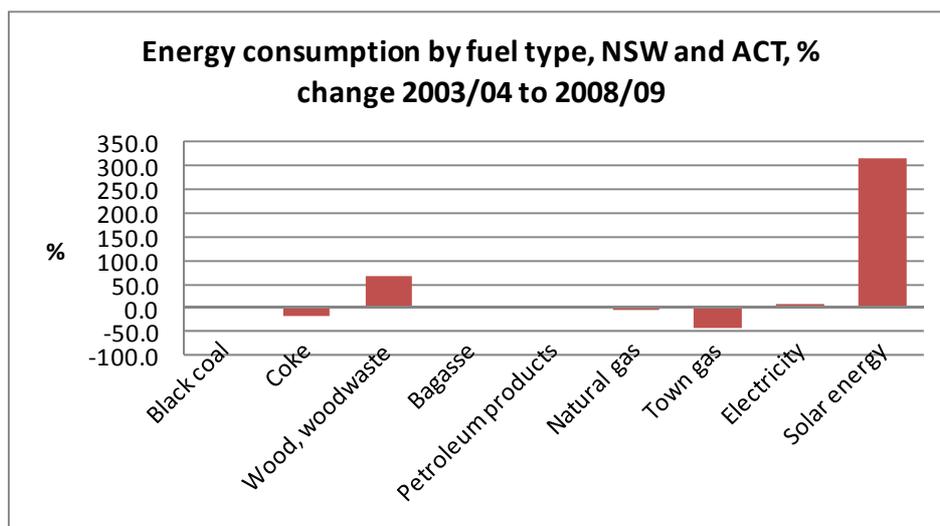
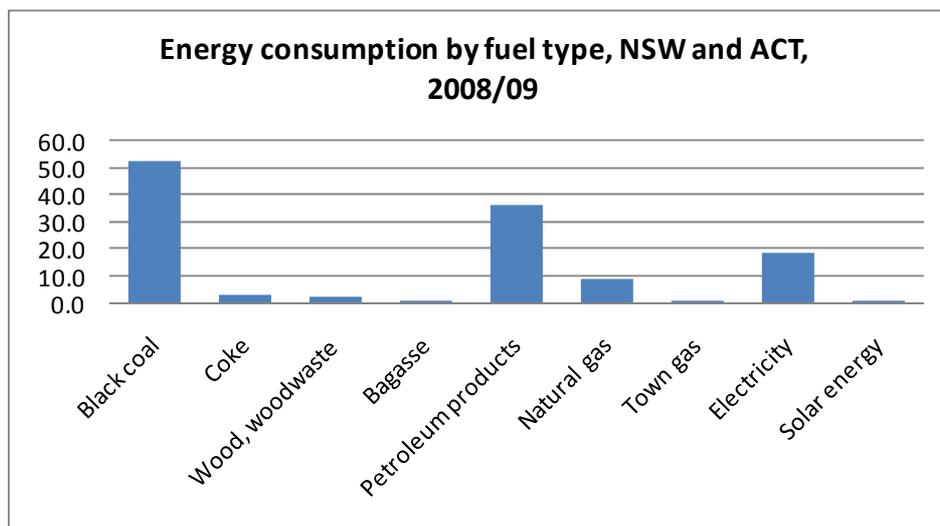


When fuel type is considered, more than half of energy consumed is sourced from black coal and another 36% from petroleum products. Whilst only 0.2% of energy consumed in 2007/08 was solar energy, the amount of solar energy consumed increased by 317% between 2003/04 and 2008/09.

Energy consumption, NSW and ACT, By fuel

	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	Percent contribution 2008–09	Percentage change 2003–04 to 2008–09
	PJ	PJ	PJ	PJ	PJ	PJ	%	%
Black coal	793.5	788.7	803.2	807.3	866.1	818.8	52.3	3.2
Coke	61.7	61.0	61.3	62.0	63.3	50.6	3.2	-18.0
Wood, woodwaste	18.0	17.8	20.5	22.7	30.2	29.9	1.9	66.1
Bagasse	6.2	6.4	6.6	7.4	6.3	6.3	0.4	1.6
Petroleum products	540.3	552.0	564.6	569.2	584.7	568.6	36.4	5.2
Natural gas	146.5	141.5	140.3	132.0	132.3	142.8	9.1	-2.5
Town gas	4.4	5.4	5.9	5.8	3.2	2.6	0.2	-40.9
Electricity	268.9	277.9	281.6	285.3	290.1	292.3	18.7	8.7
Solar energy	0.6	0.6	0.6	1.5	1.7	2.5	0.2	316.7

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1338.1, January 2011.



The table below notes the various sources of energy in dwellings in NSW in 2008. 5.7% of dwellings are using solar energy. 47.1% of dwellings take advantage of off-peak electricity to heat their water and 5% use solar energy to heat water.

Energy sources in dwellings, NSW, 2008, %

	Sydney SD	Balance of NSW	NSW
Sources of energy in dwellings			
Mains electricity	100.0	99.4	99.8
Mains gas	45.7	24.9	37.5
LPG/bottled gas	6.3	23.6	13.1
Wood	6.5	24.1	13.4
Solar	4.4	7.6	5.7
<i>Total dwellings</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Sources of energy used in heating water			
Electricity			
Peak electricity	12.2	9.0	10.9
Off-peak electricity	39.1	59.5	47.1
<i>Total electricity</i>	<i>51.3</i>	<i>68.4</i>	<i>58.1</i>
Gas			
Mains gas	30.5	13.7	23.9
LPG/bottled gas	0.4	3.3	1.6
<i>Total gas</i>	<i>31.0</i>	<i>17.0</i>	<i>25.5</i>
Solar	3.9	6.7	5.0
Did not know	14.8	7.9	12.1
<i>Total dwellings</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1338.1, January 2011.

There are a number of ways in which a household can reduce their energy needs and increase the efficiency of their energy use including the installation of insulation and the use of energy efficient light bulbs. The following table shows that 53.4% of dwellings in NSW in 2008 had insulation. However, the difference between Sydney and the rest of the NSW is noticeable, with 61% of dwellings in the rest of NSW having insulation compared to 49% in Sydney. 56.2% of dwellings in NSW use fluorescent lights and 65.7% use energy saving lights. Again, the proportion of dwellings using these energy saving measures is higher outside Sydney.

Dwelling characteristics, NSW, 2008, %

	Sydney SD	Balance of NSW	NSW
Whether dwelling has insulation			
With insulation	48.6	60.7	53.4
Without insulation	28.4	21.4	25.7
Did not know	22.9	18.0	21.0
<i>Total dwellings</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Use of energy saving lights			
Fluorescent lights	50.0	65.7	56.2
Energy saving lights	63.9	68.5	65.7
<i>Total dwellings</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1338.1, January 2011.

6 GREEN POWER

GreenPower is the national accreditation program that sets the environmental and reporting standards for renewable energy products offered by electricity suppliers. Customers can choose to buy a GreenPower product through their electricity supplier and in doing so contribute an amount to be invested in renewable energy.¹³ The NSW Government developed the GreenPower Accreditation Program in April 1997 and as a result of its success it was expanded to a national level.¹⁴ As at June 2010, there were 182,296 GreenPower residential customers in NSW and 6522 commercial customers. Victoria and Queensland have the greatest number of GreenPower customers, whether residential or commercial.

National GreenPower Accreditation Program Status – June 2010 quarter

	NSW	VIC	QLD	SA	WA	ACT	TAS	NT	Total
Residential customers	182296	278706	241527	77619	5734	16690	47	9	802628
Commercial customers	6522	16476	11151	3547	1363	227	10	4	39300
Total Green Power customers	188818	295182	252678	81166	7097	16917	57	13	841928
Net change in Green Power customers	-4004	-11899	-297	-2252	-189	497	0	0	-18144
Green Power sales to residential customers (MWh)	52603	73667	90568	20697	4857	7747	29	2	250169
Green Power sales to commercial customers (MWh)	62658	102491	57250	31390	8978	19601	135	9	282512
Total Green Power sales (MWh)	115261	176158	147818	52086	13835	27349	163	11	532681

Source: GreenPower, *National GreenPower Accreditation Program Status Report*, June 2010 Quarter. Available from www.greenpower.gov.au

The table below compares the number of Green Power customers in NSW in 2009 and 2010. It shows that the total number of customers fell by 23% between 2009 and 2010 despite an increase in the number of commercial customers. The exit of a major provider of green products from the National Electricity Product is believed to be a factor in the downturn.¹⁵

¹³ The Audit Office of NSW, *Electricity Industry Overview - Auditor-General's Report to Parliament 2010 Volume Four*, November 2010, p 10.

¹⁴ GreenPower, *National GreenPower Accreditation Program Status Report*, June 2010 Quarter, p 5.

¹⁵ The Audit Office of NSW, *Electricity Industry Overview - Auditor-General's Report to Parliament 2010 Volume Four*, November 2010, p 10.

Green Power customers, NSW

	2009	2010
Residential Green Power		
Customer numbers	239578	182296
Sales MWh	302301	242099
Commercial Green Power		
Customer numbers	5677	6522
Sales MWh	267596	278616
Total Green Power customer numbers	245255	188818
Total Green Power sales (MWh)	569897	520715

Source: The Audit Office of NSW, *Electricity Industry Overview - Auditor-General's Report to Parliament 2010 Volume Four*, November 2010, p 11.

7 ENERGY COSTS

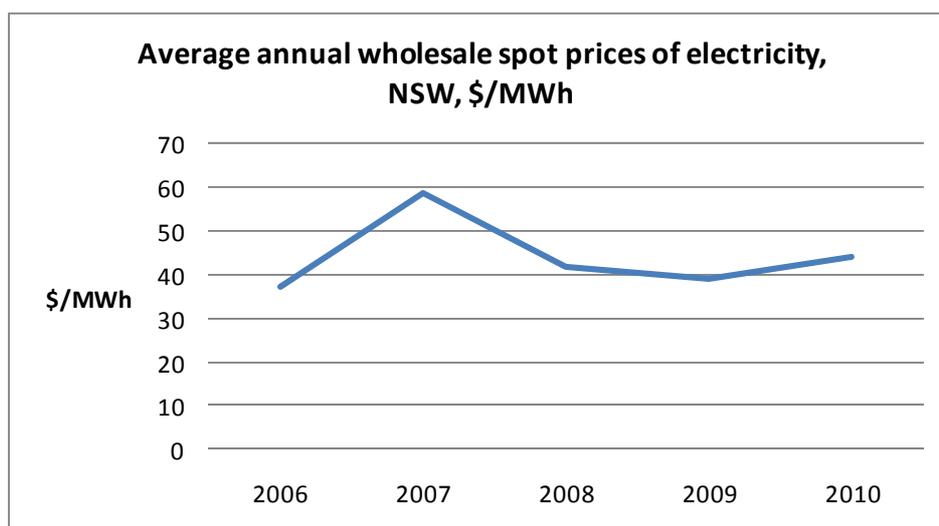
The following table compares the average annual wholesale spot prices of electricity in a selection of the Australian States. The NSW Auditor-General identified some of the factors that have contributed to an increase in the price of electricity in NSW including:

- Periods of high demand due to extreme weather events
- The effect of prolonged drought on generating capacity
- The number of planned and unplanned outages and constraints on the flow of electricity into NSW from other regions in the National Electricity Market.¹⁶

Average annual wholesale spot prices of electricity, \$/MWh

Year ended 30 June	NSW	VIC	QLD	SA	TAS
2006	37.24	32.47	28.12	37.76	56.76
2007	58.72	54.8	52.14	51.61	49.56
2008	41.66	46.79	52.34	73.5	54.68
2009	38.85	41.82	34	50.98	58.48
2010	44.19	36.28	33.3	33.31	29.37

Source: The Audit Office of NSW, *Electricity Industry Overview - Auditor-General's Report to Parliament 2010 Volume Four*, November 2010, p 6.



¹⁶ Auditor-General of NSW, *Auditor-General's Report to Parliament 2010, Volume Four - Electricity Industry Overview*, The Audit Office of NSW, November 2010, p 6.



8 WASTE

There are three major waste streams:¹⁷

1. Municipal waste – domestic and other council waste;
2. Construction and demolition waste; and
3. Commercial and industrial waste.

There is also hazardous waste such as spent chemicals, processing residues, contaminated raw materials, soil contaminated with chemicals, by-products from manufacturing and waste treatment, and unwanted raw materials.

It has been found that municipal waste generation is linked to population changes, whereas construction and commercial waste generation is more closely linked to economic conditions.

The following table looks at various facets of waste disposal in Sydney between 2001 and 2007. The amount of municipal waste per person in Sydney was 287 kg in 2007 (down from 349 kg in 2001 but up from the 272 kg reached in 2005). 98% of households are recycling waste and more than half of waste is recycled.

Waste disposal, NSW

		2001	2002	2003	2004	2005	2006	2007
Municipal per capita - Sydney	kg	349	340	321	302	272	278	287
Commercial/industrial per capita - Sydney	kg	578	523	550	580	600	593	549
Construction/demolition per capita - Sydney	kg	229	295	319	356	349	355	338
Total waste recycled - Sydney	%	-	-	48.4	-	48.6	-	54.3
Households that recycle waste	%	-	-	94.5	-	-	97.5	-

Source: ABS, *NSW State and Regional Indicators, December 2010*, 1338.1, January 2011.

Each NSW resident recycled on average in 2007-08:¹⁸

- 61.6 kg of paper and paper products
- 25.4 kg of glass
- 5.6 kg of plastic
- 2.6 kg of steel cans
- 0.98 kg of aluminium cans

68% of garden organics (green waste) across the Sydney Metropolitan Area and the Extended Regulated Area (ie the Hunter, Central Coast and Illawarra regions) is collected and recycled.

¹⁷ NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*, section 3.4.

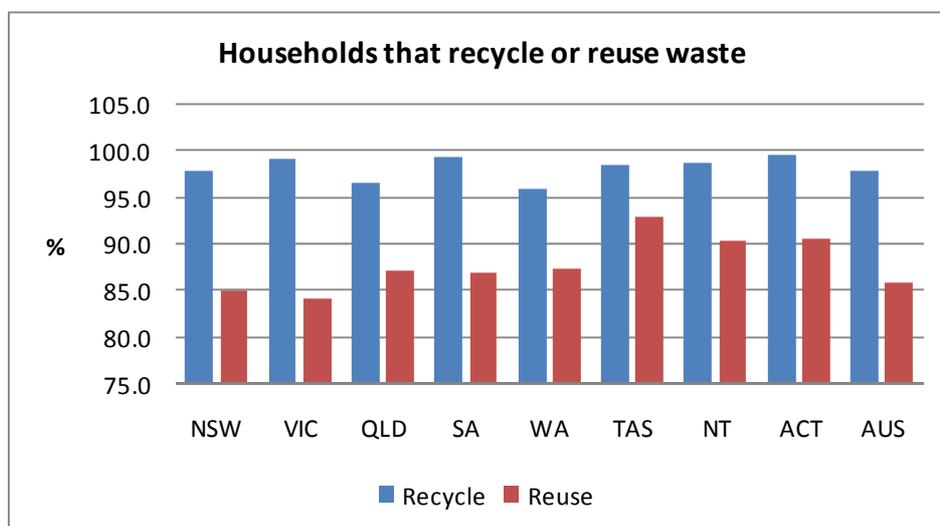
¹⁸ NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*, section 3.4.

Household waste recycling and reuse, 2009, %

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Households that recycle waste	97.9	99.1	96.6	99.3	95.9	98.4	98.7	99.5	97.9
Households that reuse waste	84.9	84.2	87.0	86.9	87.3	92.9	90.3	90.6	85.9
Households that neither recycle nor reuse	0.9	0.4	0.7	0.1	1.9	0.2	0.5	0.0	0.7

Source: ABS, *Environmental Issues: Waste Management and Transport Use, March 2009*, 4602.0.55.002, November 2009.

The proportion of households in NSW that recycle waste has increased from 94% of households in March 2000. At that time, 75.8% of households reused waste whereas the proportion in 2009 was 84.9%.



The overwhelming majority of people recycle. However, there is a small group of people who do not recycle anything. The following table notes the reasons people had for not recycling one item of waste in the previous 12 months. 95% of households who did not recycle in NSW said they did not use enough of materials to warrant recycling, no services or facilities were provided in 15% of cases, and 14% were not interested in recycling or thought it was too much effort.

Reasons why households did not recycle waste, 2009, %

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Doesn't use any or enough of materials to warrant recycling/ not appropriate	94.9	95.6	94.7	95.5	95.8	95.2	91.3	95.5	95.2
No services/facilities provided	14.6	9.2	15.9	9.1	16.3	8.5	18.4	14.4	13.1
No storage area in dwelling/yard	7.6	6.3	7.3	5.3	6.8	8.0	6.9	7.1	7.0
Inadequate services/facilities	1.7	1.5	3.5	1.5	1.9	1.4	3.3	1.0	2.0
Uncertain of services/facilities provided/cost	6.6	5.4	4.4	6.0	5.5	5.8	6.7	5.2	5.7
Not interested/too much effort	13.7	12.6	15.8	12.7	16.3	14.8	13.9	15.8	14.1
Other	1.9	3.8	3.1	2.1	2.8	4.2	-	-	2.8
No reason	9.3	10.4	11.2	14.5	9.7	10.2	-	-	10.5

Source: ABS, *Environmental Issues: Waste Management and Transport Use, March 2009*, 4602.0.55.002, November 2009.

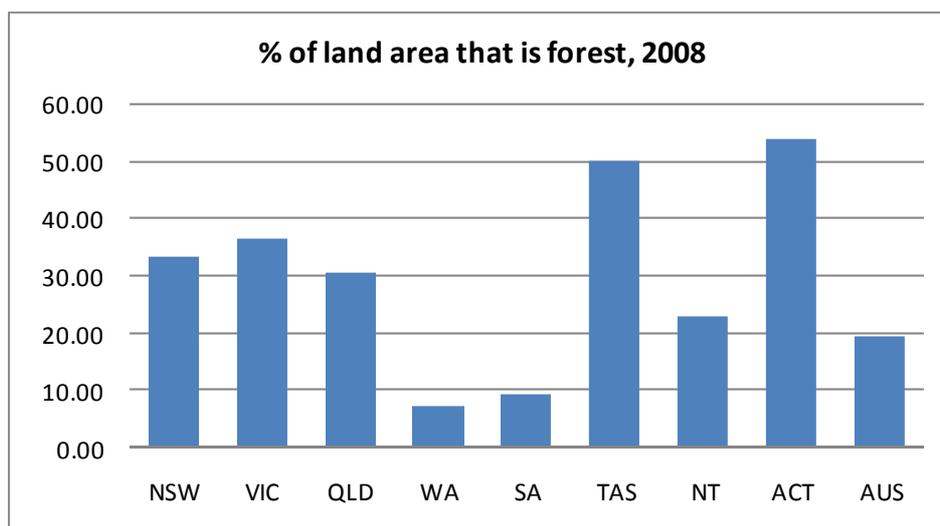
9 LAND

Almost one-third of land in NSW is forest with just under one-quarter of land in NSW being open forest and another 8% being woodland. The following table notes the amount and type of forest vegetation cover for each Australian State and Territory.

Land areas, by vegetation cover, 2008, '000 ha

	NSW	VIC	QLD	WA	SA	TAS	NT	ACT	AUS
Closed forest	505	242	2100	141	4	611	666	0	4270
(% of land area)	0.63	1.06	1.21	0.06	0	8.93	0.49	0	0.56
Open forest	19223	4 419	9 310	2 393	357	894	7 439	86	44120
(% of land area)	24.01	19.43	5.38	0.95	0.36	13.07	5.51	35.38	5.74
Woodland	6 480	3 177	41172	15130	8494	1610	22905	37	99007
(% of land area)	8.09	13.97	23.79	5.98	8.64	23.54	16.98	15.22	12.87
Plantation	383	424	256	425	183	309	32	8	2020
(% of land area)	0.48	1.87	0.15	0.17	0.19	4.52	0.02	3.24	0.26
Total forest vegetation cover	26591	8262	52838	18089	9038	3424	31042	131	149417
(% of land area)	33.21	36.33	30.53	7.15	9.19	50.06	23.01	53.83	19.42
Total land area	80064	22742	173065	252988	98348	6840	134913	243	769202

Source: ABARE, *Australian forest and wood products statistics, September and December quarters 2009, 2010*.



There are various types of protected areas in NSW, including national parks, nature reserves, Aboriginal areas, historic sites, conservation areas, state forests and wilderness areas. The following table lists the extent and types of terrestrial protected areas and changes to them since 2006.

Type of protected area	Description	Number of areas and size in ha	Change since January 2006
NSW national parks estate			
National parks	Large areas encompassing a range of ecosystem types, allowing for recreation that is compatible with the natural features of the parks	185 (5,017,361)	12 new national parks (increase of 106,895 ha)
Nature reserves	Areas of unique interest for biodiversity, generally smaller than national parks	396 (887,866)	6 new nature reserves (increase of 27,968 ha)
Aboriginal areas	Places of significance to Aboriginal people or sites containing relics of Aboriginal culture	14 (11,717)	2 new areas (increase of 13 ha)
Historic sites	Areas of national importance, including buildings, objects, monuments and landscapes	15 (3,066)	No change
State conservation areas	Areas it has been agreed are able to be managed for conservation, provide opportunities for sustainable visitor use and permit mining interests	110 (447,811)	15 new areas (increase of 99,765 ha)
Regional parks	Conserved areas in a natural or modified landscape which provide opportunities for recreation	14 (7,289)	3 new parks (increase of 1,760 ha)
Karst conservation reserves	Areas of limestone or dolomite characterised by landforms, such as caves and their decorative features, produced by solution, abrasion or collapse or by underground drainage	4 (4,565)	No new reserves, but an increase of 156 ha to existing reserves
Community conservation areas: Zone 1	As for national parks	27 (124,996)	No increase
Community conservation areas: Zone 2	As for Aboriginal areas	5 (21,618)	No increase
Community conservation areas: Zone 3	As for state conservation areas	19 (187,288)	No increase
Total		789 (6,713,577) 8.38% of NSW	236,558 ha
Wilderness declarations			
Wilderness areas	Remote and undisturbed areas of sufficient size to enable long-term preservation of their natural systems and biological diversity, currently gazetted over existing national parks and nature reserves	49 contiguous areas (2,057,759)	2 new wilderness areas and additions to three existing areas (increase of 138,902 ha)
Wild rivers	Waterways in near-pristine condition in terms of animal and plant life and water flow, and free of unnatural rates of siltation or bank erosion, currently gazetted over existing national parks and nature reserves	7	2
Reserved areas in state forests			
State forest dedicated reserve	Dedicated reserve (Special protection) managed to maximise protection of very high natural and cultural conservation values and not available for timber harvesting (Zones FMZ1 and PMP1.3)	25,636 ha (1.29% of total native forest estate)	Increase of 542 ha Five additional flora reserves set apart (2,262.5 ha), with some reserves transferred to national parks
State forest informal reserve: Special management	Informal reserve (Special management): Specific management and protection of natural and cultural conservation values where it is not possible or practical to include them in Zone 1. Not available for timber harvesting (Zones FMZ2 and PMP1.2)	169,658 ha (8.52% of total forest estate)	Reduction of 57,428 ha Transfer of tenure to national parks as part of the Western Regional Assessment
State forest informal reserve: Harvest exclusion	Informal reserve (Harvest exclusion): Management for conservation of identified values and/or ecosystems and their natural processes. Areas where harvesting is excluded but other management and production activities not permitted in Zone 1 or 2 may be appropriate such as grazing or mineral exploration (Zone FMZ3a)	283,340 ha (14.23% of total forest estate)	Decline of 35,907 ha Transfer of tenure to National parks as part of the Western Regional Assessment

Source: Department of Environment, Climate Change and Water NSW, *State of the Environment Report 2009*.

The following table notes the area of native vegetation in NSW that has been conserved, restored, managed or approved for clearing in each year since 2006.

Area of native vegetation that has been conserved, restored, managed or approved for clearing, ha

	2006	2007	2008	2009
New conservation areas	133,940	177,260	92,250	275,170
New restoration/revegetation of native vegetation	317,570	503,100	353,320	180,930
New management of native vegetation	482,210	1,343,130	661,390	1,039,270
New clearing of native vegetation	3,130	3,860	2,050	1,870

Source: NSW Department of Environment, Climate Change and Water, *NSW Annual Report on Native Vegetation, 2009*, p 4.

Land clearing involves cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning native vegetation.¹⁹ The *Native Vegetation Act 2003* (NSW) regulates land clearing in NSW. One of the objects of the Act is 'to prevent broadscale clearing unless it improves or maintains environmental outcomes' (section 3(b)).

The table below compares the amount of land cleared each year in each of the States and the Northern Territory.

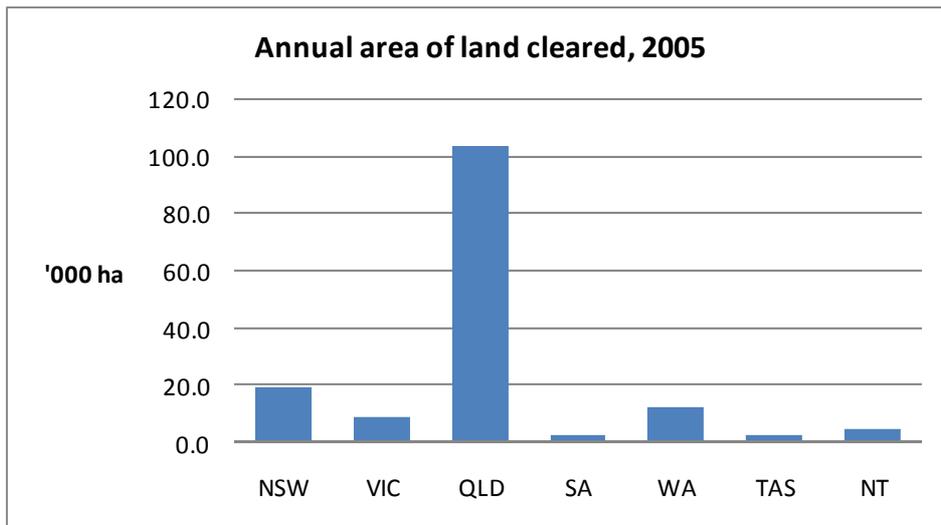
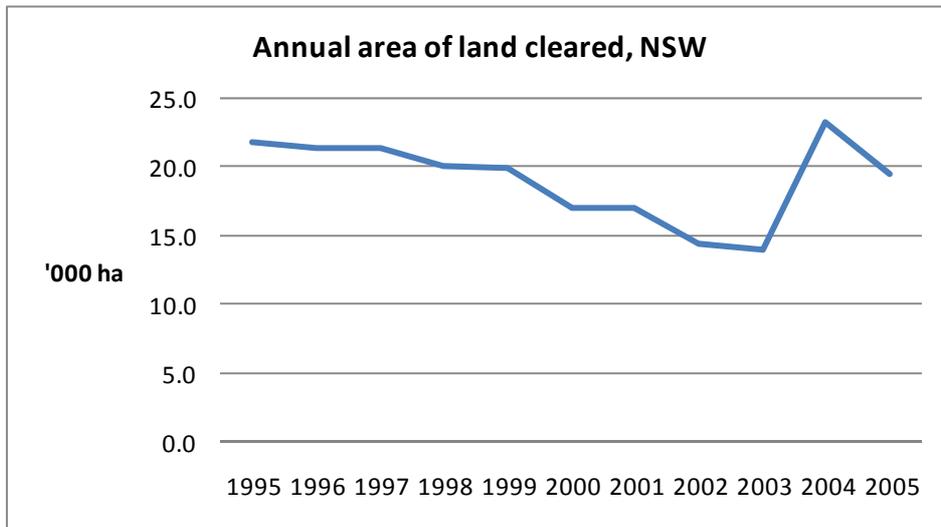
Annual area of land cleared – forest conversion, '000 ha

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
NSW	21.8	21.3	21.4	20.1	19.9	17.0	17.0	14.4	14.0	23.2	19.4
VIC	3.7	3.6	3.6	3.4	3.4	2.5	2.3	3.4	3.7	4.4	8.8
QLD	141.1	141.9	138.5	150.3	155.2	169.5	169.6	122.1	104.5	128.4	103.7
SA	3.0	2.9	2.9	2.7	2.6	2.4	2.6	1.9	1.8	2.3	2.5
WA	14.2	14.1	14.0	8.7	8.3	10.6	10.9	12.7	12.8	12.7	12.6
TAS	3.4	2.9	2.9	2.8	2.8	2.3	2.3	3.1	3.4	4.2	2.9
NT	1.2	1.5	1.4	0.7	0.7	0.6	0.6	0.7	0.8	1.3	4.4
AUS	186.9	186.7	183.2	186.8	190.8	202.6	203.0	156.1	139.0	174.0	152.4

NB Data for the ACT is not available.

Source: ABS, *Measures of Australia's Progress: Summary Indicators, 2009*, 1383.0.55.001, April 2009

¹⁹ Department of Environment, Climate Change and Water NSW, 'Clearing', www.environment.nsw.gov.au



10 WEEDS AND PESTS

Weeds and pests present numerous problems in NSW. It was noted in the *State of the Environment Report 2009* that:

Individually, widespread pest animals, such as feral cats and foxes, have a greater impact than individual weed species. However, collectively, the number of weeds is much greater and their combined impact is broader than the impact of pest animals. Weeds have a negative impact on 45% of threatened species, populations and ecological communities in NSW, while pest animals directly threaten 40% of them.²⁰

The following table notes the number of problems reported in NSW and ACT in relation to weed, pest and soil management on farms.

Weed, pest, and land soil management on farms – problems reported, NSW and ACT, 2006-07

Problems reported	'000	%
Weeds		
Decreased value of production	25.5	78.5
Decreased value of holding	12.6	38.9
Increased fire risk	10.5	32.5
Decreased native plant or animal populations and distributions	9.5	29.2
Poisoned stock (due to contaminated crops or pastures)	7.4	22.8
Pests		
Type of pest		
Feral and domestic animals	33.0	80.6
Native animal and bird pests	30.1	73.4
Insect pests	25.2	61.4
Other pests	17.2	42.0
Type of problem		
Decreased crop production or crop damage	21.6	63.7
Decreased livestock production	20.5	60.4
Decreased native plant or animal populations and distribution	11.2	32.9
Land and soil		
Erosion	14.7	52.5
Soil acidity	13.4	47.9
Soil compaction	11.8	42.0

Source: ABS, *NSW State and Regional Indicators, December 2010*, 1338.1, January 2011.

According to the *State of the Environment Report 2009*, 18% of parks in NSW are affected by weeds. Yet 90% of the area affected by weeds is effectively managed. 36% of parks experience problems with pests but 95% of the park area affected is effectively managed. 27% of parks are threatened by fire. Again, almost all of the park system threatened by fire is effectively managing

²⁰ Department of Environment, Climate Change and Water NSW, *State of the Environment Report 2009*, section 7.4.

the threat. The table below illustrates the extent and severity of the threat of weeds, pests and fire to the NSW park system.

Extent and severity of most commonly reported threats to terrestrial park values, NSW

Type of threat	Number of parks identifying this threat (total parks: 759)	Estimated proportion of parks affected (%)	Estimated extent of all threats (any level of threat) (ha)	Estimated extent of severe threat (ha)	Area of park system effectively managing threat (%)
Weeds	580	17.9	1,177,367	110,955	90
Pests	470	35.9	2,356,613	163,674	95
Fire	343	26.6	1,747,297	174,130	94

Source: Department of Environment, Climate Change and Water NSW, *State of the Environment Report 2009*.

11 THREATENED SPECIES

The following table notes the number of threatened plant and animal species, and the number of endangered ecological communities in NSW between 2001 and 2009. The number of threatened animal species increased by 21% in that time to reach 353 species, the number of threatened plant species grew by 23% to 663 species and the number of endangered ecological communities grew by 115% so that there were 101 threatened communities in 2009.

Number of threatened plant and animal species, endangered ecological communities, NSW

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Threatened species – Animals	291	296	302	326	316	317	336	346	353
Threatened species – Plants	539	573	587	615	608	609	664	654	663
Endangered ecological communities	47	60	63	66	80	81	84	93	101

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1338.1, January 2011.

The table below provides more detail on the constitution of the number of threatened plant and animal species and endangered ecological communities.

Number of threatened species, NSW, 2010

	Species status					Total
	Presumed extinct	Critically endangered	Endangered	Endangered population	Vulnerable	
Animals						
Fish	2	4	10	3	4	23
Amphibians	0	4	12	1	12	29
Reptiles	1	0	16	1	24	42
Birds	12	11	22	7	90	142
Mammals	25	2	16	10	39	92
Marine mammals	0	0	2	0	5	7
Invertebrates	1	1	15	1	0	18
<i>Total animals</i>	<i>41</i>	<i>22</i>	<i>93</i>	<i>23</i>	<i>174</i>	<i>353</i>
Plants						
Terrestrial plants	34	37	335	23	231	660
Marine plants	1	1	0	1	0	3
<i>Total plants</i>	<i>35</i>	<i>38</i>	<i>335</i>	<i>24</i>	<i>231</i>	<i>663</i>
Fungi	0	0	5	0	4	9
Total	76	60	433	47	409	1,025
Ecological communities	0	7	91	0	3	101

Source: ABS, *NSW State and Regional Indicators*, December 2010, 1383.1, January 2011.

12 CATCHMENTS

The following table reveals the rating given to each region in terms of the condition of the catchment area. Information on the riverine ecosystem, marine waters and ecosystem, and groundwater is also available for each region. However, as an overall rating was not provided regarding their condition, they have not been included in the table below.

State of the catchments 2010 – Condition rating

Region	Wetlands	Estuaries and coastal lakes	Notes
Border Rivers - Gwydir	Very poor	na	Greatest pressure on wetlands is from catchment and habitat disturbance caused by vegetation clearing/modification in the catchment, grazing and feral animals.
Central West	Poor	na	Greatest pressure on wetlands is from catchment and habitat disturbance caused by vegetation clearing/modification in the catchment, grazing and feral animals, and impoundments.
Hawkesbury-Nepean	Very poor	Fair	Greatest pressure on wetlands is from habitat disturbance caused by feral animals, grazing and roads crossing or adjoining wetlands. Main pressures on the estuaries and coastal lakes occur along the more highly developed Sydney Metropolitan area coastline.
Hunter-Central Rivers	Very poor	Good	Greatest pressure on wetlands is from habitat disturbance caused by feral animals, recreational facilities in the wetlands and fringing zones, and roads crossing or adjoining the wetland.
Lachlan	Very poor	na	Greatest pressure on wetlands is from catchment disturbance caused by vegetation clearing/modification in the catchment, point sources, grazing and impoundments without fish passage.
Lower Murray Darling	Poor	na	Greatest pressure on wetlands is from catchment and hydrological disturbance caused by river regulation, impoundments without fish passage, vegetation clearing/modification in the catchment and point sources.
Murray	Poor	na	Greatest pressure on wetlands is from catchment and hydrological disturbance caused by river regulation, impoundments, vegetation clearing/modification in the catchment, low percentage of protection for wetlands and point sources.
Murrumbidgee	Very poor	na	Greatest pressure on wetlands is from habitat disturbance caused by feral animals, grazing, vegetation clearing/modification in the catchment and lack of protection of the wetlands.
Namoi	Poor	na	Greatest pressure from catchment and habitat disturbance caused by vegetation clearing/modification in the catchment, catchment land-use, ground water bores and lack of protection of wetlands.

Northern Rivers	Very poor	Good	Greatest pressure on wetlands is from catchment habitat disturbance caused by land use and vegetation clearing in the catchment, feral animals and recreational facilities in the wetlands and fringing zones. Main pressures on the estuaries and coastal lakes occur along the more developed and populated northern and central parts of the region.
Southern Rivers	Very poor	Good	Greatest pressure on wetlands is from catchment and habitat disturbance caused by high vegetation clearing in the catchment, grazing and feral animals. Main pressures on the estuaries and coastal lakes occur along the more developed and populated northern part of the region, around the Illawarra, Nowra and Ulladulla.
Sydney Metropolitan	Very poor	Fair	Greatest pressure on wetlands is from habitat disturbance caused by vegetation clearing/modification and infrastructure in the catchment, roads crossing or adjoining the wetland, and feral animals. The main pressures on estuaries and coastal lakes occur along the more highly developed Sydney Metropolitan area coastline.
Western	Very poor	na	Greatest pressure from catchment and habitat disturbance caused by vegetation clearing/modification in the catchment, feral animals and impoundments in the catchment.

Source: NSW Department of Environment, Climate Change and Water, *State of the Catchments 2010 Reports - Overview* for each region.

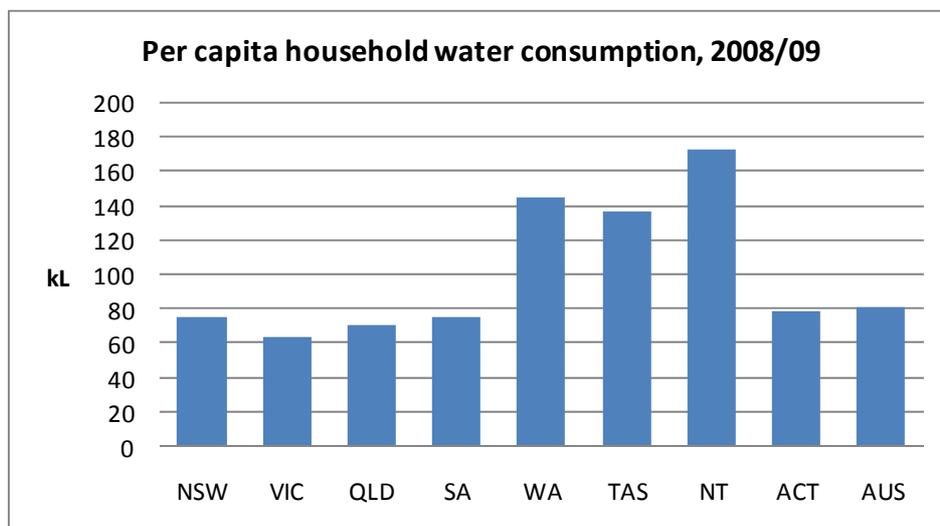
13 WATER CONSUMPTION, STORAGE AND AVAILABILITY

In 2008/09, each person in NSW consumed 75kL of household water. This was the third lowest per capita consumption in Australia, with only Queensland and Victoria consuming less per person.

Water Consumption – Summary, 2008/09

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
By industry (GL)	4026	2649	3043	1046	1045	387	115	21	12333
By households (GL)	536	342	308	122	326	69	39	27	1768
Total (GL)	4562	2991	3351	1168	1371	456	154	48	14101
Per capita/ Total water consumption (kL)	639	549	757	719	611	906	681	137	642
Per capita/ Household water consumption (kL)	75	63	70	75	145	136	173	78	81

Source: ABS, *Water Account, Australia, 2008-09*, 4610.0, November 2010

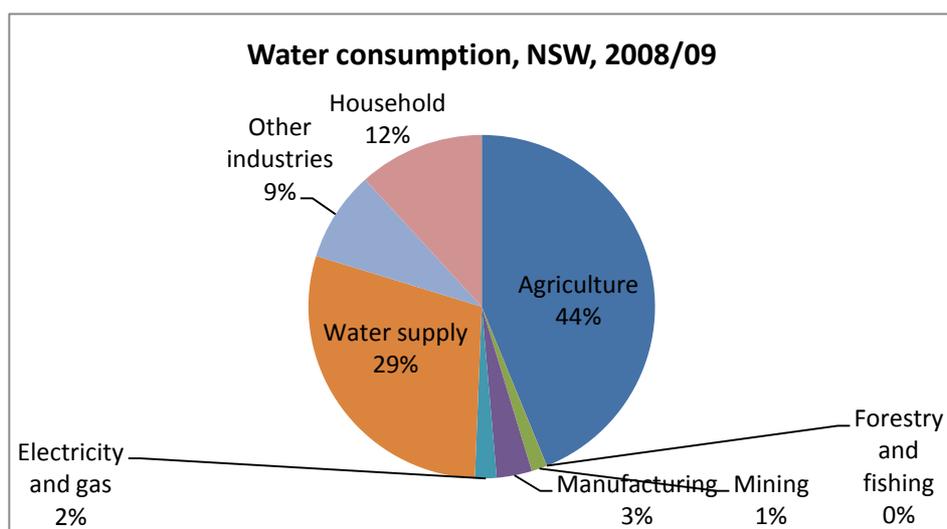


Agriculture was responsible for 44% of water consumption in NSW in 2008/09, and water supply consumed another 29%. Household consumption constituted 12% of total water consumption in NSW.

Water consumption, 2008/09, GL

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Agriculture	2001	1435	2144	788	325	264	35	2	6996
Forestry and fishing	1	1	6	2	89	3	-	-	101
Mining	66	6	118	22	257	18	21	-	508
Manufacturing	150	158	148	88	61	50	22	-	677
Electricity and gas	92	123	82	2	27	-	1	-	328
Water supply	1329	558	297	64	111	22	9	7	2396
Other industries	387	367	249	79	176	30	27	11	1327
Household	536	342	308	122	326	69	39	27	1768
Total	4562	2991	3351	1168	1371	456	154	48	14101

Source: ABS, *Water Account, Australia, 2008-09*, 4610.0, November 2010



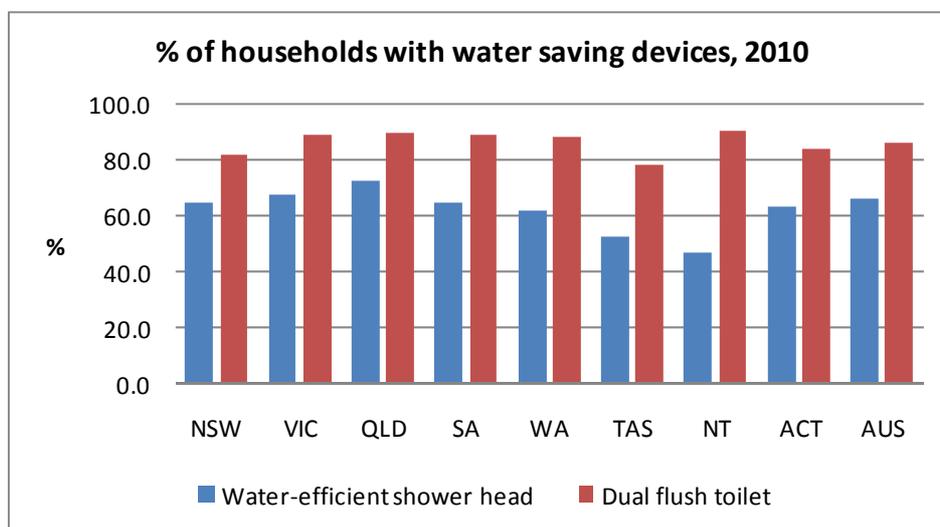
14 WATER SAVING PRODUCTS

There are a number of options when it comes to saving water, including the use of water-efficient shower heads, dual flush toilets and rain water tanks. The following table compares the proportion of households using water saving products in 1998 with that in 2010. Interstate comparison is also made. 65% of households in NSW used water-efficient shower heads in 2010 compared to 30% in 1998. 82% used dual flush toilets, yet in 1998 they were used by only 46% of households. However, NSW remains below the Australian average for the use of these products.

Households with water saving products, %

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
March 2010									
Water-efficient shower head	64.9	67.4	72.2	64.5	61.4	52.5	46.9	63.5	66.1
Dual flush toilet	81.9	88.6	89.9	89.0	88.0	78.0	90.0	83.9	86.3
March 1998									
Water-efficient shower head	30.0	31.7	34.1	33.5	37.7	32.3	28.0	32.6	32.3
Dual flush toilet	46.2	64.2	53.1	63.2	63.1	48.1	63.0	48.1	55.2

Source: ABS, *Environmental Issues: Water Use and Conservation, March 2010*, 4602.0.55.003, November 2010.

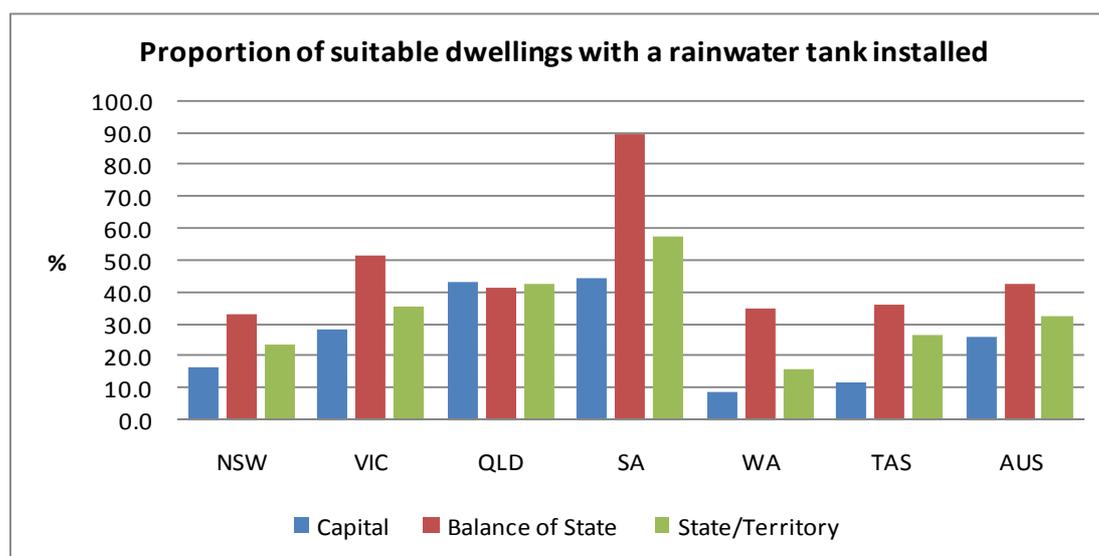


The following table compares the proportion of dwellings that have installed rainwater tanks (of those dwellings that can) between 2007 and 2010 for each of the States and Territories. 16.3% of suitable dwellings in Sydney in 2010 had installed a rainwater tank (up from 10.3% in 2007). However, the proportion is much greater in the rest of NSW where 33.1% of suitable dwellings had installed a rainwater tank (down from 33.5% in 2007). NSW is well under the Australian average for installation of rainwater tanks.

% of dwellings that have installed rainwater tanks of those dwellings suitable for a rainwater tank

	Capital city		Balance of state/territory		Total state/territory	
	2007	2010	2007	2010	2007	2010
NSW	10.3	16.3	33.5	33.1	20.5	23.7
VIC	11.6	28.2	43.6	51.7	21.4	35.5
QLD	18.4	43.4	31.9	41.5	25.8	42.3
SA	44.5	44.6	78.6	89.3	53.8	57.2
WA	8.1	8.4	38.1	34.7	15.8	15.9
TAS	14.6	11.5	31.7	36.2	24.7	26.6
NT	0	0	0	0	7.3	9.1
ACT	0	0	0	0	8.2	17.7
AUS	15.4	25.7	38	42.8	24	32.2

Source: ABS, *Environmental Issues: Water Use and Conservation*, March 2010, 4602.0.55.003, November 2010.



Almost half of the households in NSW who installed a rainwater tank did so to save water. About 1/5 did so because they are not connected to mains water.

Reasons why rainwater tank was installed, 2010, %

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
To save water	46.3	54.3	42.0	49.9	35.3	31.1	44.0	61.9	47.2
Not connected to mains water	19.1	12.2	18.3	15.2	35.7	51.3	-	-	17.8
Water restrictions on mains water	16.5	38.6	24.9	11.9	4.8	-	-	36.9	24.0
Concerns about quality of mains water	10.2	4.7	8.5	16.6	20.5	11.2	17.8	0.0	9.4
To save on water costs	12.6	13.6	17.8	17.3	11.5	10.0	-	-	14.9
Water tank rebates	4.7	2.1	20.4	0.6	2.6	0.0	-	-	7.5
Other	24.8	20.7	26.2	25.0	22.2	13.3	26.4	28.7	23.7

Source: ABS, *Environmental Issues: Water Use and Conservation*, March 2010, 4602.0.55.003, November 2010.

15 FISHING STOCKS

The table below notes the status of various NSW fish stocks and the extent to which they have been fished.

Species	Exploitation status 2006-07*	Commercial catch trend 2004-05 to 2007-08**	Abundance trend 2004-05 to 2007-08**
Marine and estuarine finfish species			
Yellowfin bream	Fully fished	Stable	Stable
Dusky flathead	Fully fished	Increasing	Stable
Sand whiting	Fully fished	Stable	Stable
Luderick	Moderately fished	Stable	Stable
River eels	Some catchments fully fished	Stable	Increasing
Sea mullet	Fully fished	Stable	Stable
Yellowtail scad	Fully fished	Stable	Increasing
Blue mackerel	Moderately fished	Decreasing	No data
Snapper	Growth overfished	Stable	Increasing
Yellowtail kingfish	Growth overfished	Stable	Stable
Blue-eye trevalla	Moderately fished	Stable	Stable
Gemfish	Overfished	Stable	Stable
Silver trevally	Growth overfished	Decreasing	Stable
Eastern sea garfish	Overfished	Decreasing	Stable
Leatherjackets	Fully fished	Stable	Stable
Mulloway	Overfished	Stable	Stable
Marine and estuarine shellfish species			
Abalone	Fully fished or affected by parasite perkinsis	Quota dependent	Decreasing
Eastern rock lobster	Fully fished	Quota dependent	Increasing
Eastern king prawn	Growth overfished	Stable	Increasing
School prawns	Growth overfished	Increasing	Increasing
Spanner crabs	Fully fished	Stable	Stable
Bugs	Fully fished	Decreasing	Decreasing
Blue swimmer crabs	Fully fished	Stable	Decreasing

* Exploitation status:

Moderately fished: the stock is likely being fished at a level that may allow for a limited increase in the commercial or recreational catch.

Fully fished: catches are likely to be sustainable, but there is little scope for increases in either the recreational or commercial catch.

Growth overfished: fish are being harvested at a size smaller than the biological and economic optimum. Although growth overfishing can be sustainable, additional monitoring and assessment is required.

Overfished: current fishing levels are unlikely to be sustainable and yield would be higher in the long term if the fishing pressure was reduced until the population recovered.

Undefined: there is currently little information about the status of this stock which would enable a credible determination of stock status to be made.

**** Catch or abundance trend:** a qualitative indication about the relative trend in commercial catch or abundance. Abundance is inferred from catch corrected for effort (or catch per unit effort) from passive fishing gear, such as fish traps.

Source: NSW Department of Environment, Climate Change and Water, *State of the Environment Report 2009*, December 2009.

The NSW Fisheries Scientific Committee determined the following as endangered, critically endangered or vulnerable fish, aquatic invertebrates or marine vegetation under the *Fisheries Management Act 1994* (NSW) as at 17 December 2010 (schedules 4, 4A and 5):

Endangered species	Critically endangered species	Vulnerable species
Adam's emerald dragonfly	Grey nurse shark	Silver perch
Sydney hawk dragonfly	Murray hardyhead	Buchanans fairy shrimp
Eastern freshwater cod	Flathead galaxias	Great white shark
Trout cod	Marine slug	Black cod
Macquarie perch	Marine brown alga	
Purple spotted gudgeon		
Southern pygmy perch		
Oxleyan pygmy perch		
River snail		
Southern bluefin tuna		

NB: 'Critically endangered' means a species faces an extremely high risk of extinction in the immediate future.

'Endangered' means a species faces a very high risk of extinction in the near future.

'Vulnerable' means a species faces a high risk of extinction in the medium term future.

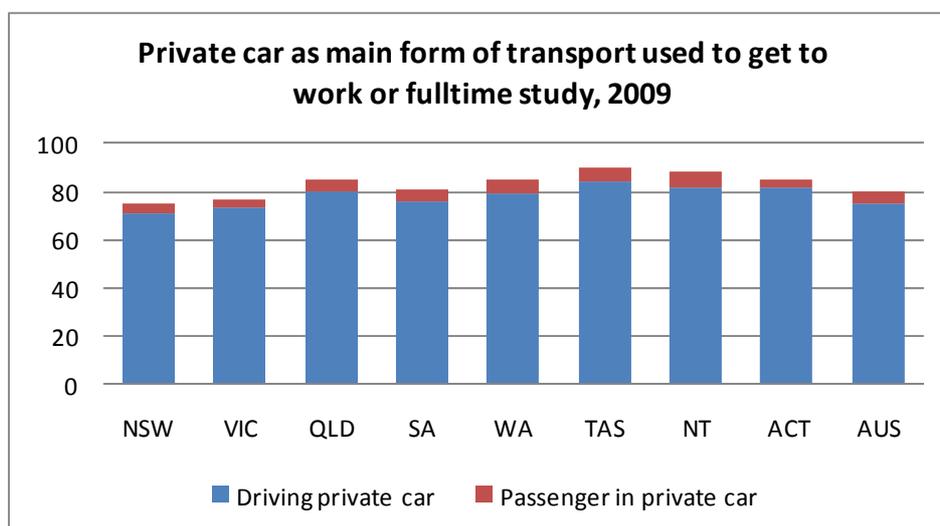
16 PUBLIC TRANSPORT

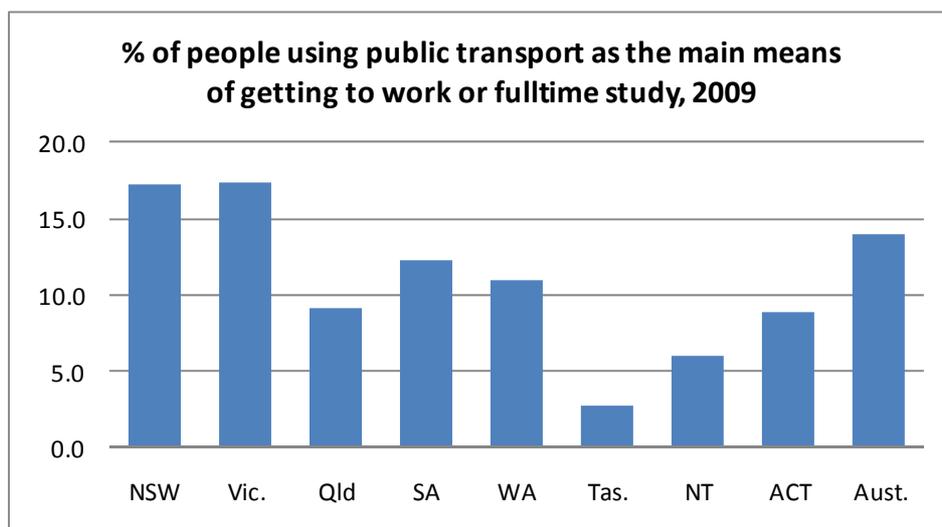
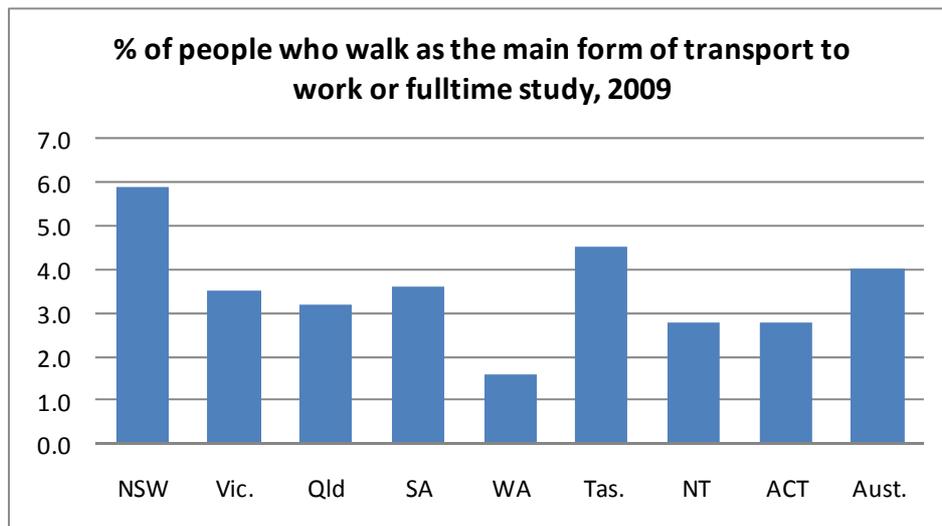
The table below notes the proportion of people in each State and Territory using a particular mode of transport on a usual trip to work or fulltime study in 2009. 75% of people in NSW travelled in a private motor vehicle, whether as a driver or passenger, the lowest proportion of the States and Territories. 6% of people in NSW walked to work or study, the highest proportion of any State or Territory. 17% of people in NSW used public transport as their main method of transport, the highest proportion in Australia (together with Victoria).

Main form of transport used to get to work or fulltime study, 2009, %

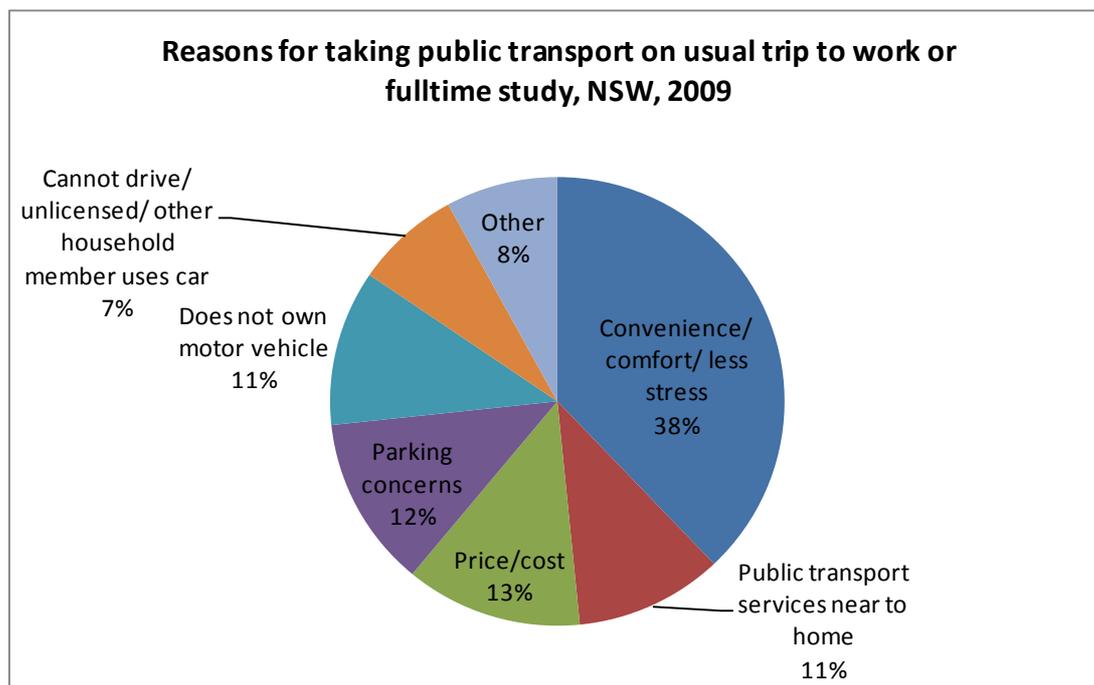
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Private motor vehicle as driver/rider	71	73	80	76	79	84	82	82	75
Private motor vehicle as passenger	4	4	5	5	6	6	6	3	5
Public transport	17	17	9	12	11	3	6	9	14
Bicycle	1	1	1	3	1	2	3	3	2
Walk	6	4	3	4	2	5	3	3	4
Other	1	1	1	0	2	2	1	1	1

Source: ABS, *Environmental Issues: Waste Management and Transport Use, March 2009*, 4602.0.55.002, November 2009.





38% of people who took public transport on their usual trip to work or fulltime study in NSW in 2009 did so for the convenience, comfort and less stress involved. 13% of people used public transport because of the price/cost and 12% because of parking concerns.



However, that leaves 83% of people in NSW who do not use public transport to travel to work or study. When the reasons for not taking public transport are considered, the lack of a service or a service not being available at a convenient time featured for more than a quarter of the survey respondents (see table below). Almost 20% believe the travel time is too long and 20% prefer the convenience, comfort and privacy of a private vehicle.

Reasons for not taking public transport on usual trip to work or full-time study, %

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
No service available at all	25.2	26.0	28.7	25.7	24.2	25.4	22.1	5.9	25.6
No service available at right/convenient time	25.1	24.4	30.3	26.4	25.9	37.9	19.8	37.8	26.7
Public transport services too far from home	4.6	5.3	5.0	3.4	4.6	5.4	6.5	1.6	4.7
Travel time too long	19.1	21.2	12.8	19.5	18.0	5.2	10.3	27.4	17.9
Cost considerations	2.1	1.5	1.8	2.0	1.5			5.7	1.9
Convenience/comfort/privacy in private vehicle	19.9	21.9	19.5	23.4	27.8	24.8	38.0	32.3	22.0
Own vehicle needed before/during/after hours	9.9	9.3	9.2	8.1	12.8	8.9	17.6	12.3	9.9
Company or employer's vehicle needed during work/study hours	6.3	4.3	6.8	3.2	5.6	5.3	3.2	3.7	5.5
Carry equipment/tools/passengers	6.2	5.4	8.9	6.0	8.4	4.5	4.7	7.8	6.8
Reliable parking near/ at place of work or study	0.9	1.2	0.8	0.8	2.9		0.0		1.2
Prefer to walk/cycle	5.3	3.9	2.5	2.2	1.3	5.3	4.3	5.4	3.7
Concerned about personal safety	1.6	0.8	0.9	1.3	2.3		2.5		1.3
Other	4.8	4.5	3.4	4.9	2.6	1.4	4.0	2.5	4.1

Source: ABS, *Environmental Issues: Waste Management and Transport Use, March 2009*, 4602.0.55.002, November 2009.

17 ENVIRONMENTAL OFFENCES

The following table lists the number of penalty notices that were issued by the NSW Department of Environment, Climate Change and Water (DECCW) and local governments under the Environment Protection Authority legislation in 2009/10. The DECCW issued 1574 notices equating to approximately \$625,700 in fines and other authorised officers issued 5194 fines worth about \$2,030,335. The most common offence involved littering from motor vehicles.

Infringement	DECCW authorised officers	Local and NSW government authorised officers
Air: Smoky vehicles - POEO* (Clean Air) Regulation	302	4
Air: Other air offences from vehicles - POEO Act, POEO (Clean Air) Regulation	41	0
Air and odour: All non-vehicle offences - POEO Act, POEO (Noise Control) Regulation	5	2
Noise: Noisy vehicles - POEP (Noise Control) Regulation	188	94
Noise: All non-vehicle offences - POEO Act, POEO (Noise Control) Regulation	6	22
Waste: Littering (from motor vehicles) - POEO Act	857	2577
Waste: Aggravated littering (motor vehicle related) - POEO Act	0	27
Waste: Littering (other than motor vehicles) - POEO Act	0	1233
Waste: All offences - POEO Act, POEO (Waste) Regulation	36	206
Water: All offences - POEO Act	7	593
Dangerous goods: All offences - Road Transport Reform (Dangerous Goods) (NSW) Regulations, Rail Transport Reform (Dangerous Goods) (NSW) Regulations	2	0
Pesticides: All offences - Pesticides Act and Regulation	22	0
Native vegetation: All offences - Native Vegetation Act	20	0
Threatened species: All offences - Threatened Species Conservation Regulation	3	0
Radiation: All offences - Radiation Control Act and Regulation	17	0
Ozone: All offences - Ozone Protection Act and Regulation	0	0
Other offences (eg contravene a condition of a licence) - POEO Act, POEO (General) Regulation	68	436
Total penalty infringement notices issued	1574	5194
Total value of fines imposed (estimates only)	\$625,700	\$2,030,335

*POEO = Protection of the Environment Operations

Source: NSW Department of Environment, Climate Change and Water, *Annual Report 2009/10*, p 262.

The Department of Environment, Climate Change and Water can commence prosecutions for environment protection offences, as well as for offences under native vegetation, threatened species, parks, wildlife, Aboriginal heritage and water legislation. 139 such prosecutions were commenced in 2009/10 with 134

completed resulting in:

- 114 convictions;
- 7 matters where the offence was proven but no conviction recorded;
- 8 acquittals; and
- 5 charges dealt with under s 32 of the *Mental Health (Forensic Provisions) Act 1990*.