



Australian Government

**Department of Industry, Science,
Energy and Resources**

Australian Energy Statistics, Table O

Australian electricity generation, by fuel type, physical units

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AUS	NSW	VIC	QLD	WA	SA	TAS	NT
Financial year	Financial year	Financial year	Financial year	Financial year	Financial year	Financial year	Financial year
Calendar year	Calendar year	Calendar year	Calendar year	Calendar year	Calendar year	Calendar year	Calendar year

State Summary

Financial year
Calendar year

Batteries

Australian electricity supplied from utility-scale battery storage

Table O1
Australian electricity generation, by fuel type, physical units

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)	
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh		
Non-renewable fuels																															
Black coal	87,573.0	89,511.0	94,325.1	97,872.7	100,544.1	102,522.1	106,089.6	109,452.2	116,969.5	118,586.3	123,833.5	134,264.0	116,774.7	115,296.6	121,182.3	127,788.5	130,231.6	132,368.5	129,569.3	127,270.5	123,724.5	116,948.8	116,654.4	111,491.1	106,965.5	107,639.4	114,295.0	118,272.3	121,702.3	119,490.7	
Brown coal	33,594.0	36,048.0	34,559.0	33,248.0	34,890.0	35,832.0	39,427.0	41,893.0	46,633.0	49,703.0	50,200.0	52,223.0	56,493.0	55,160.3	55,572.8	53,377.8	54,552.8	54,375.8	54,658.7	56,981.4	56,068.3	55,298.1	55,067.7	47,555.1	46,076.2	50,970.3	48,795.9	43,557.8	36,008.4	34,461.3	
Natural gas	14,359.0	10,772.0	11,633.0	12,295.0	12,199.0	14,913.0	12,445.0	11,426.0	12,934.0	16,001.0	16,245.0	17,271.0	31,730.0	29,375.3	30,919.4	23,802.9	22,725.9	31,849.9	34,955.8	37,660.4	44,585.4	48,996.2	48,571.6	51,053.4	54,393.9	52,916.9	50,536.1	50,459.7	53,881.7	52,387.4	
Oil products	3,552.0	3,396.0	2,362.0	2,421.0	2,320.0	2,738.0	2,805.0	2,175.0	1,821.0	1,729.0	1,784.0	2,044.0	2,446.0	1,661.0	1,388.7	2,841.0	3,058.0	2,893.0	4,058.0	3,388.0	3,106.8	3,093.8	2,702.5	4,464.3	5,012.4	6,828.5	5,655.6	5,272.6	4,904.5	5,780.5	
Other ^a														1,792.2	1,817.0	434.0	517.0	479.0	106.0	3,579.9	2,991.0	2,716.1	1,088.1	1,945.3							
Total non-renewable	139,078.0	139,727.0	142,879.1	145,836.7	149,953.1	156,005.1	160,766.6	164,946.2	178,357.5	186,019.3	192,062.5	205,802.0	207,443.7	203,285.4	210,880.2	208,244.2	211,085.3	221,966.2	223,347.8	228,880.1	230,476.0	227,053.0	224,084.2	216,509.2	212,448.0	216,355.1	219,282.5	217,562.4	216,496.8	212,119.9	
Renewable fuels																															
Biomass	750.0	769.0	670.0	670.0	670.0	723.0	928.0	965.0	1 029.0	1 133.0	1 134.0	645.0	950.0	1 583.6	1 799.5	3 830.0	3 911.0	3 953.0	4 596.0	2 795.2	2 777.4	2 101.7	3 043.7	3 143.5	3 499.4	3 592.2	3 789.9	3 500.5	3 517.7	3 557.9	
Wind						4.0	7.0	7.0	7.0	8.0	28.0	58.0	210.0	364.0	703.1	705.0	885.0	1,713.1	2,611.1	3,093.1	3,823.8	5,051.7	6,084.9	6,969.7	7,959.6	10,252.0	11,466.6	12,199.5	12,597.0	15,174.4	17,930.7
Hydro	14,880.0	16,103.0	15,768.0	16,953.0	16,649.0	16,239.0	15,731.0	16,852.0	15,733.0	16,563.0	16,720.0	16,933.0	16,054.0	16,490.0	16,331.1	15,612.2	16,029.2	14,517.0	12,056.9	11,869.4	13,548.7	16,806.7	14,083.3	18,269.6	18,421.0	13,445.0	15,318.2	16,284.9	16,020.8	15,949.9	
Large-scale solar PV																															
Small-scale solar PV ^b				10.9	13.3	15.9	18.9	23.4	27.8	33.5	37.7	43.5	50.0	58.3	58.3	68.1	77.8	90.3	104.7	122.8	155.6	424.9	1,530.4	2,558.7	3,826.3	4,366.3	5,424.1	6,381.0	7,399.3	8,922.4	11,115.7
Geothermal																0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.0	
Total renewable	15,630.0	16,872.0	16,448.9	17,636.3	17,338.9	16,987.9	16,689.4	17,851.8	16,803.5	17,761.7	17,955.5	17,838.0	17,426.3	18,835.0	18,904.2	20,405.5	21,744.1	21,186.3	19,869.3	18,644.5	21,803.1	26,524.2	26,656.0	33,199.4	36,588.7	34,035.7	38,146.0	40,454.6	44,642.8	52,286.6	
Total	154,708.0	156,599.0	159,328.0	163,473.0	167,292.0	172,993.0	177,456.0	182,798.0	195,161.0	203,781.0	210,018.0	223,640.0	224,870.0	222,120.4	229,784.4	228,649.7	232,829.4	243,152.5	243,217.1	247,524.7	252,279.1	253,577.2	250,740.2	249,708.6	249,036.7	252,390.7	257,428.6	258,017.0	261,139.7	264,406.5	

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal	111,628.3	115,331.6	120,864.6	120,583.1	116,359.0
Brown coal	50,547.9	46,990.9	38,276.7	35,961.4	33,136.8
Natural gas	50,883.1	48,533.1	55,329.1	51,373.8	54,357.5
Oil products	6,163.1	5,553.8	5,226.0	5,422.2	5,782.8
Total non-renewable	219,222.4	216,409.4	219,696.3	213,340.6	209,636.1
Renewable fuels					
Bioenergy	3,677.6	3,652.9	3,530.4	3,554.3	3,575.9
Wind	11,838.5	13,026.4	13,195.2	16,411.5	19,524.5
Hydro	14,206.3	17,927.8	13,750.2	17,491.9	14,429.9
Large-scale solar PV	283.5	593.9	825.4	2,338.7	5,495.4
Small-scale solar PV	5,923.0	6,880.9	8,132.0	9,940.5	12,455.3
Geothermal	0.4	0.4	0.3	0.0	0.0
Total renewable	35,929.3	42,062.2	39,433.4	49,737.0	55,481.0
Total	255,151.7	258,491.6	259,129.7	263,077.6	265,117.1

Totals may not add due to rounding.
^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.
^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.
(e) estimate only, see method note

Table O2
Electricity generation in New South Wales, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal	67,650.3	64,398.6	60,732.2	60,453.7	56,798.6	55,819.5	52,562.2	55,334.5	55,967.1	57,022.2	57,711.1
Brown coal											
Natural gas	2,445.1	4,681.3	4,742.7	4,212.1	5,168.7	5,528.3	4,528.4	4,628.6	3,330.8	3,045.8	2,338.5
Oil products	24.7	5.6	61.4	42.1	190.9	170.7	284.3	289.5	321.6	335.6	326.7
Other ^a	336.6	493.6	266.1								
Total non-renewable	70,456.7	69,579.1	65,802.4	64,707.9	62,158.2	61,518.5	57,374.9	60,252.6	59,619.5	60,403.6	60,376.3
Renewable fuels											
Biomass	674.7	681.1	613.3	822.3	838.8	882.3	1 023.2	1 046.3	1 102.7	1 189.4	1,171.5
Wind	41.3	432.5	530.1	697.6	832.6	899.2	1,376.0	1,898.8	1,872.0	2,431.6	3,836.7
Hydro	3,173.7	3,820.8	5,267.0	3,792.8	5,651.6	4,213.1	3,113.7	5,191.0	6,139.1	4,928.7	3,679.0
Large-scale solar PV						10.6	60.2	399.5	567.6	700.0	1,348.2
Small-scale solar PV ^b	36.3	119.2	526.3	657.7	857.6	964.9	1,211.2	1,461.9	1,706.8	2,095.8	2,714.3
Geothermal											
Total renewable	3,926.0	5,053.6	6,936.7	5,970.4	8,180.6	6,970.1	6,784.3	9,997.6	11,388.3	11,345.5	12,749.7
Total	74,382.7	74,632.7	72,739.1	70,678.3	70,338.8	68,488.6	64,159.2	70,250.2	71,007.8	71,749.1	73,126.0

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal	54,528.2	54,111.0	57,461.9	57,245.4	56,431.9
Brown coal					
Natural gas	4,933.8	3,542.8	3,882.4	2,281.7	2,989.6
Oil products	290.4	312.0	366.1	363.4	327.7
Total non-renewable	59,752.5	57,965.8	61,710.3	59,890.5	59,749.3
Renewable fuels					
Biomass	1,027.2	1,051.0	1,134.4	1,165.6	1,191.3
Wind	1,722.1	2,064.5	1,944.9	3,123.2	4,385.6
Hydro	3,636.7	7,137.9	4,056.8	4,982.7	3,420.1
Large-scale solar PV	228.2	507.3	633.5	1,070.6	1,685.9
Small-scale solar PV	1,344.6	1,577.8	1,876.4	2,382.5	3,099.3
Geothermal					
Total renewable	7,958.8	12,338.5	9,646.0	12,724.6	13,782.2
Total	67,711.2	70,304.2	71,356.3	72,615.1	73,531.5

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O3
Electricity generation in Victoria, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal								31.9	36.3	13.0	
Brown coal	52,094.0	51,541.7	51,066.5	52,059.7	45,317.6	43,977.7	48,336.8	46,202.2	43,557.8	36,008.4	34,461.3
Natural gas	1,451.9	1,697.9	1,289.8	1,142.5	3,247.7	3,239.3	2,390.9	1,892.2	2,658.7	3,829.9	3,319.3
Oil products	20.4	1.1	38.2	4.0	10.7	145.8	156.0	70.6	109.3	178.0	195.3
Other ^a	61.1	115.9	114.5								
Total non-renewable	53,627.4	53,356.6	52,509.0	53,206.2	48,576.0	47,362.8	50,883.7	48,197.0	46,362.1	40,029.3	37,975.9
Renewable fuels											
Biomass	292.0	303.4	339.6	859.3	845.1	886.9	672.2	747.7	694.5	701.2	789.8
Wind	573.0	1 406.0	1 434.4	1 416.2	2,005.1	2,771.9	3,067.8	3,341.8	3,560.9	4,303.9	4,884.8
Hydro	557.8	843.7	1,118.5	1,047.4	940.3	1,103.0	1,170.9	1,207.6	824.8	789.9	1,200.3
Large-scale solar PV						4.4	9.1	11.5	13.8	39.4	462.5
Small-scale solar PV ^b	24.1	66.2	205.5	378.7	580.1	674.2	874.8	1,056.1	1,231.7	1,481.2	1,898.6
Geothermal											
Total renewable	1,446.9	2,619.3	3,098.0	3,701.6	4,370.6	5,440.4	5,794.8	6,364.7	6,325.6	7,315.6	9,236.0
Total	55,074.4	55,975.9	55,607.0	56,907.8	52,946.6	52,803.2	56,678.5	54,561.7	52,687.7	47,344.9	47,211.9

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal					
Brown coal	47,848.0	45,682.7	38,276.7	35,961.4	33,136.8
Natural gas	1,736.0	1,634.4	4,186.0	2,972.2	3,894.3
Oil products	128.4	121.6	170.6	183.3	195.3
Total non-renewable	49,712.4	47,438.8	42,633.3	39,116.9	37,226.3
Renewable fuels					
Biomass	736.2	761.4	692.2	748.7	789.9
Wind	3,288.5	3,703.2	3,748.3	4,616.8	5,358.6
Hydro	1,323.3	960.3	749.3	1,137.1	960.7
Large-scale solar PV	11.9	13.6	19.8	197.3	739.7
Small-scale solar PV	970.6	1,141.3	1,343.8	1,660.0	2,159.4
Geothermal					
Total renewable	6,330.5	6,579.8	6,553.4	8,359.8	10,008.3
Total	56,042.9	54,018.6	49,186.7	47,476.7	47,234.6

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O4
Electricity generation in Queensland, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal	50,882.2	49,713.7	45,864.3	45,417.3	44,415.6	40,260.7	44,553.8	48,015.8	51,042.7	53,635.3	51,861.3
Brown coal											
Natural gas	9,257.2	12,020.6	14,595.3	15,303.4	13,909.5	15,454.3	18,248.5	13,816.9	12,236.6	11,045.5	9,965.9
Oil products	711.4	370.7	373.7	306.0	1,042.6	959.5	1,197.2	1,199.1	1,215.9	1,047.7	1,030.1
Other ^a	691.8	1 025.9	1 038.7	15.7	54.2						
Total non-renewable	61,542.6	63,130.9	61,872.0	61,042.4	59,421.9	56,674.5	63,999.5	63,031.9	64,495.2	65,728.5	62,857.3
Renewable fuels											
Biomass	1 588.5	1 548.0	920.7	1 124.8	1 239.2	1 485.8	1 641.4	1 771.8	1 410.0	1 379.4	1 335.6
Wind	27.3	30.9	27.3	27.7	30.7	33.7	32.5	28.4	29.0	30.3	502.5
Hydro	820.2	572.8	965.6	723.2	684.1	820.9	649.1	491.7	672.2	646.1	1,059.3
Large-scale solar PV						4.0	5.9	7.3	34.1	171.5	1,491.7
Small-scale solar PV ^b	50.8	121.3	400.6	760.3	1,310.2	1,460.6	1,788.0	2,055.9	2,335.9	2,760.9	3,334.5
Geothermal	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.2	0.5		
Total renewable	2,487.3	2,273.5	2,314.7	2,636.5	3,264.7	3,805.5	4,117.5	4,355.3	4,481.7	4,988.1	7,723.5
Total	64,029.9	65,404.4	64,186.7	63,678.9	62,686.6	60,480.0	68,117.0	67,387.1	68,976.8	70,716.6	70,580.7

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal	46,370.9	49,895.8	52,465.9	52,968.9	50,000.4
Brown coal					
Natural gas	15,770.3	12,533.3	11,662.5	10,472.6	10,576.2
Oil products	1,080.3	1,171.8	1,163.8	1,036.2	1,033.1
Total non-renewable	63,221.5	63,601.0	65,292.1	64,477.8	61,609.7
Renewable fuels					
Biomass	1,639.6	1,540.8	1,422.2	1,374.5	1,339.3
Wind	30.8	26.6	28.5	248.4	730.5
Hydro	506.9	543.5	662.1	825.1	1,064.5
Large-scale solar PV	8.0	17.1	85.8	816.8	2,526.4
Small-scale solar PV	1,929.3	2,184.0	2,532.2	3,031.0	3,693.2
Geothermal	0.4	0.4	0.3		
Total renewable	4,115.0	4,312.3	4,731.1	6,295.8	9,353.9
Total	67,336.5	67,913.3	70,023.2	70,773.6	70,963.6

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O5
Electricity generation in Western Australia, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal	8,738.0	9,612.2	10,352.3	10,783.3	10,276.9	10,885.3	10,523.4	10,912.7	11,226.2	11,031.9	9,918.3
Brown coal											
Natural gas	14,556.1	16,006.3	18,115.7	17,538.3	17,645.1	20,880.0	20,412.8	21,899.6	22,941.4	24,789.1	26,313.2
Oil products	1,464.4	1,373.4	1,413.8	1,171.2	2,045.0	2,486.1	4,223.5	3,347.4	2,883.5	2,166.5	2,352.0
Other ^a	2 153.0	1 017.8	1 029.4	1 072.4	1 855.8						
Total non-renewable	26,911.5	28,009.7	30,911.2	30,565.2	31,822.8	34,251.4	35,159.7	36,159.7	37,051.0	37,987.5	38,583.6
Renewable fuels											
Biomass	119.6	121.2	111.7	125.7	108.3	124.0	126.9	94.6	183.2	141.1	141.5
Wind	675.1	664.0	719.3	1 278.7	1,300.2	1,578.8	1,643.2	1,476.5	1,616.7	1,587.0	1,864.3
Hydro	na	na	na		221.3	205.4	206.1	217.0	212.6	220.8	217.1
Large-scale solar PV						24.1	23.9	28.3	34.3	45.6	74.5
Small-scale solar PV ^b	18.7	57.5	198.1	331.4	449.5	495.8	622.1	760.8	941.1	1,196.4	1,485.9
Geothermal											0.0
Total renewable	813.4	842.7	1,029.0	1,735.8	2,079.3	2,428.2	2,622.2	2,577.2	2,987.9	3,190.9	3,783.4
Total	27,724.9	28,852.4	31,940.2	32,301.0	33,902.1	36,679.6	37,781.9	38,736.8	40,039.0	41,178.4	42,366.9

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal	10,729.2	11,324.7	10,936.8	10,368.9	9,926.7
Brown coal	-	-	-	-	-
Natural gas	21,017.6	22,589.9	24,184.3	25,725.1	26,180.0
Oil products	3,910.0	3,186.4	2,612.6	2,348.7	2,351.8
Total non-renewable	35,656.8	37,101.0	37,733.6	38,442.6	38,458.5
Renewable fuels					
Biomass	147.6	180.8	169.8	150.6	132.0
Wind	1,578.6	1,538.6	1,528.6	1,616.8	2,158.2
Hydro	211.9	218.9	217.9	217.1	217.1
Large-scale solar PV	24.6	33.1	46.9	60.8	95.5
Small-scale solar PV	690.4	852.3	1,076.3	1,338.1	1,647.4
Geothermal					
Total renewable	2,653.1	2,823.7	3,039.4	3,383.4	4,250.1
Total	38,309.9	39,924.7	40,773.0	41,826.0	42,708.6

Totals may not add due to rounding.

na not available.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O6
Electricity generation in South Australia, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal											
Brown coal	4,887.4	4,526.6	4,231.6	3,008.0	2,237.5	2,098.5	2,633.6	2,593.7			
Natural gas	7,371.4	6,937.0	6,693.1	6,703.2	7,060.9	5,998.1	5,003.8	4,956.0	6,028.2	7,753.2	7,255.3
Oil products	63.2	163.9	89.3	97.8	141.0	106.9	197.3	136.2	183.1	198.9	139.4
Other ^a	337.4	335.4	266.9		8.5						
Total non-renewable	12,659.4	11,962.9	11,280.9	9,809.0	9,447.9	8,203.5	7,834.7	7,685.9	6,211.3	7,952.1	7,394.7
Renewable fuels											
Biomass	86.1	85.5	77.8	70.6	72.6	80.9	84.9	94.6	78.0	74.0	85.4
Wind	2,020.2	2,029.0	2,890.3	3,126.5	3,313.5	4,150.3	4,291.9	4,398.0	4,413.7	5,673.9	5,722.4
Hydro	4.1	4.2	4.1	4.4	5.9	5.9	10.8	6.5	3.5	6.4	8.8
Large-scale solar PV						1.4	1.7	2.0	3.9	20.0	321.3
Small-scale solar PV ^b	23.4	50.7	182.8	398.1	558.6	677.9	802.2	895.5	1,000.8	1,163.4	1,403.7
Geothermal											0.0
Total renewable	2,133.8	2,169.4	3,155.0	3,599.6	3,950.6	4,916.5	5,191.6	5,396.6	5,499.9	6,937.6	7,541.6
Total	14,793.2	14,132.3	14,435.9	13,408.6	13,398.5	13,120.0	13,026.3	13,082.4	11,711.2	14,889.8	14,936.4

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal					
Brown coal	2,699.9	1,308.1			
Natural gas	4,914.9	4,958.7	7,671.1	6,765.6	7,530.3
Oil products	151.7	152.6	147.8	136.5	137.9
Total non-renewable	7,766.5	6,419.4	7,818.9	6,902.1	7,668.2
Renewable fuels					
Biomass	87.0	83.9	80.1	83.4	85.4
Wind	4,217.2	4,562.2	4,888.9	5,704.1	5,680.5
Hydro	8.7	5.0	4.9	7.6	8.8
Large-scale solar PV	1.8	3.8	11.7	161.0	410.9
Small-scale solar PV	850.3	959.1	1,101.2	1,278.5	1,546.0
Geothermal					
Total renewable	5,164.9	5,614.0	6,086.8	7,234.6	7,731.6
Total	12,931.4	12,033.4	13,905.7	14,136.7	15,399.8

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O7
Electricity generation in Tasmania, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal											
Brown coal											
Natural gas	705.3	1,109.8	1,506.0	1,562.7	1,752.5	985.0	131.0	858.0	897.6	980.4	616.3
Oil products	64.5	73.9	94.9	60.5	12.1	19.7	18.9	90.3	21.8	30.5	19.0
Other ^a					26.8						
Total non-renewable	769.8	1,183.7	1,600.9	1,623.3	1,791.4	1,004.7	149.9	948.3	919.4	1,010.9	635.3
Renewable fuels											
Biomass	25.1	29.0	29.9	33.3	33.0	30.6	34.6	27.3	24.5	24.1	26.0
Wind	486.9	489.3	483.5	423.1	477.5	818.0	1,055.1	1,056.0	1,104.8	1,147.8	1,119.9
Hydro	7,313.6	8,307.2	9,451.5	8,515.5	10,766.4	12,072.6	8,294.4	8,204.3	8,432.7	9,428.9	9,785.4
Large-scale solar PV						0.0	0.0	0.0	0.3	0.6	1.5
Small-scale solar PV ^b	1.8	5.6	11.6	22.7	53.3	73.5	96.8	108.5	121.6	138.9	161.0
Geothermal											
Total renewable	7,827.4	8,831.1	9,976.5	8,994.6	11,330.2	12,994.8	9,480.9	9,396.0	9,683.9	10,740.2	11,093.8
Total	8,597.2	10,014.8	11,577.4	10,617.9	13,121.6	13,999.5	9,630.9	10,344.3	10,603.3	11,751.2	11,729.2

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal					
Brown coal					
Natural gas	106.7	850.5	1,326.5	634.1	608.3
Oil products	26.0	77.5	23.1	21.7	19.0
Total non-renewable	132.7	928.0	1,349.5	655.8	627.3
Renewable fuels					
Biomass	32.3	26.8	24.6	23.3	29.7
Wind	1,001.3	1,131.3	1,056.0	1,102.3	1,211.1
Hydro	8,518.8	9,062.2	8,059.1	10,322.3	8,758.7
Large-scale solar PV	0.1	0.3	0.5	1.5	1.5
Small-scale solar PV	102.6	114.8	129.7	149.9	172.3
Geothermal					
Total renewable	9,655.1	10,335.4	9,269.9	11,599.2	10,173.3
Total	9,787.9	11,263.3	10,619.4	12,255.0	10,800.6

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O8
Electricity generation in the Northern Territory, by fuel type, physical units

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19(e)
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels											
Black coal											
Brown coal											
Natural gas	1,873.4	2,132.5	2,053.6	2,109.3	2,269.0	2,308.9	2,201.4	2,484.7	2,366.5	2,437.8	2,578.9
Oil products	1,039.3	1,118.2	1,022.5	1,020.9	1,022.0	1,123.6	751.3	522.6	537.4	947.2	1,718.0
Other ^a		2.4	0.5								
Total non-renewable	2,912.7	3,253.1	3,076.6	3,130.2	3,291.0	3,432.5	2,952.7	3,007.3	2,903.9	3,384.9	4,296.8
Renewable fuels											
Biomass	9.2	9.2	8.7	7.7	6.5	8.9	9.0	7.7	7.6	8.6	8.3
Wind											
Hydro											
Large-scale solar PV						5.1	6.4	8.5	18.5	30.5	32.7
Small-scale solar PV ^b	0.5	4.3	5.6	9.7	16.9	19.4	28.9	42.4	61.3	85.8	117.6
Geothermal											
Total renewable	9.7	13.5	14.3	17.4	23.4	33.3	44.3	58.7	87.3	124.9	158.6
Total	2,922.4	3,266.6	3,090.9	3,147.6	3,314.4	3,465.8	2,997.0	3,066.0	2,991.2	3,509.8	4,455.5

	Calendar year				
	2015	2016	2017	2018	2019(e)
	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels					
Black coal					
Brown coal					
Natural gas	2,403.7	2,423.6	2,416.4	2,522.6	2,578.9
Oil products	576.3	532.0	742.0	1,332.4	1,718.0
Total non-renewable	2,980.0	2,955.6	3,158.4	3,854.9	4,296.8
Renewable fuels					
Biomass	7.8	8.2	7.1	8.3	8.3
Wind					
Hydro	0.0	0.0	0.0	0.0	0.0
Large-scale solar PV	8.9	18.7	27.2	30.7	35.4
Small-scale solar PV	35.2	51.6	72.6	100.5	137.7
Geothermal					
Total renewable	51.8	78.5	106.9	139.5	181.5
Total	3,031.8	3,034.1	3,265.3	3,994.5	4,478.3

Totals may not add due to rounding.

^a Includes multi-fuel fired power plants. This series was discontinued in 2013-14 and multi-fuel allocated to specific fuel types.

^b The 2018-2019 and 2019 estimates may continue to grow as there can be a 12 month lag in the provision of small-scale solar data.

(e) estimate only, see method note

Table O9

Australian electricity generation, by fuel type, physical units, 2018-19

	NSW	VIC	QLD	WA	SA	TAS	NT	Aus
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels								
Black coal	57,711.1		51,861.3	9,918.3				119,490.7
Brown coal		34,461.3						34,461.3
Natural gas	2,338.5	3,319.3	9,965.9	26,313.2	7,255.3	616.3	2,578.9	52,387.4
Oil products	326.7	195.3	1,030.1	2,352.0	139.4	19.0	1,718.0	5,780.5
Total non-renewable	60,376.3	37,975.9	62,857.3	38,583.6	7,394.7	635.3	4,296.8	212,119.9
Renewable fuels								
Biomass	1,171.5	789.8	1,335.6	141.5	85.4	26.0	8.3	3,557.9
Wind	3,836.7	4,884.8	502.5	1,864.3	5,722.4	1,119.9		17,930.7
Hydro	3,679.0	1,200.3	1,059.3	217.1	8.8	9,785.4		15,949.9
Large-scale solar PV	1,348.2	462.5	1,491.7	74.5	321.3	1.5	32.7	3,732.4
Small-scale solar PV	2,714.3	1,898.6	3,334.5	1,485.9	1,403.7	161.0	117.6	11,115.7
Geothermal								
Total renewable	12,749.7	9,236.0	7,723.5	3,783.4	7,541.6	11,093.8	158.6	52,286.6
Total	73,126.0	47,211.9	70,580.7	42,366.9	14,936.4	11,729.2	4,455.5	264,406.5
<i>Per cent renewable generation</i>	<i>17.4%</i>	<i>19.6%</i>	<i>10.9%</i>	<i>8.9%</i>	<i>50.5%</i>	<i>94.6%</i>	<i>3.6%</i>	<i>19.8%</i>

Australian electricity generation, by fuel type, physical units, calendar year 2019

	NSW	VIC	QLD	WA	SA	TAS	NT	AUSTRALIA
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Non-renewable fuels								
Black coal	56,431.9		50,000.4	9,926.7				116,359.0
Brown coal		33,136.8						33,136.8
Natural gas	2,989.6	3,894.3	10,576.2	26,180.0	7,530.3	608.3	2,578.9	54,357.5
Oil products	327.7	195.3	1,033.1	2,351.8	137.9	19.0	1,718.0	5,782.8
Total non-renewable	59,749.3	37,226.3	61,609.7	38,458.5	7,668.2	627.3	4,296.8	209,636.1
Renewable fuels								
Biomass	1,191.3	789.9	1,339.3	132.0	85.4	29.7	8.3	3,575.9
Wind	4,385.6	5,358.6	730.5	2,158.2	5,680.5	1,211.1		19,524.5
Hydro	3,420.1	960.7	1,064.5	217.1	8.8	8,758.7		14,429.9
Large-scale solar PV	1,685.9	739.7	2,526.4	95.5	410.9	1.5	35.4	5,495.4
Small-scale solar PV	3,099.3	2,159.4	3,693.2	1,647.4	1,546.0	172.3	137.7	12,455.3
Geothermal								
Total renewable	13,782.2	10,008.3	9,353.9	4,250.1	7,731.6	10,173.3	181.5	55,481.0
Total	73,531.5	47,234.6	70,963.6	42,708.6	15,399.8	10,800.6	4,478.3	265,117.1
<i>Per cent renewable generation</i>	<i>18.7%</i>	<i>21.2%</i>	<i>13.2%</i>	<i>10.0%</i>	<i>50.2%</i>	<i>94.2%</i>	<i>4.1%</i>	<i>20.9%</i>

Totals may not add due to rounding.

Table O12**Australian electricity supplied from utility-scale battery storage**

	2017-18	2018-19
	GWh	GWh
NSW		
VIC		20.3
QLD		
WA		
SA	22.0	42.0
TAS		
NT		
Aus	22.0	62.3

	Calendar year		
	2017	2018	2019
	GWh	GWh	GWh
NSW			
VIC		2.7	48.5
QLD			
WA			
SA	2.6	40.1	45.8
TAS			
NT			
Aus	2.6	42.8	94.3

Totals may not add due to rounding.

Electricity that is stored and released from batteries is not included in the electricity generation estimates because generation is measured at the point of original generation

Australian Energy Statistics, Table O

Method note:

Calendar and 2018-19 estimates of electricity generation are based on data from the:

- Australian Energy Market Operator, which includes the National Electricity Market and the Western Australian Wholesale Electricity Market
- Clean Energy Regulator, which includes data collected under National Greenhouse and Energy Reporting Scheme and the Renewable Energy Target

These estimates are subject to change in the full release of the 2018-19 Australian Energy Statistics.

These statistics cover all electricity generation in Australia. This includes by power plants, and by businesses and households for their own use, in all states and territories. This also includes both on and off grid generation.