



# WESTERN AUSTRALIAN MINERAL AND PETROLEUM STATISTICS DIGEST

2006



Department of  
**Industry and Resources**



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Cover and inside cover photo:  
Argyle Diamond Mine in the Kimberley

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# WESTERN AUSTRALIAN RESOURCES INDUSTRY CONTINUES TO GROW

The value of Western Australian mineral and petroleum resources in 2006 continues to break records, rising by 23% to reach a remarkable \$48.4 billion. This result was achieved through robust global demand for resources supported by strong commodity prices.

Western Australian producers experienced adverse weather conditions in the first quarter of 2006, as well as rising costs pressures associated with skills shortages, mining equipment supply constraints together with some shipping bottlenecks which are not expected to be resolved until mid 2008 when construction and expansion projects are completed.

The magnitude of the State's mining developments is demonstrated in the latest Australian Bureau of Statistics (ABS) investment figures for 2006. This data shows that Western Australia's share of national mining capital expenditure rose from 54% (\$7.2 billion) in 2005 to 61% (\$12.7 billion), a 55% increase for the year.

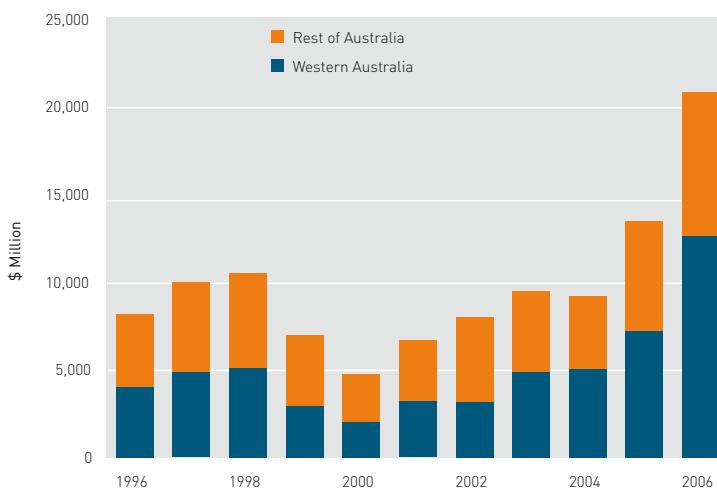


Figure 1 | **Mining Investment** Source: Australian Bureau of Statistics



*Northwest Seaeagle berthed at the Karratha gas plant terminal, Western Australia © Woodside*

Exports for the year also highlighted the resource industry's dominance in the State's economy accounting for 88% (\$48.16 billion) of total merchandise exports (excluding services) from Western Australia. Iron ore contributed 30% towards the State's exports, petroleum 23%, gold 19%, nickel 12% and alumina 8%.

Whilst most of the State's minerals and energy industries recorded stronger sales quantities, the overall rise in value of sales for 2006 is mainly attributable to high commodity prices and this is reflected in iron ore's \$3.3 billion increase, nickel \$2.1 billion, petroleum \$1.2 billion, gold \$1.1 billion and alumina \$900 million.

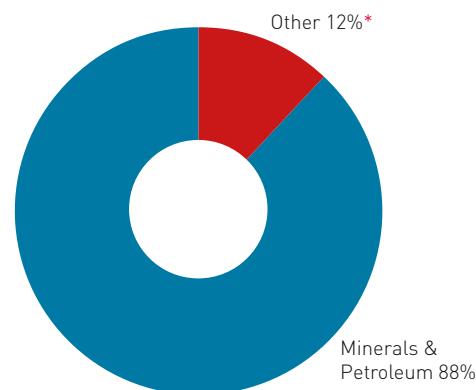
Petroleum is the largest resource sector by value and an increase in sales of \$1.2 billion saw it reach a record level of \$15.6 billion. The decline in crude oil and condensate production was offset by high world oil prices together with increased LNG shipments and domestic gas output.

The next largest resources sector is the iron ore industry and this giant of the minerals industry sold a record 250 million tonnes valued at \$14.6 billion, up 2% and 29% respectively. With mine and port expansions and anticipated continued strong demand, it is expected that this sector will continue its record breaking run through 2007 and beyond.

Next in order of value to the State is nickel, with a sales value of \$5.1 billion (an increase of some 61% over the previous period), followed by alumina at \$4.6 billion (up 25%) and Gold \$4.2 billion, up 35%.

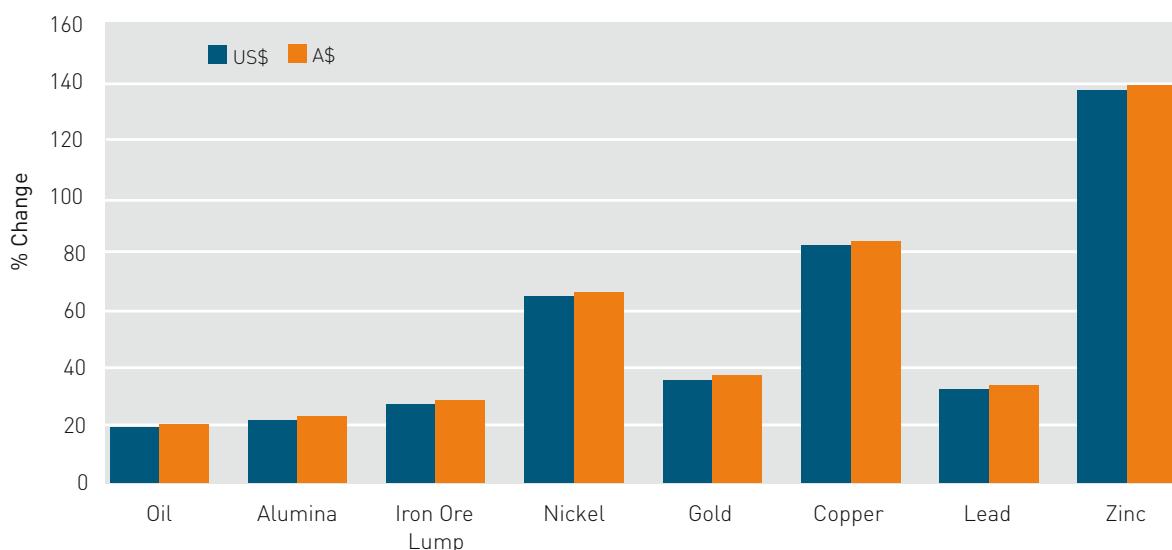
The base metals sector also performed particularly strongly with increased output and new projects coming on stream, to record an increase of 97% and reach \$1.2 billion worth of sales.

An average of a little over one percent depreciation in the Australian dollar against the US dollar over the 12 months period to end 2006 had little influence on the outcomes of strong commodity prices and increased outputs from the Western Australian resources sector. It is expected that the strong demand from our trading partners for the State's resources will continue through 2008.



**Figure 2 | Western Australian Merchandise Exports 2006**  
A\$54.84 billion Source: DoIR

\*Other includes wheat, wool, live animals, seafood, meat, pearls and other agricultural and manufactured items.



**Figure 3 | Average Price Comparison 2005 and 2006** Source: LME, Kitco, TEX report, Metal Prices

# WESTERN AUSTRALIAN RESOURCES INDUSTRY CONTINUES TO GROW

## HIGHLIGHTS IN 2006

The Tapis oil price peaked in August at US\$82.19/bbl and averaged US\$69.60/bbl for 2006. Even though crude oil production fell 9%, strong oil prices resulted in an 8% increase in the value of **crude oil** to realise \$6.6 billion worth of sales.

**LNG** sales volumes rose by 3% to realise a sales value of \$4.6 billion, an increase of 2%.

**LPG** Butane and Propane output remained almost unchanged, returning a sales value of \$614 million, up 13%. **Natural Gas** increased output by 13% and increased the value of sales to \$811 million, a rise of 23%. **Crude Oil** and **Condensate** were the only two petroleum items to record lower outputs due to maturing fields, however strong prices still resulted in a 10% increase in value to \$9.6 billion.

**Iron ore** is now the largest individual mineral sector by value, accounting for 30% of the value of resources output for 2006, up from 29% in 2005. On the back of a 19% increase in prices effective April 2006 and strong demand, particularly from China, iron ore reached a record sales value of \$14.6 billion in sales based on 250 million tonnes of ore.

**Nickel** is the star performer in terms of increased value, up by a massive 61%, to reach a total of \$5.6 billion for the period. This was a record for nickel and it accounts for nearly 12% of the total value of resources and places it ahead of alumina and LNG in terms of value. Record nickel prices averaging around 67% (in Australian dollar terms) over the previous year was responsible for this huge increase.

**Alumina's** steady performance over the years continued through 2006 to claim fourth place behind Nickel. A modest increase in output of 2% resulted in a record of 11.6 million tonnes being shipped and an impressive 25% increase in the value of sales to reach \$4.6 billion.

**Gold** output dropped marginally during 2006 by nearly 4% to reach 5.26 million ounces (163,650 kg) and remains well below peak output levels achieved in the late 1990s. This sector also slipped into sixth place behind LNG with a value of \$4.24 billion despite strong gold prices which in May achieved an all-time record in Australian dollar terms of \$933.20/oz.

**Base Metals** joined the record breakers by achieving a value of \$1.17 billion for the 2006 period (a 97% increase). This was achieved through strong commodity prices together with increased output from producers and the Magellan Lead mine coming on stream.

All base metals sectors performed well, with **Copper** increasing in quantity by 7% recording 89 thousand tonnes, while value increased by 59% to \$690 million. **Lead** quantities soared to 75 thousand tonnes for a value of \$131 million whilst zinc recorded increases in quantities of 118% to reach 139 thousand tonnes to record a value of \$353 million.

**Mineral sands** was the only sector to record overall drops in sales quantities, the exception being ilmenite, which rose by 7%. Although mineral sands enjoyed across-the-board rising prices they were not enough to compensate for the decreased sales quantities and recorded \$857 million in sales value. As a consequence mineral sands share of the overall total value of resources dropped from 2.2% in 2005 to 1.8% in 2006. Zircon experienced a 17% drop in sales quantities however managed to record a 4% rise in sales value to reach \$342 million.

**Salt** achieved a 10% increase in sales value for 2006 reaching \$235 million whilst tonnages were down 10% on the previous period. **Diamonds** sales volumes were down by 50% as a result of softer markets. **Cobalt** sales volumes rose by 9% and strong prices saw sales values climb by 25% to \$209 million. **Manganese** tonnages increased by 16% and softer prices saw values increase by only 14% to \$211 million.

### The State's resources in order of value for 2006:

	Billion
Iron Ore	\$14.60
Crude Oil and Condensate	\$9.59
Nickel	\$5.61
Alumina	\$4.57
LNG	\$4.55
Gold	\$4.24
Others	\$5.24



Telfer gold operation in the East Pilbara Region

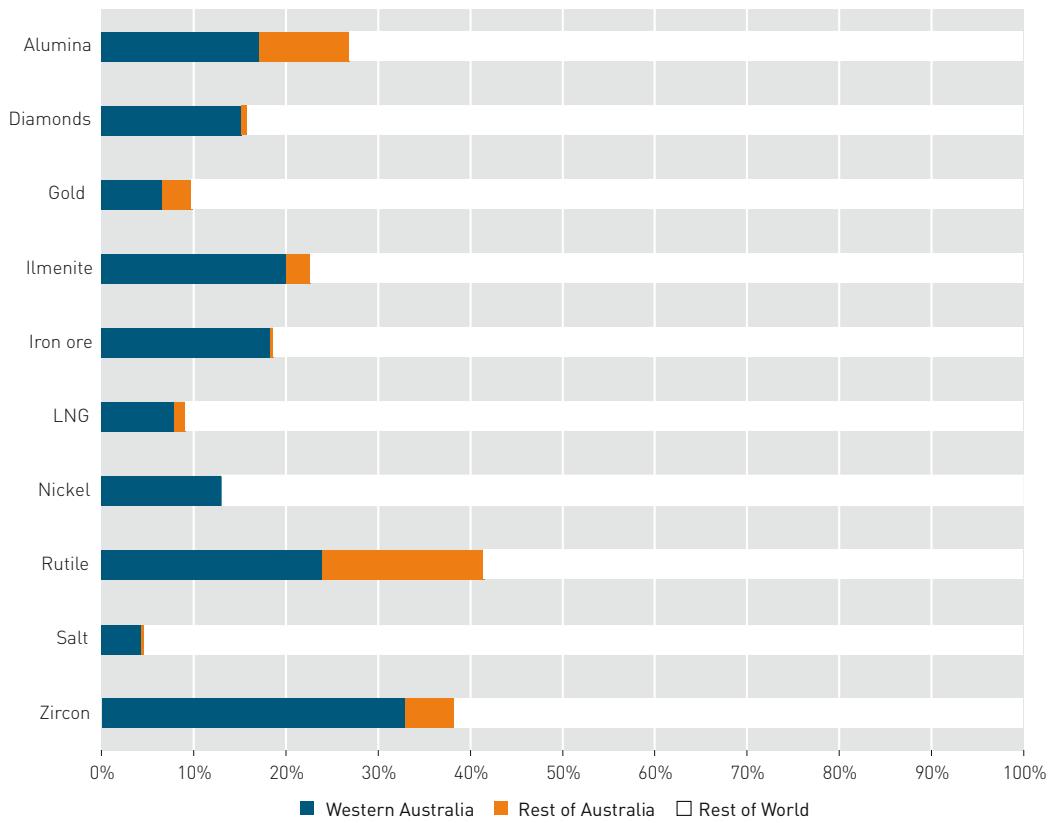


Figure 4 | Selected WA Commodities Relative To World Production Ending 2006, by Quantity  
Source: DoIR ABARE and USGS

The latest comparable data show that the Western Australian share (by quantity) of the world's output of the following products was: alumina 17%, gold 7%, ilmenite 20%, iron ore 18%, LNG (sea borne trade) 8%, nickel 13%, rutile 29%, salt 4%, zircon 35% and 15% of diamonds (mainly industrial grade).

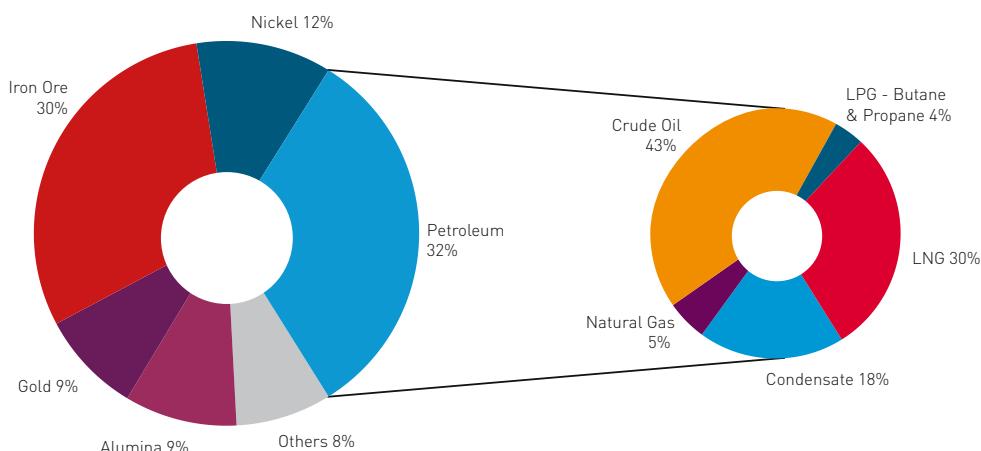


Figure 5 | Sales by Commodity 2006 \$48.4 billion Source: DoIR

# COMMODITIES

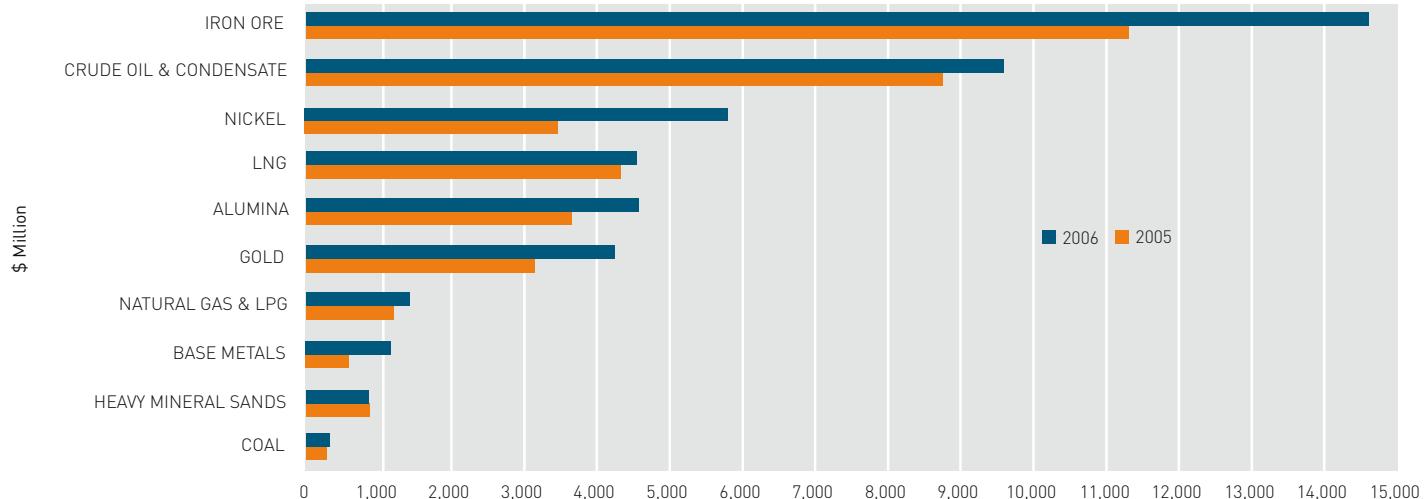


Figure 6 | Major Commodities by Value 2005 and 2006 Source: DoIR

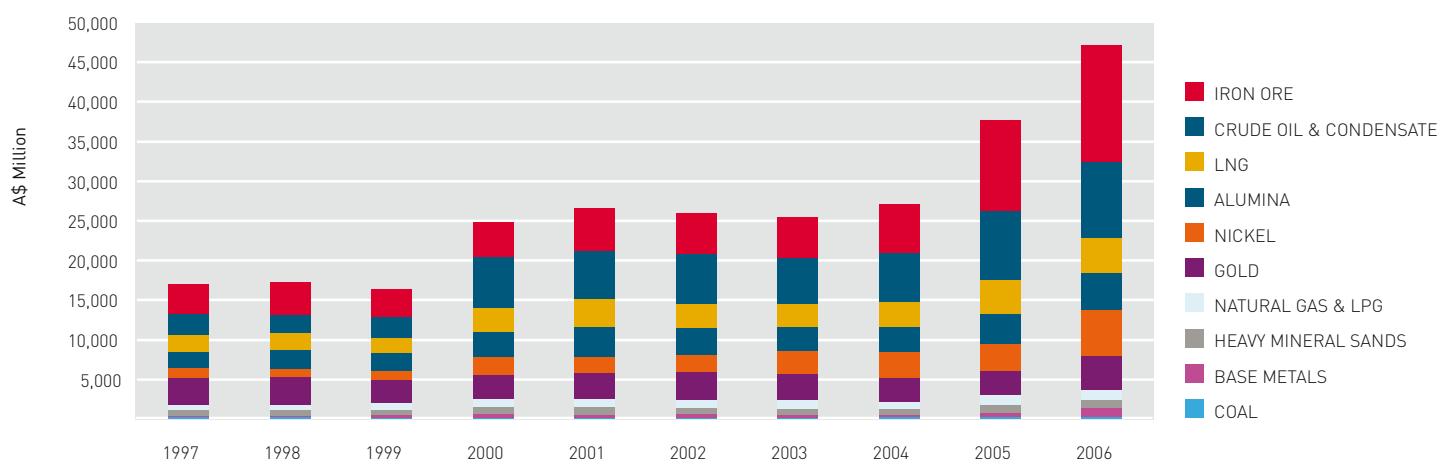


Figure 7 | Value of Minerals and Petroleum by Commodity Source: DoIR

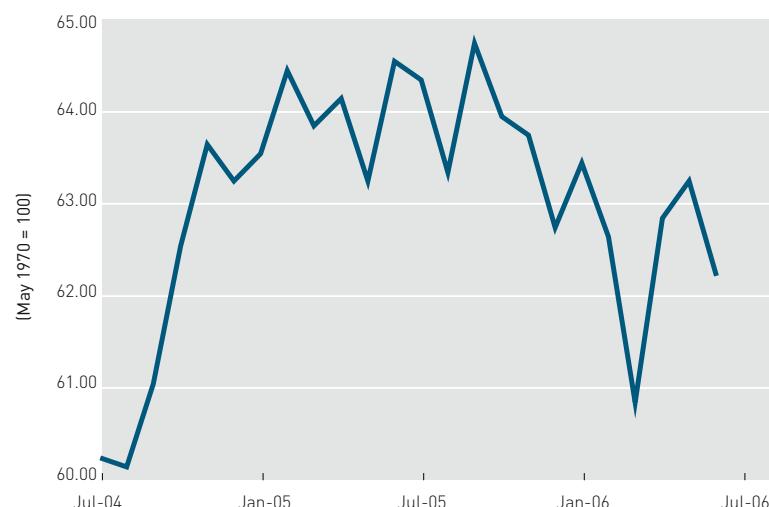


Figure 8 | Exchange Rate Trade Weighted Index  
(units of foreign currency per A\$)  
Source: Reserve Bank of Australia

Definition: "Trade weighted index" is the average value of A\$ in relation to the currencies of Australia's major trading partners.

# EXCHANGE RATES AND PRICES



Figure 9 | **Australian Dollar Exchange Rate Against Major Currencies** Source: Reserve Bank of Australia

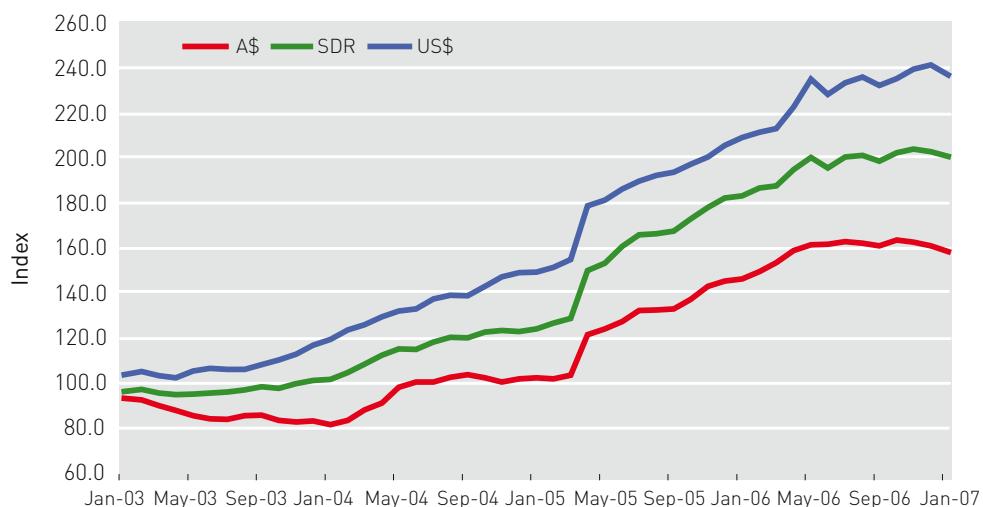


Figure 10 | **Non-Rural Commodity Price Index 2001-02 = 100** Source: Reserve Bank of Australia

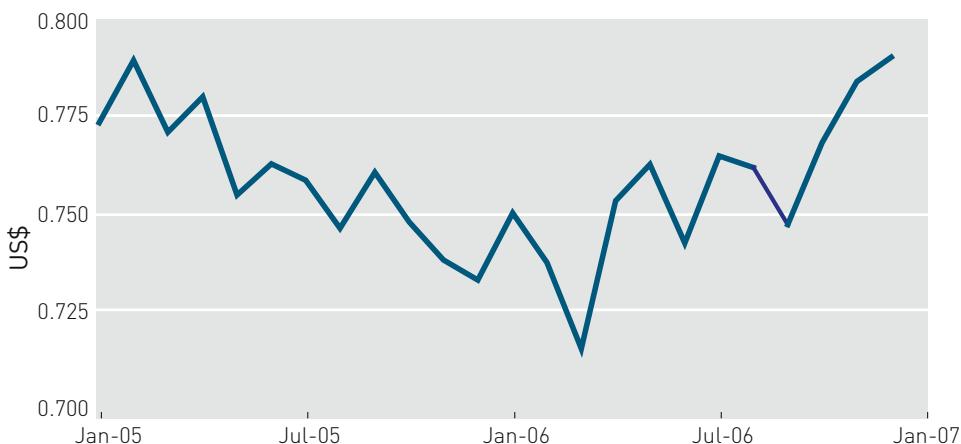


Figure 11 | **Exchange Rate US\$/A\$** Source: Reserve Bank of Australia

# EXPORTS



## GOLD EXPORT UPDATE 2006

The Australia Bureau of Statistics (ABS) release trade data that indicated a significant rise in Western Australian gold exports. However, this apparent increase in gold exports from Western Australia has been due to a restructuring of Australia's gold refining industry.

In October 2002, AGR Matthey was formed. This is a partnership between Johnson Matthey (Aust) in Victoria, WA Mint (The Perth Mint) and the Australian Gold Alliance. As a result of the merger, all Australian gold is now refined in Western Australia. The Victorian refinery still refines silver and jewellery products.

Gold export data published by the ABS from Western Australia must therefore be interpreted with some caution. It includes gold produced in other States and Territories, in addition to production from overseas operations, namely Papua New Guinea and Asia, which is refined and exported from Western Australia. This export figure is therefore larger than Western Australia's own level of gold production.

The ABS estimates that gold exports from Western Australia in 2006 amounted to approximately \$9 billion. Approximately 47% or \$4.2 billion was gold produced in Western Australia. The remaining 53% (approximately \$4.8 billion) can be attributed to gold refined and exported from Western Australia but produced from mining operations in other States, Territories and overseas.

Overseas imported gold also includes scrap which is refined in Western Australia and exported.

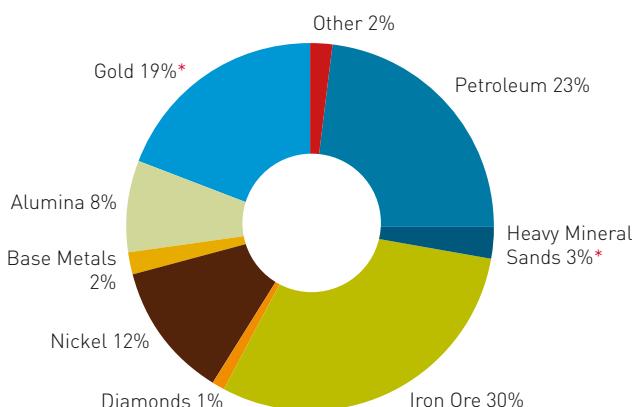


Figure 12 | **Western Australian Mineral and Petroleum Exports 2006**  
A\$48.16 billion Source: DoIR

\*Includes \$4.8 billion of gold and \$100.8 million of heavy mineral sands refined/processed and exported from Western Australia, but produced from mining operations in other States, Territories and overseas and \$428 million of TiO<sub>2</sub> exports.

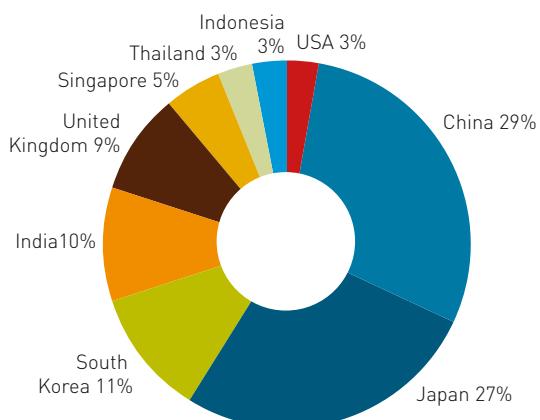


Figure 13 | **Western Australian Merchandise Exports 2006**  
A\$54.84 billion Source: ABS

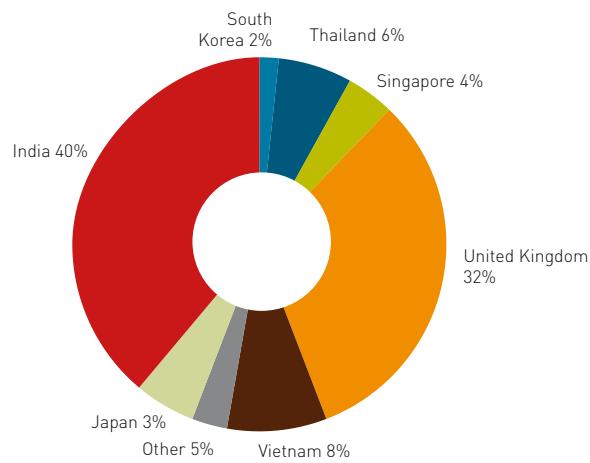


Figure 14 | **Western Australian Produced Gold Exports**  
Total Value \$4.24 billion  
Source: DoIR and ABS

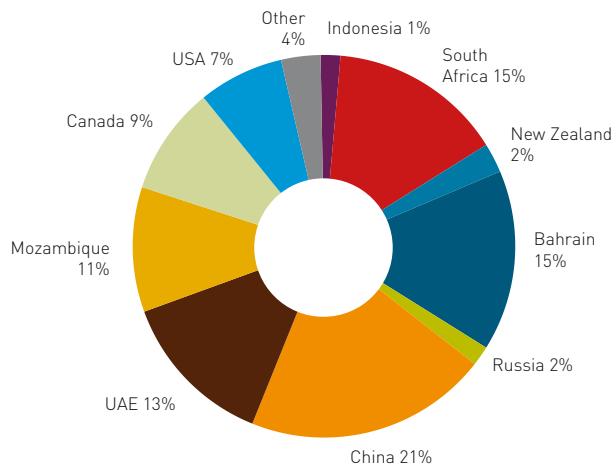


Figure 15 | **Alumina Exports**  
Total Value \$4.17 billion  
Source: DoIR

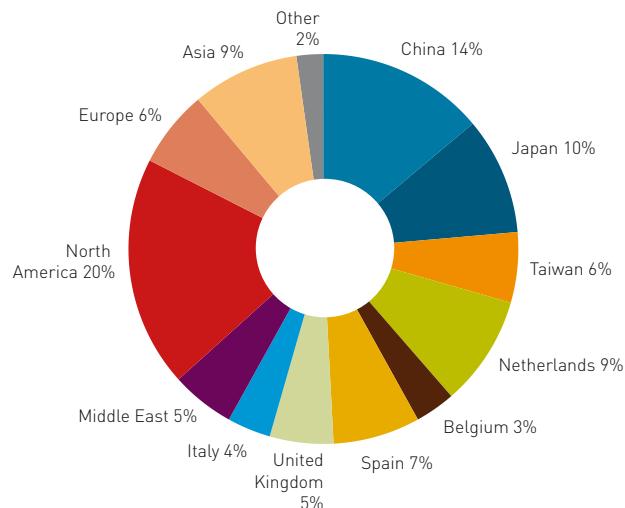


Figure 16 | **Heavy Mineral Sands Exports**  
Total Value \$957.87 million Source: DoIR  
NOTE: Exports include product sourced from other States and processed in Western Australia

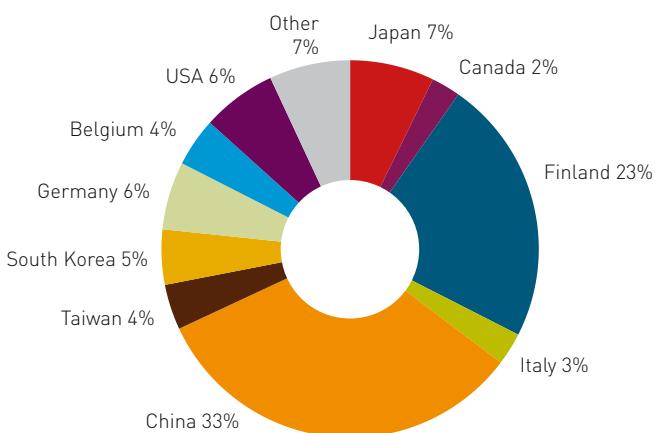


Figure 17 | **Nickel Exports**  
Total Value \$2.96 billion  
Source: DoIR

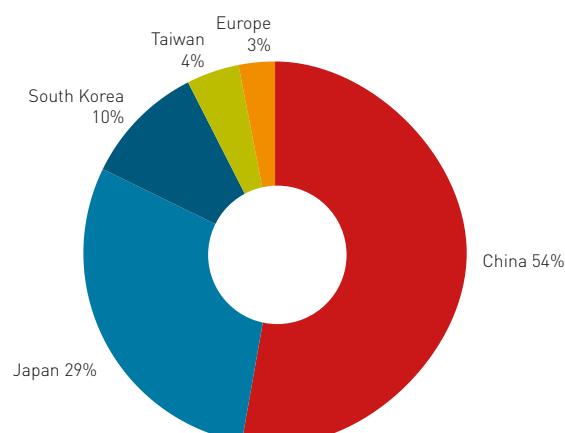


Figure 18 | **Iron Ore Exports**  
Total Value \$14.32 billion  
Source: DoIR

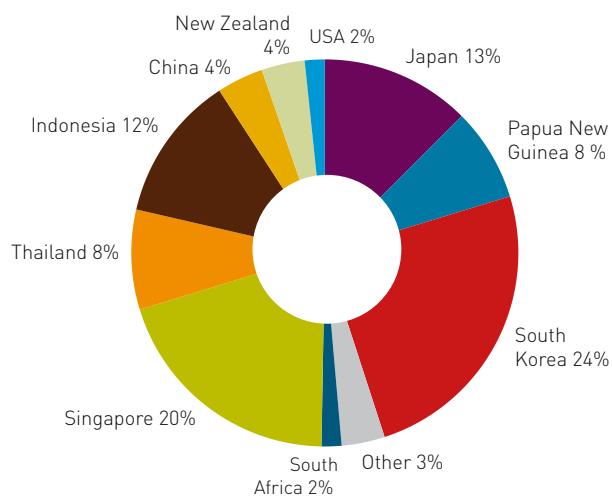


Figure 19 | **Crude Oil and Condensate Exports**  
Total Value \$5.97 billion  
Source: ABS

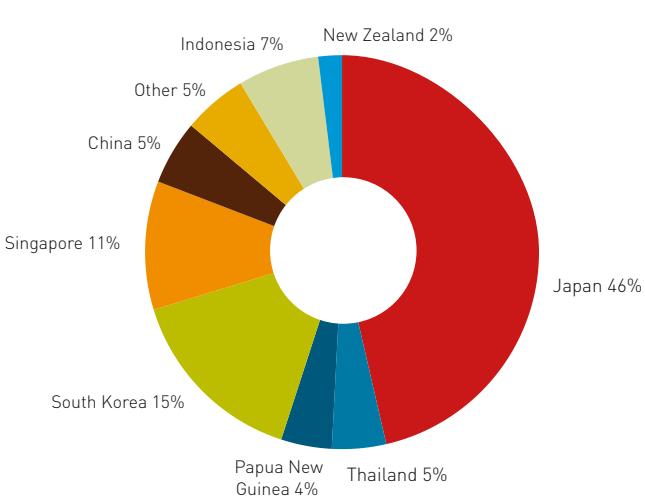


Figure 20 | **Petroleum Exports**  
Total Value \$11.2 billion  
Source: DoIR and ABS

# PRICES

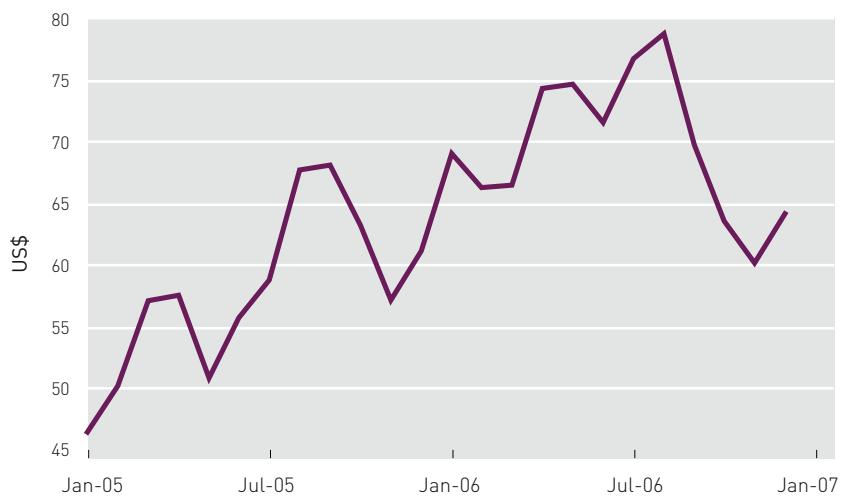


Figure 21 | **Tapis Crude Oil Price US\$/bbl** Source: WA Treasury Corporation

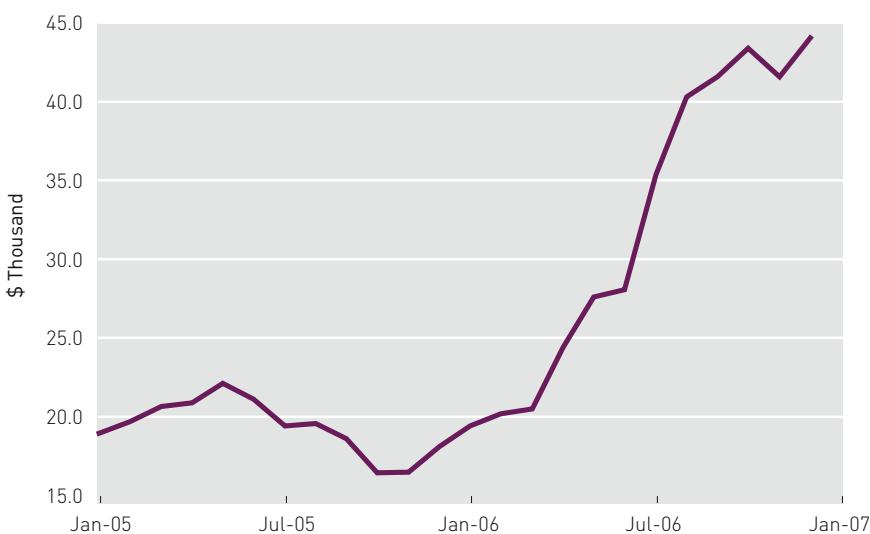


Figure 22 | **Nickel Price A\$/tonne** Source: LME Cash, Monthly Average

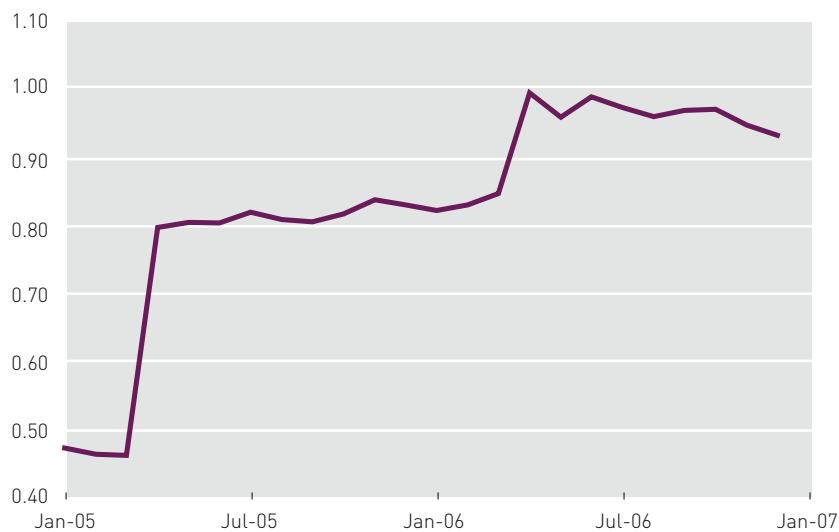


Figure 23 | **Iron Ore Price A\$/Fe Unit**

Source: Tex Report, High Grade Fine Ore Prices

Note: Price is per 1%. An 'Fe unit' is equivalent to each 1% of iron ore. Hence, ore shipped at 63% Fe commands a price of 63 x 'Fe unit price'.

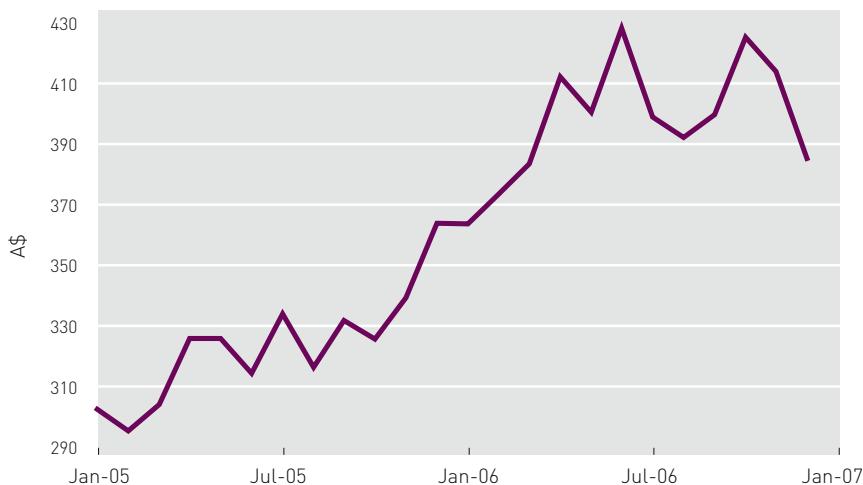


Figure 24 | **Alumina Price A\$/tonne** Source: ABS

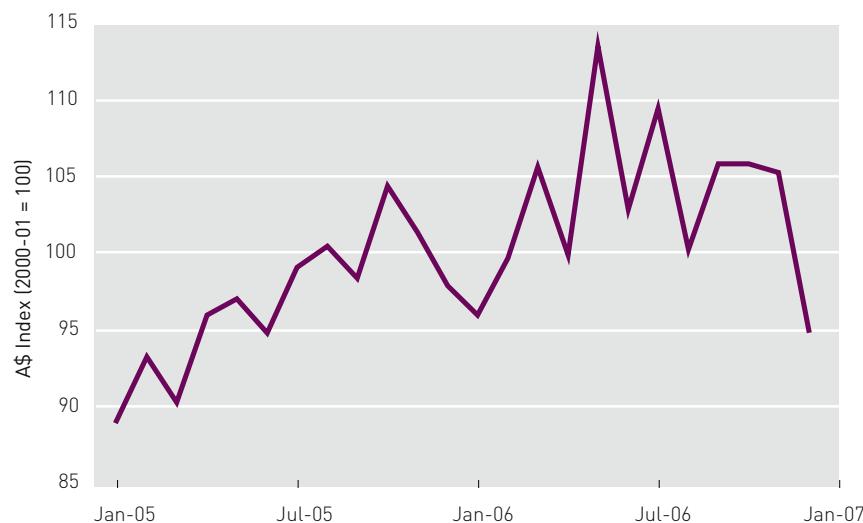


Figure 25 | **Heavy Mineral Sands Price Index** Source: WA Treasury Corporation



Figure 26 | **Gold Price** Source: Perth Mint and London Fix

# GAS PRICES

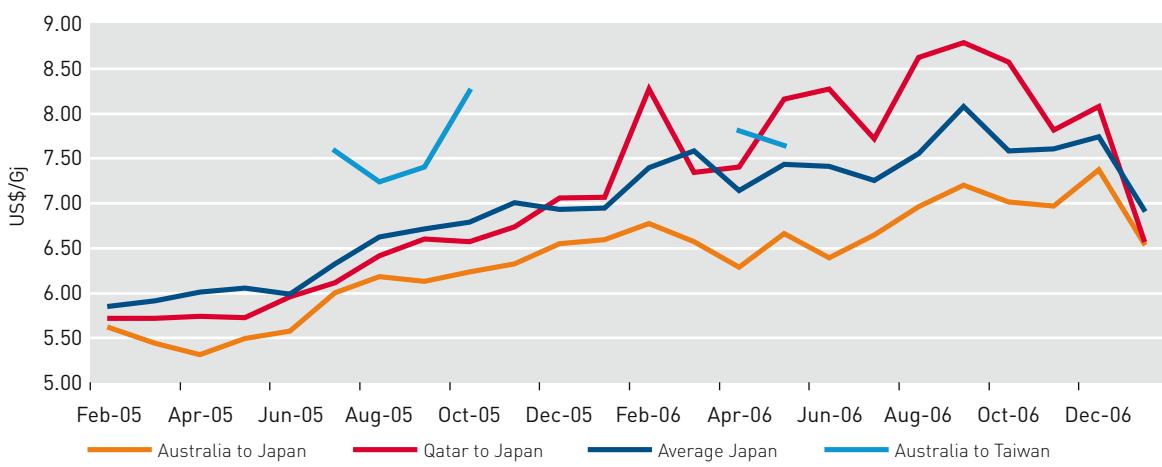


Figure 27 | **LNG Import Prices** Source: Argus Monthly LNG

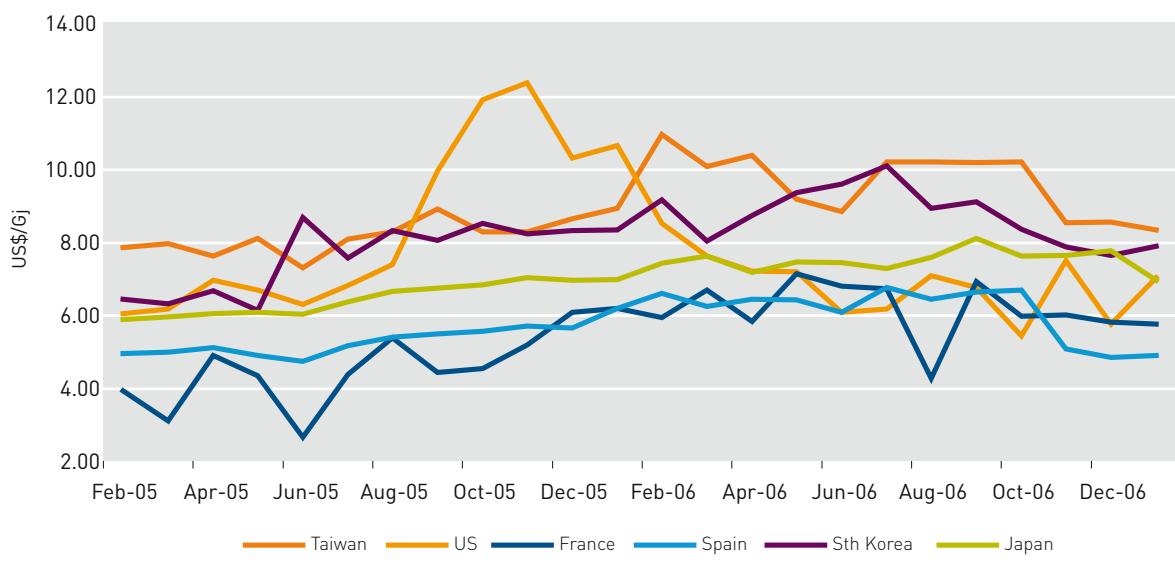


Figure 28 | **Average LNG Import Prices** Source: Argus Monthly LNG

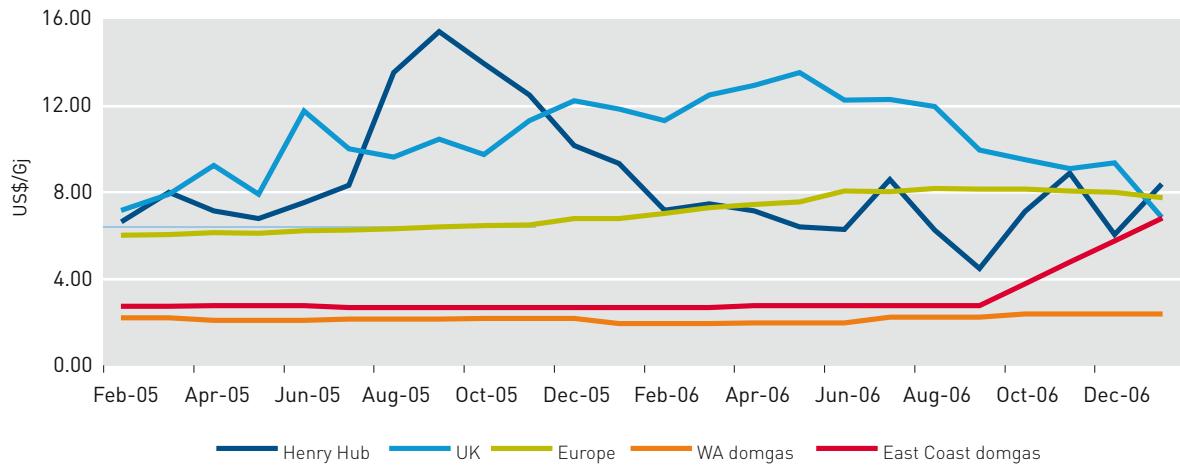
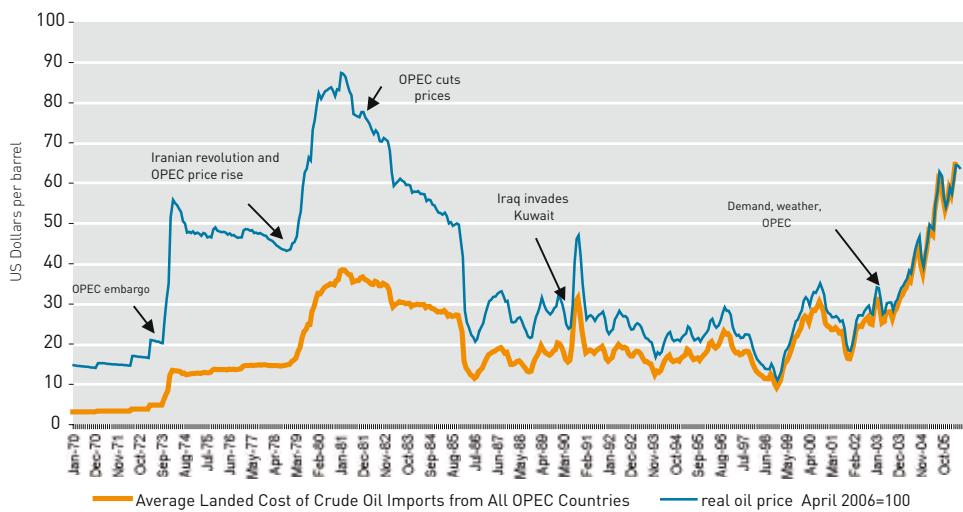


Figure 29 | **Average Natural Gas Prices** Source: Argus Monthly LNG, EnergyQuest and DoIR



# QUANTITY - WA Compared to Australia

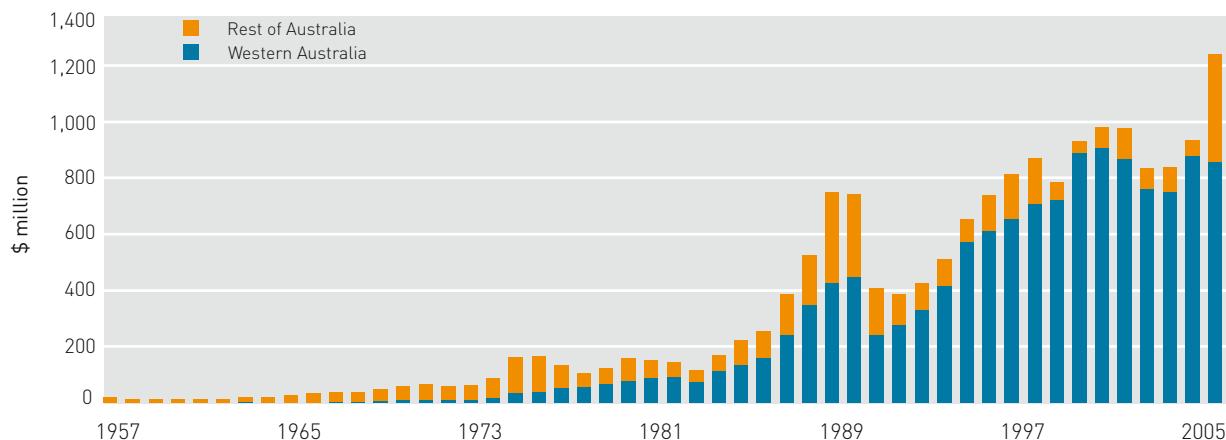


Figure 33 | **Heavy Mineral Sands Value of Production**  
Includes Ilmenite, Leucoxene, Upgraded Ilmenite, Rutile, Zircon and Monazite. Source: DoIR and ABARE

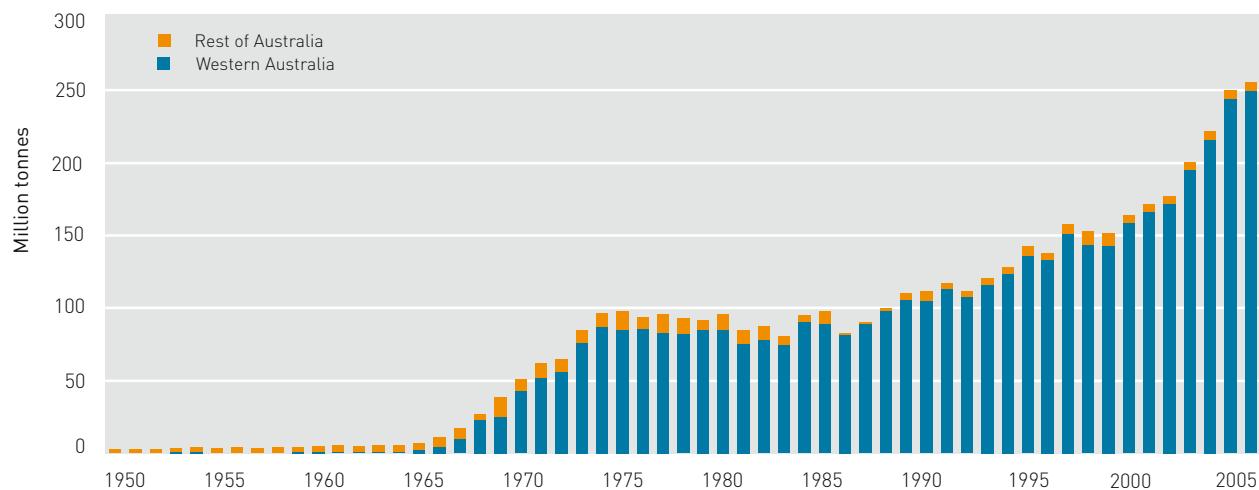


Figure 34 | **Iron Ore Quantity** Source: DoIR and ABARE

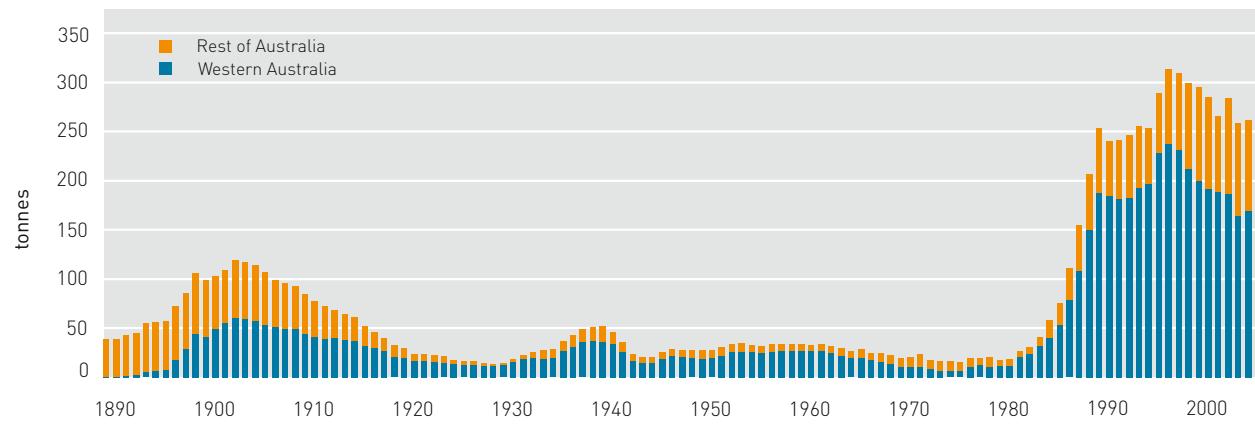


Figure 35 | **Gold Production** Source: DoIR and ABARE

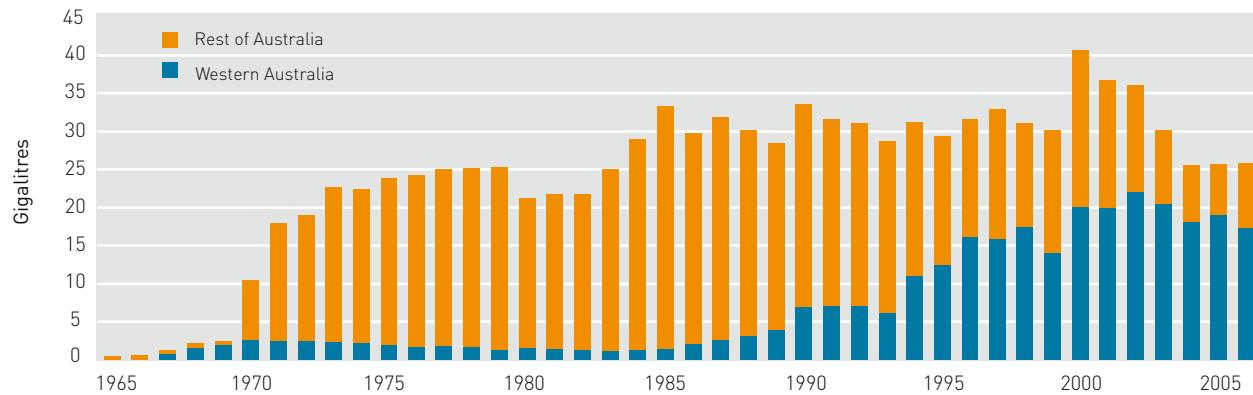


Figure 36 | **Crude Oil and Condensate Quantity** Source: DoIR and ABARE

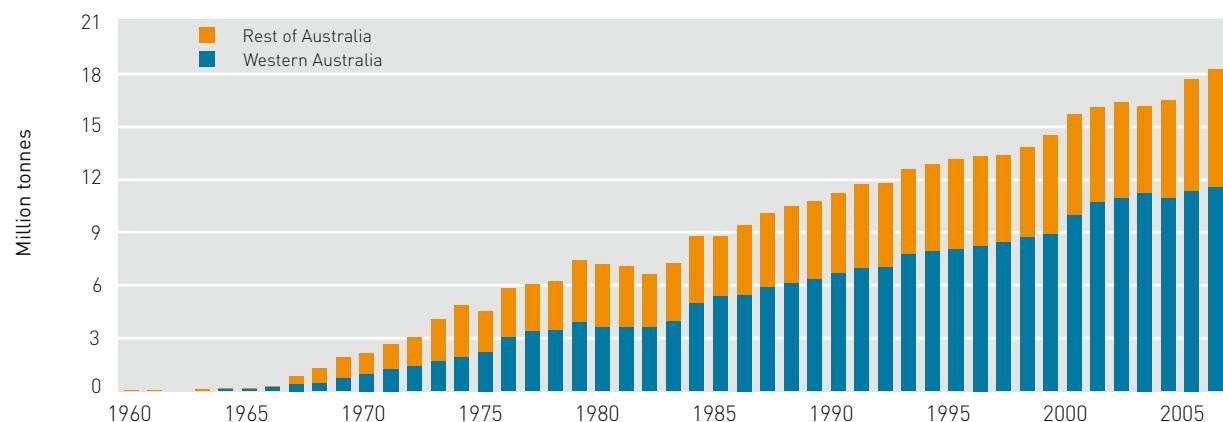


Figure 37 | **Alumina Quantity** Source: DoIR and ABARE

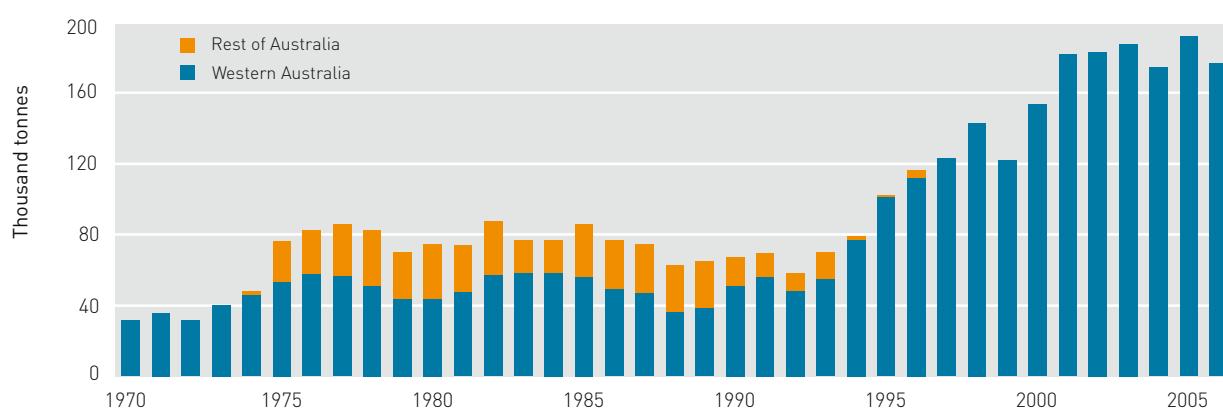


Figure 38 | **Nickel Quantity** Source: DoIR and ABARE

# QUANTITY AND VALUE BY QUARTER



Figure 39 | Iron Ore Quantity and Value by Quarter



Figure 40 | Alumina Quantity and Value by Quarter

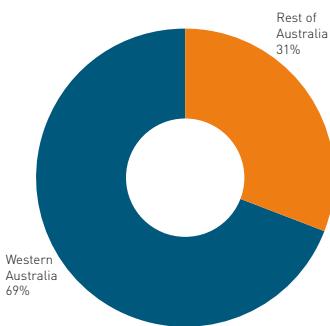


Figure 41 | Natural Gas Production 2006

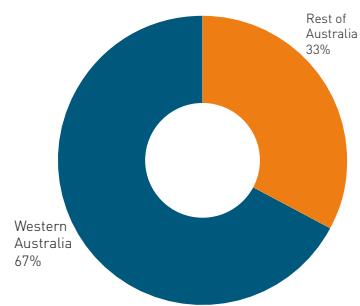


Figure 42 | Crude Oil and Condensate Production 2006

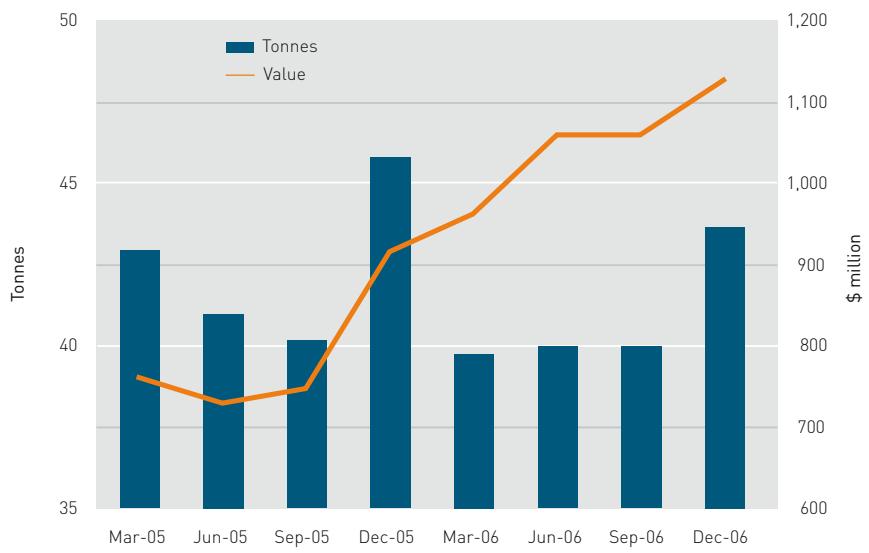


Figure 43 | Gold Quantity and Value by Quarter Source: DoIR

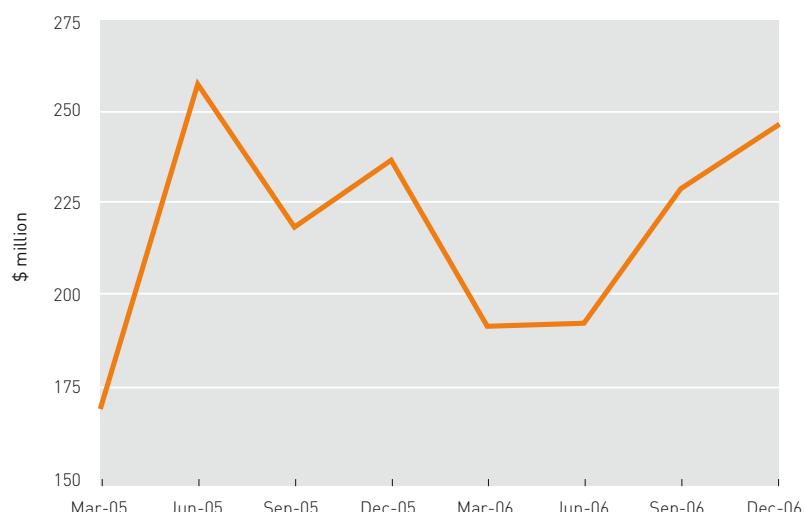


Figure 44 | Heavy Mineral Sands Value by Quarter Source: DoIR

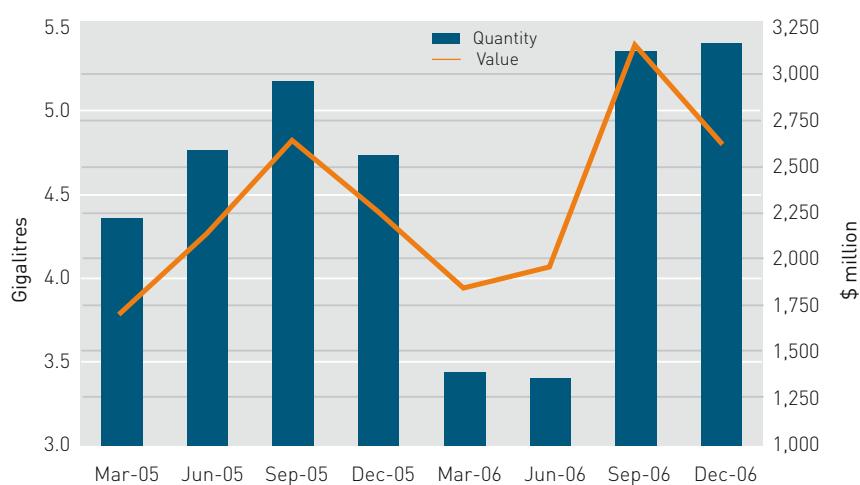


Figure 45 | Crude Oil and Condensate Quantity and Value by Quarter  
Source: DoIR

# EXPLORATION INVESTMENT

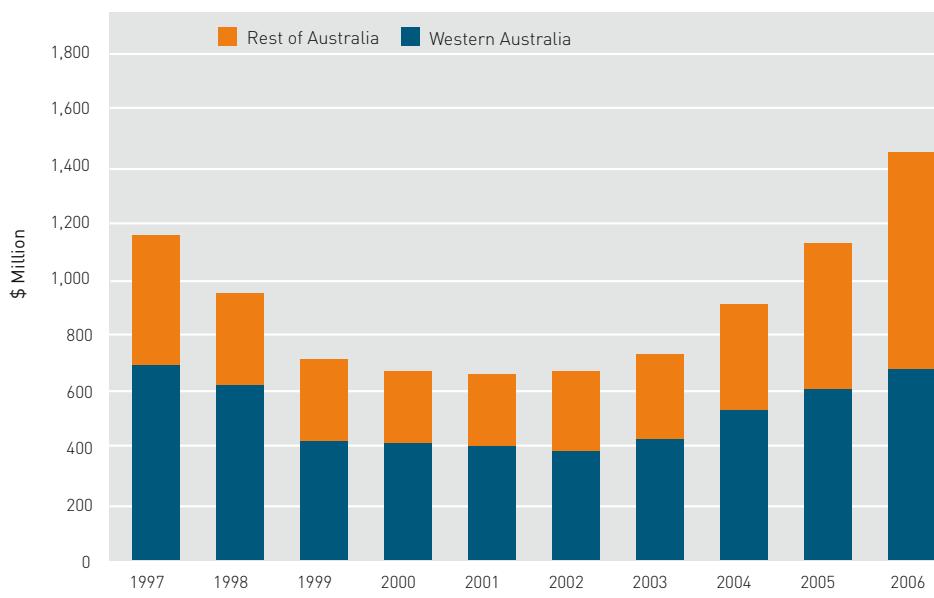


Figure 46 | Mineral Exploration Expenditure Source: Australian Bureau of Statistics

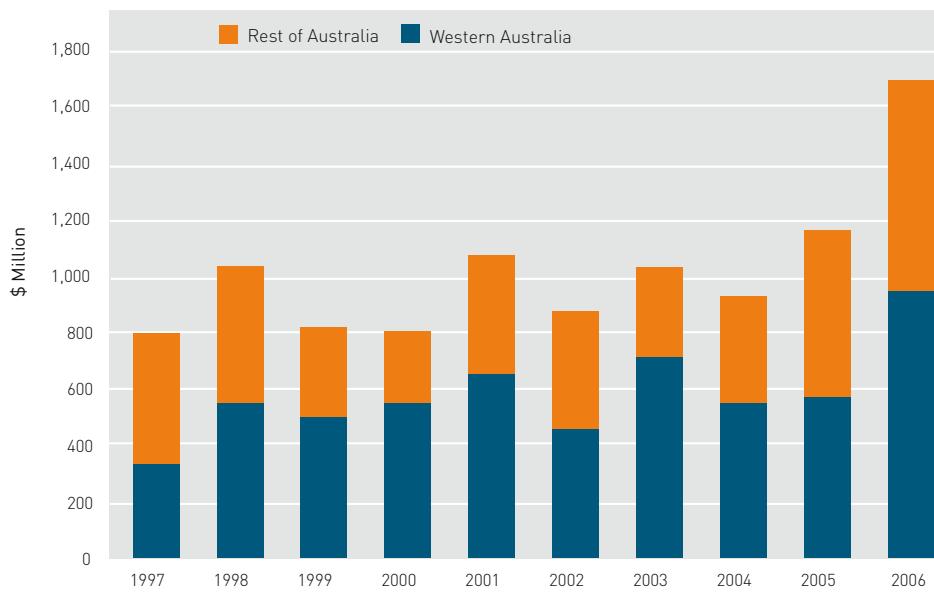


Figure 47 | Petroleum Exploration Expenditure Source: Australian Bureau of Statistics

## Tenements in Force 1978 Act

	1999–00		2000–01		2001–02		2002–03		2003–04		2004–05		2005–06	
	Number	000 ha												
Prospecting Licences	5,827	745	5,512	711	4,964	635	4,566	575	4,561	568	4,665	586	5,056	638
Exploration Licences	3,394	20,687	3,162	18,152	2,899	18,556	2,855	21,123	2,917	20,896	3,066	22,215	3,966	30,822
Mining Leases	4,865	1,829	4,841	1,803	4,820	1,774	4,770	1,762	4,713	1,716	5,172	1,805	5,118	1,806
Other	2,001	468	3,625	2,840	3,618	3,002	3,629	3,299	3,590	3,115	3,258	2,982	3,432	3,037
Mineral Claims & Other 1904 Act	194	22	186	21	186	22	186	22	186	22	186	22	186	21
Total	16,280	23,751	17,326	23,829	16,487	23,988	16,006	26,781	15,967	26,317	16,347	27,610	17,758	36,324

Source: DoIR

**Table 1 Quantity and Value of Minerals and Petroleum**

COMMODITY	UNIT	2005		2006	
		QUANTITY	VALUE	QUANTITY	VALUE
<b>ALUMINA</b>	t	11,353,963	3,655,839,040	11,604,835	4,567,929,378
<b>BASE METALS</b>					
Copper Metal	t	83,877 (r)	434,708,065 (r)	89,472	689,925,344
Lead Metal	t	30,270 (r)	41,169,846 (r)	74,845	130,607,537
Zinc Metal	t	63,606 (r)	118,906,188 (r)	138,842	353,123,644
<b>TOTAL BASE METALS</b>			594,784,098 (r)		1,173,656,525
<b>CHROMITE</b>	t	90,260 (r)	36,482,458 (r)	107,103	43,237,351
<b>CLAYS</b>			1,366,607 (r)		1,843,547
<b>COAL</b>	t	6,406,041	283,263,524	7,245,139	318,417,838
<b>CONSTRUCTION MATERIALS</b>					
Aggregate	t	525,898 (r)	9,912,629 (r)	1,337,299	34,317,509
Gravel	t	120,198 (r)	858,626 (r)	100,441	624,618
Rock	t	433,746 (r)	3,558,884 (r)	525,541	4,940,388
Sand	t	3,029,036 (r)	16,754,431 (r)	3,409,475	20,715,609
<b>TOTAL CONSTRUCTION MATERIALS</b>			31,084,570 (r)		60,598,124
<b>DIAMONDS</b>	ct	34,306,879	n/a	17,070,388	n/a
<b>DIMENSION STONE</b>		4,192 (r)	1,174,398 (r)	687	324,543
<b>GEM &amp; SEMI-PRECIOUS STONES</b>	kg	250,194 (r)	209,752 (r)	309,049	245,379
<b>GOLD</b>	kg	169,834 (r)	3,146,539,708 (r)	163,650	4,235,158,580
<b>GYPSUM</b>	t	1,407,189 (r)	23,116,387 (r)	1,095,002	19,288,809
<b>HEAVY MINERAL SANDS</b>					
Garnet	t	246,128	n/a	270,895	n/a
Ilmenite	t	666,428 (r)	73,957,841 (r)	713,012	80,719,290
Leucoxene	t	84,976 (r)	26,916,077 (r)	51,948	16,438,151
Rutile	t	100,451 (r)	63,786,633 (r)	96,067	60,462,192
Zircon	t	416,922 (r)	329,800,467 (r)	345,329	342,145,025
Other	t		385,913,614 (r)		357,359,247
<b>TOTAL HEAVY MINERAL SANDS</b>			880,374,632 (r)		857,123,905
<b>IRON ORE</b>					
Domestic	t	4,071,591 (r)	167,898,999 (r)	4,924,053	280,362,203
Exported	t	240,565,215 (r)	11,140,672,833 (r)	244,994,826	14,323,433,089
<b>TOTAL IRON ORE</b>		244,636,806 (r)	11,308,571,832 (r)	249,918,879	14,603,795,292
<b>LIMESAND-LIMESTONE-DOLOMITE</b>			42,929,910 (r)		28,985,567
<b>MANGANESE ORE</b>	t	785,008 (r)	184,391,117 (r)	906,677	211,081,452
<b>NICKEL INDUSTRY</b>					
Cobalt	t	4,593 (r)	166,948,614 (r)	5,022	208,572,561
Nickel	t	191,711 (r)	3,484,392,249 (r)	176,636	5,611,440,695
Palladium and Platinum By-Product	kg	661	6,020,111	722	7,799,669
<b>TOTAL NICKEL INDUSTRY</b>			3,657,360,974 (r)		5,827,812,925
<b>PETROLEUM</b>					
Condensate	kl	5,884,414	2,576,857,915 (r)	5,609,266	2,940,311,797
Crude Oil	kl	13,184,154	6,168,821,586 (r)	12,013,868	6,646,835,749
LNG	t	11,032,013	4,320,268,382	11,958,780	4,550,762,378
LPG - Butane and Propane	t	870,730 (r)	544,222,021 (r)	862,231	613,830,073
Natural Gas	'000m <sup>3</sup>	7,406,249	661,610,646	8,367,329	810,716,556
<b>TOTAL PETROLEUM</b>			14,397,848,654 (r)		15,562,456,553
<b>SALT</b>	t	11,475,206 (r)	213,782,655 (r)	10,326,624	235,201,627
<b>SILICA-SILICA SAND</b>			7,030,436 (r)		6,380,147
<b>SILVER</b>	kg	128,334 (r)	39,378,965 (r)	102,785	48,070,271
<b>TIN-TANTALUM-LITHIUM</b>					
Spodumene	t	173,635	n/a	222,101	n/a
Tantalite	t	1,043	n/a	584	n/a
Tin Metal	t	427	3,841,446 (r)	426	7,854,595
<b>TOTAL TIN-TANTALUM-LITHIUM</b>			192,657,468 (r)		159,153,126
<b>OTHER</b> (Includes Feldspar, Red Oxide, Spongolite, Diamonds and Talc)	t		753,857,623 (r)		459,043,486
<b>TOTAL VALUE</b>			<b>39,452,044,808 (r)</b>		<b>48,419,804,425</b>

## TABLE 2

**Table 2 Quantity and Value of Selected Major Commodities**

	Unit	1997 Quantity	1997 Value \$M	1998 Quantity	1998 Value \$M	1999 Quantity	1999 Value \$M	2000 Quantity	2000 Value \$M
ALUMINA	Mt	8.48	2,084.71	8.75	2,429.70	8.93	2,311.38	10.00	3,187.47
<b>BASE METALS</b>									
Lead Metal	kt	23.20	9.91	39.52	15.09	55.28	17.23	73.08	25.76
Zinc Metal	kt	117.20	118.10	149.33	127.85	222.54	219.59	257.72	290.11
TOTAL BASE METALS		190.47		200.07		283.07		398.48	
COAL	Mt	5.69	260.53	5.61	249.35	6.23	268.02	6.20	257.84
COBALT	kt	1.27	84.58	1.22	58.77	1.01	37.68	3.59	157.66
DIAMONDS***	M ct	40.42	421.19	52.27	642.39	51.64	640.06	42.30	713.68
GOLD	tonnes	238.34	3,414.61	231.38	3,477.73	211.76	2,939.98	199.50	3,078.65
<b>HEAVY MINERAL SANDS</b>									
Ilmenite	Mt	1.23	133.59	1.29	150.85	1.24	152.95	1.30	185.47
Rutile	kt	111.78	78.53	96.93	76.45	113.40	82.26	122.15	100.58
Zircon	kt	292.79	160.34	277.35	154.37	322.94	139.14	347.93	172.11
Other HMS		22.86		26.13		26.13		27.27	
TOTAL HEAVY MINERAL SANDS		688.18		697.59		688.49		862.93	
IRON ORE	Mt	151.72	3,633.34	143.75	4,103.92	143.01	3,517.17	158.87	4,365.19
MANGANESE ORE	kt	176.99	22.15	79.43	8.13	108.16	13.20	259.53	33.61
NICKEL METAL	kt	122.99	1,136.00	143.08	1,039.12	121.89	1,084.96	153.51	2,243.28
<b>PETROLEUM</b>									
Condensate	Gl	6.44	1,103.31	6.41	887.06	5.57	1,013.30	6.20	1,946.37
Crude oil	Gl	9.54	1,719.80	10.98	1,497.55	8.49	1,559.29	13.74	4,472.42
LNG*	Btu 10 <sup>12</sup>	377.11	2,037.60	387.96	2,044.37	387.38	1,934.44	385.61	2,986.97
LPG - Butane **	kt	320.43	93.17	384.54	86.31	390.08	116.55	450.57	225.36
LPG - Propane	kt	253.82	73.83	263.82	55.87	260.44	81.77	364.53	183.36
Natural Gas	Gm <sup>3</sup>	7.33	571.51	6.33	527.96	6.60	569.33	6.93	607.64
TOTAL PETROLEUM		5,599.22		5,099.12		5,274.68		10,422.12	
SALT	Mt	8.12	172.12	8.48	210.17	9.02	212.74	7.71	197.32
<b>OTHER</b>		101.69		206.14		192.81		297.01	
<b>TOTAL</b>		17,808.79		18,422.20		17,464.24		26,215.24	

\*Expressed in million tonnes from 2005 onwards.

\*\*LPG Butane and Propane combined from 2005 onwards.

\*\*\*Diamond values are not available from 2006 onwards and quantities are published production carats.

Western Australian Mineral and Petroleum Statistics Digest 2006											
2001		2002		2003		2004		2005		2006	
Quantity	Value \$M	Quantity	Value \$M	Quantity	Value \$M	Quantity	Value \$M	Quantity	Value \$M	Quantity	Value \$M
10.75	3,766.55	11.00	3,339.25	11.23	3,140.48	10.99	3,178.95	11.35	3,655.84	11.60	4,567.93
91.38	44.90	70.40	32.69	56.49	24.32	1.17	0.31	30.27	41.17	74.84	130.61
210.84	208.72	218.80	173.06	174.55	139.73	51.78	57.78	63.61	118.91	138.84	353.12
	374.33		351.24		309.15		219.03		594.79		1,173.66
6.20	258.21	6.26	266.40	6.03	266.41	6.31	281.91	6.41	283.26	7.25	318.42
4.26	146.27	4.70	118.95	5.17	145.04	4.55	262.18	4.59	166.95	5.02	208.57
21.68	499.53	34.37	650.34	35.48	661.86	24.23	414.81	34.31	n/a	17.07	n/a
192.20	3,236.20	188.86	3,460.87	187.50	3,364.96	164.42	2,940.98	169.83	3,146.54	163.65	4,235.16
0.83	137.32	0.85	131.26	0.86	110.46	0.76	87.94	0.67	74.00	0.71	80.72
112.93	99.01	125.41	102.66	123.63	80.28	112.93	69.02	100.45	63.79	96.07	60.46
353.17	230.00	369.92	246.74	420.55	242.01	414.07	265.07	416.92	329.80	345.33	342.15
	24.23		21.54		17.60		327.05		412.78		373.80
	909.22		855.87		760.75		749.08		880.37		857.12
162.25	5,245.93	171.77	5,064.62	194.75	5,061.06	215.85	6,173.16	244.64	11,308.57	249.92	14,603.80
498.60	76.09	578.39	75.63	587.84	65.18	593.68	106.48	785.01	184.39	906.68	211.08
181.17	2,074.48	183.00	2,242.55	190.21	2,680.24	174.70	3,261.21	191.71	3,784.39	176.64	5,611.44
6.02	1,787.91	6.88	1,928.58	6.39	1,765.46	5.94	2,011.14	5.88	2,576.86	5.61	2,940.31
14.06	4,246.65	15.29	4,502.72	14.12	4,034.63	12.25	4,211.56	13.18	6,168.82	12.01	6,646.84
389.57	3,482.87	394.11	2,791.22	408.27	2,874.61	454.12	3,150.81	11.03	4,320.27	11.96	4,550.76
475.25	217.54	458.15	197.56	425.20	182.83	398.84	189.28	870.73	544.22	862.23	613.83
385.83	185.08	357.41	165.88	319.97	142.72	322.85	151.13				
7.67	642.08	7.75	650.20	8.11	690.45	7.71	655.46	7.41	661.61	8.37	810.72
	10,562.13		10,236.16		9,690.71		10,369.39		14,397.85		15,562.46
8.58	249.24	9.17	250.53	9.75	197.01	10.40	185.08	11.48	213.78	10.33	235.20
	379.55		389.16		343.08		353.17		835.31		834.97
	27,777.73		27,301.57		26,685.93		28,495.43		39,452.04		48,419.80

# TABLE 3

**Table 3 Value of Minerals and Petroleum by Region and Local Government Area 2006**

Pilbara Region	2006 Value	Kimberley Region	2006 Value
Roebourne	14,576,479,723	Wyndham-East Kimberley	406,934,076
East Pilbara	10,305,825,985	Halls Creek	309,009,447
Ashburton	5,861,098,294	Derby-West Kimberley	116,972,701
Port Hedland	98,944,934	Broome	5,390,307
Karratha and Marble Bar	87,570	<b>Total</b>	<b>838,306,531</b>
<b>Total</b>	<b>30,842,436,505</b>	<b>South West Region</b>	
<b>Goldfields-Esperance Region</b>		Bridgetown-Greenbushes and Capel	375,308,420
Coolgardie	3,492,499,445	Collie	318,660,910
Kalgoorlie-Boulder	1,643,669,559	Bunbury, Dardanup and Manjimup	54,635,562
Laverton	1,294,996,165	<b>Total</b>	<b>748,604,892</b>
Leonara	965,700,799	<b>Wheatbelt Region</b>	
Dundas	456,481,828	Yilgarn	533,013,282
Ravensthorpe	2,094,456	Dandaragan	171,122,102
Menzies	1,546,764	Dalwallinu, Kondinin and Koorda	3,004,806
Esperance	457,202	Gingin and Wyalkatchem	2,011,547
<b>Total</b>	<b>7,857,446,218</b>	Chittering, Corrigin and Moora	1,527,946
<b>Peel Region</b>		Mukinbudin, Northam and Nungarin	505,233
Waroona	2,740,757,627	Lake Grace	275,164
Boddington	1,279,020,226	<b>Total</b>	<b>711,460,079</b>
Murray	548,151,525	<b>Gascoyne Region</b>	
<b>Total</b>	<b>4,567,929,378</b>	Carnarvon	45,609,558
<b>Mid West Region</b>		Exmouth, Shark Bay and Upper Gascoyne	22,022,282
Wiluna and Three Springs	859,652,480	<b>Total</b>	<b>67,631,840</b>
Yalgoo	527,757,862	<b>Perth Metropolitan Region</b>	
Carnamah and Coorow	385,736,842	Kalamunda, Swan and Wanneroo	14,479,913
Irwin	346,705,257	Cockburn, Kwinana and Rockingham	14,170,167
Morawa, Mullewa and Mt Magnet	258,403,072	<b>Total</b>	<b>28,650,080</b>
Meekatharra	240,296,238	<b>Great Southern Region</b>	
Northampton, Perenjori and Sandstone	91,632,591	Albany, Kent and Plantagenet	4,476,015
Cue	42,678,545		
<b>Total</b>	<b>2,752,862,887</b>		

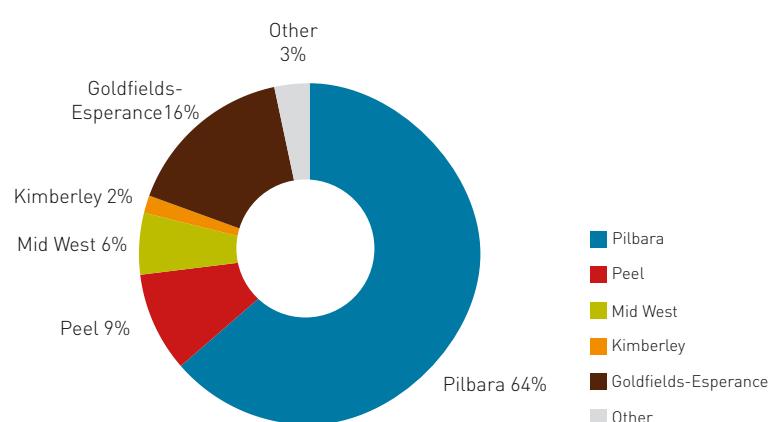


Figure 48

**Regional Value of Minerals and Petroleum 2006**

Source: DoR

**Table 4 Value of Minerals and Petroleum by Region and Commodity 2006**

<b>Pilbara Region</b>	<b>2006 Value</b>	<b>Kimberley Region</b>	<b>2006 Value</b>
Iron Ore	14,022,629,892	Nickel, Cobalt and Diamonds	722,795,198
Crude Oil and Condensate	9,267,517,443	Iron Ore, Copper and Gold	108,055,460
Liquefied Natural Gas	4,550,762,378	Other	7,455,873
Natural Gas	781,654,343	<b>Total</b>	<b>838,306,531</b>
LPG Butane and Propane	613,830,073		
Gold	613,514,126	<b>South West Region</b>	
Copper	545,075,050	Coal	318,417,838
Other	447,453,200	Heavy Mineral Sands	270,754,747
<b>Total</b>	<b>30,842,436,505</b>	Tin, Tantalum and Spodumene	159,153,126
		Other	279,181
<b>Goldfields Esperance Region</b>		<b>Total</b>	<b>748,604,892</b>
Nickel	4,953,409,872		
Gold	2,670,251,261	<b>Wheatbelt Region</b>	
Cobalt	172,313,951	Iron Ore and Gold	526,017,014
Copper	29,165,933	Gypsum and Heavy Mineral Sands	172,960,241
Silver	11,146,369	Nickel and Salt	7,960,349
Construction Materials	5,230,821	Other	4,522,476
Other	15,928,010	<b>Total</b>	<b>711,460,079</b>
<b>Total</b>	<b>7,857,446,218</b>		
		<b>Gascoyne Region</b>	
<b>Peel Region</b>		Salt and Gems	51,338,667
Alumina	4,567,929,378	Gypsum and Limesand-Limestone	16,278,773
<b>Total</b>	<b>4,567,929,378</b>	Other	14,400
		<b>Total</b>	<b>67,631,840</b>
<b>Mid West Region</b>			
Gold	813,314,669	<b>Perth Metropolitan Region</b>	
Nickel, Cobalt and Iron Ore	519,895,085	Construction Materials, Silica Sand, Limesand-Limestone	28,650,080
Heavy Mineral Sands	416,464,846	<b>Total</b>	<b>28,650,080</b>
Zinc	353,123,644		
Crude Oil	317,163,801	<b>Great Southern Region</b>	
Lead	130,607,537	Gypsum, Silica Sand and Spongolite	4,476,015
Chromite	43,237,351		
Silver	31,655,126		
Natural Gas	29,062,213		
Other	98,338,616		
<b>Total</b>	<b>2,752,862,887</b>		

## TABLE 5

**Table 5 Royalty Receipts 2005 and 2006**

COMMODITY	2005	2006	2006 Growth	
	Total A\$	Total A\$	A\$	%
ALUMINA	57,283,452	74,832,357	17,548,905	31
DIAMONDS	50,335,666	27,687,850	-22,647,816	(45)
GOLD	74,081,030	96,783,542	22,702,512	31
HEAVY MINERAL SANDS	27,659,973	30,382,404	2,722,431	10
IRON ORE	534,957,577	774,772,795	239,815,218	45
NICKEL, (Includes, cobalt, palladium and platinum)	91,315,544	117,656,480	26,340,936	29
PETROLEUM				
Oil and Condensate	326,543,079	346,118,421	19,575,342	6
LNG, LPG and Natural Gas	298,147,495	354,712,368	56,564,873	19
TOTAL PETROLEUM	624,690,574	700,830,789	76,140,215	12
OTHER	52,918,213	91,654,441	38,736,228	73
<b>TOTAL REVENUE</b>	<b>1,513,242,029</b>	<b>1,914,600,658</b>	<b>401,358,629</b>	<b>27</b>

Note: All Royalty Receipts above are only those paid into the State's Consolidated Revenue Fund during the period.  
It does not include royalty receipts collected on behalf of the Commonwealth.

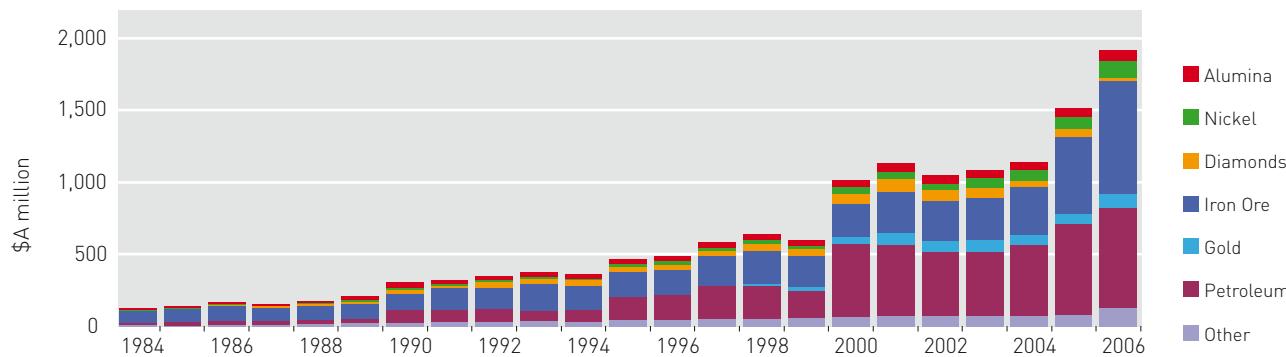


Figure 49 | Royalty Receipts by Commodity Source: DoIR

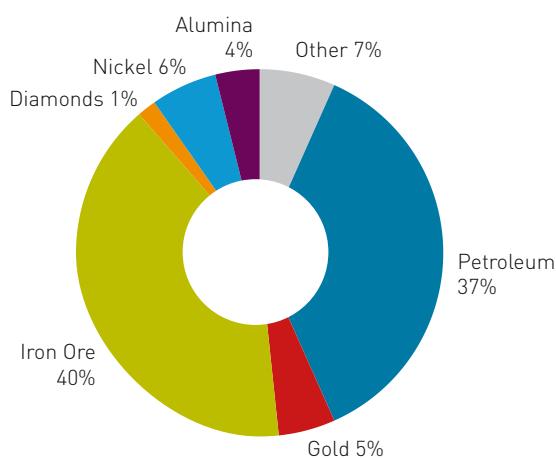


Figure 50 | Royalty Receipts 2006

**Table 6 Average Number of Persons Employed In The WA Minerals & Petroleum Industries**

<b>MINERAL/COMPANY</b>	<b>OPERATING SITE</b>	<b>2005</b>	<b>2006</b>
<b>BASE METALS</b>			
Birla (Nifty) Pty Ltd	Nifty	681	852
Jabiru Metals Ltd	Jaguar	10	107
Magellan Metals Pty Ltd	Magellan	107	154
Newmont Mining Company	Golden Grove	537	740
Straits (Whim Creek) Pty Ltd	Whim Creek	110	110
Teck Cominco WA Pty Ltd	Pillara	23	62
<b>TOTAL BASE METALS</b>		<b>670</b>	<b>912</b>
<b>BAUXITE - ALUMINA</b>			
Alcoa of Australia Ltd	Huntly	703	606
	Kwinana Alumina Refinery	1,776	1,635
	Pinjarra Refinery	3,087	2,468
	Wagerup Alumina Refinery	1,126	1,329
	Willowdale	394	346
Australian Fused Materials Pty Ltd	Rockingham Fused Alumina Plant	89	91
Worsley Alumina Pty Ltd	Boddington	285	301
	Worsley Refinery	2,251	2,191
<b>TOTAL BAUXITE - ALUMINA</b>		<b>9,711</b>	<b>8,967</b>
<b>COAL</b>			
Griffin Coal Mining Co. Pty Ltd	Muja	340	407
Wesfarmers Coal Ltd	Premier/WCL	376	364
<b>TOTAL COAL</b>		<b>716</b>	<b>771</b>
<b>DIAMONDS</b>			
Argyle Diamond Mines Pty Ltd	Lake Argyle	1,254	1,230
Kimberley Diamond Company NL	Ellendale	225	384
<b>TOTAL DIAMONDS</b>		<b>1,479</b>	<b>1,614</b>
<b>GOLD</b>			
Agincourt Resources Limited	Wiluna	258	211
Agnew Gold Mining Co Pty Ltd	Agnew-Emu	923	1,010
AGR Matthey	Perth Mint	124	120
AngloGold Australia Ltd	Sunrise Dam	893	930
	Mandilla	0	11
Barrick Gold Corporation	Darlot	198	241
	Lawlers	296	335
	Plutonic	492	466
Coolgardie Mining Company Pty Ltd	Coolgardie	47	13
Crescent Gold Limited	Laverton	0	11
Croesus Mining NL	Central Norseman	209	218
	Hannan South	3	2
Equigold NL	Kirkalocka	81	50
Gindalbie Gold NL	Minjar	6	6

## TABLE 6 cont.

**Table 6 Average Number of Persons Employed In The WA Minerals & Petroleum Industries**

<b>MINERAL/COMPANY</b>	<b>OPERATING SITE</b>	<b>2005</b>	<b>2006</b>
Gleneagle Gold Limited	Fortnum	0	45
Hill 50 Gold NL	Hill 50, Mt Magnet	396	399
Haoma Mining NL	Bamboo Creek	18	18
Intrepit Mines Limited	Paulsens	134	62
Jervois Mining Limited	Bullabulling	8	15
Kalgoorlie Consolidated Gold Mines Pty Ltd	Golden Mile - Superpit	1,410	1,503
Kingrose Mining Pty Ltd	Sand Queen	0	12
King Solomon Mines Limited	Gullewa	0	7
La Mancha Resources Australia Pty Ltd	Frogs Leg	96	16
Legend Mining Limited	Gidgee	36	3
LionOre Australia Pty Ltd	Thunderbox	256	288
Mercator Gold Australia Pty Ltd	Bluebird	19	39
Monarch Resources Limited	Davyhurst	67	10
Newcrest Australia Ltd	Telfer	1,924	1,910
Newfield Central Pty Ltd	Newfield Central	7	0
Newmont Mining Corporation	Boddington	57	210
Newmont Yandal Operations Ltd	Jundee, Nimary	592	590
Perilya Daisy-Milano Pty Ltd	Daisy-Milano	65	73
Placer Dome Inc	Granny Smith	526	338
Placer Dome Asia Pacific Limited	Kanowna Belle	301	1
	Kalgoorlie West	595	806
Ramelius Resources Limited	Wattle Dam	0	12
Range River Gold Limited	Indee	0	72
Roche Mining (Jr) Pty Ltd	Mt Olympus	0	13
Siberia Gold Operation Pty Ltd	Siberia	8	0
South Kal Mines Pty Ltd	South Kal - New Celebration	254	227
St. Barbara Mines Ltd	Carosue Dam	187	8
	Marvel Loch	343	414
	Sons of Gwalia	49	148
St Ives Gold Mining Company Pty Limited	Kambalda-St Ives	1,091	1,194
Tanami Gold NL	Coyote	0	69
Tectonic Resources NL	Burnakura	59	85
Troy Resources Ltd	Sandstone-Bulchina-Mt Klempitz	68	82
View Resources Ltd	Bronzewing, Mt McClure	10	7
Other		15	14
<b>TOTAL GOLD</b>		<b>12,121</b>	<b>12,314</b>
<b>HEAVY MINERAL SANDS</b>			
BHP Titanium Minerals Pty Ltd	Beenup	8	9
Cable Sands Pty Ltd	Bunbury	333	215
Doral Mineral Sands Pty Ltd	Dardanup	278	123
GMA Garnet Pty Ltd	Narngulu Garnet Plant	30	32
	Port Gregory	26	28

**Table 6 Average Number of Persons Employed In The WA Minerals & Petroleum Industries**

MINERAL/COMPANY	OPERATING SITE	2005	2006
Hanwah Advanced Ceramics Australia Pty Ltd	Rockingham Zirconia Plant	21	19
Iluka Resources Limited	Capel	587	702
	Eneabba	308	378
	Narngulu Synthetic Rutile Plants	487	636
	Gingin	66	105
TiWest Pty Ltd	Chandala-Muchea	251	271
	Cooljarloo	379	380
	Bunbury Port	15	16
<b>TOTAL HEAVY MINERAL SANDS</b>		<b>2,789</b>	<b>2,914</b>
<b>IRON ORE</b>			
BHP Iron Ore (Goldsworthy) Ltd	Finucane Island	272	165
	Yarrie	284	274
BHP Iron Ore (Jimblebar) Ltd	Jimblebar	305	200
BHP Iron Ore Ltd	Mining Area C	364	804
	Mt Newman Railway	586	745
	Mt Whaleback	1,719	1,553
	Mt Whaleback laboratory-explosives facility	0	14
	Nelson Point	753	808
	Mt Newman Orebody 25	190	251
	Mt Newman Orebody 18 - Shovelanna Hill	67	128
	Port Hedland HBI Plant	222	51
	PACE	204	480
	Yandi	491	645
Fortescue Metals Group Ltd	Cloud Break Trial Pit	8	38
Hamersley Iron Pty Ltd	Brockman No. 2 Detritals Group	223	355
	Dampier Port Operations	1,466	1,727
	Nammuldi	57	24
	Hlsmelt - Kwinana	324	404
	Marandoo	186	168
	Paraburdoo	881	959
	Paraburdoo power plant	0	35
	Tom Price	1,301	1,221
	Tom Price brownfields mine expansion	0	305
	Yandicoogina	614	1,154
Koolyanobbing Iron Pty Ltd	Cockatoo Island	121	115
	Koolyanobbing	365	536
Mount Gibson Mining Ltd	Tallering Peak	144	259
	Koolan Island	0	147
Murchison Metals Ltd	Jack Hills	0	19

## TABLE 6 cont.

**Table 6 Average Number of Persons Employed In The WA Minerals & Petroleum Industries**

MINERAL/COMPANY	OPERATING SITE	2005	2006
Pilbara Railway Company	Hamersley, Robe River and West Angelas Rail	546	654
Rio Tinto Limited	Hope Downs	0	164
Robe River Mining Co. Pty Ltd	Cape Lambert	902	761
	Pannawonica Deepdale	478	370
	West Angelas Plant	654	670
<b>TOTAL IRON ORE</b>		<b>13,727</b>	<b>16,203</b>
<b>NICKEL</b>			
Australian Mines Ltd	Blair Group	54	37
Australian Nickel Mines NL	Armstrong	1	0
BHP Billiton Minerals Pty Ltd	Ravensthorpe Group	378	1,424
Fox Resources Ltd	Radio Hill	108	119
Goldfields Mine Management Pty Ltd	Kambalda	133	126
Kimberley Nickel Mines Pty Ltd	Sally Malay Group	235	181
Lanfranchi Nickel Mines	Lanfranchi	48	98
Lightning Nickel Pty Ltd	Long Nickel	129	148
LionOre Australia Ltd	Emily Ann	272	415
	Honeymoon Well	531	210
	Waterloo	0	59
LionOre Australia (Avalon) Pty Ltd	Bulong	14	11
Mincor Resources NL	Mitel and Wannaway	307	289
MPI Mines Ltd	Black Swan	264	417
Murrin Murrin Operations	Murrin Murrin	1,842	1,911
OMG Cawse Pty Ltd	Cawse	221	224
Reliance Operations Limited	Beta-Hunt	145	171
Sir Samuel Mines NL	Cosmos	135	161
Tectonic Resources NL	RAV 8	44	6
Western Areas NL	Forrestania	74	140
View Resources Ltd	Carnilya Hill	29	1
BHBP Billiton (Nickel West)	Cliffs	30	26
	Kalgoorlie Nickel Smelter	1,093	1,012
	Kambalda Group	267	429
	Kwinana Refinery	401	461
	Leinster	1,424	1,234
	Mt Keith	1,244	1,273
<b>TOTAL NICKEL</b>		<b>9,423</b>	<b>10,583</b>
<b>PETROLEUM PRODUCTS</b>			
Apache Energy Ltd	Agincourt, Albert, Artreus, Bambra, Double Island, East Spar, Endymion, Gipsy, Gudren, Harriet, Hoover, John Brookes, Linda, Little Sandy, Mohave, Monet, North Alkimos, North Pedirka, Pedirka, Rose, Simpson, Sinbad, South Plato, Stag, Tanami, Victoria, Wonnich	383	214

**Table 6 Average Number of Persons Employed In The WA Minerals & Petroleum Industries**

MINERAL/COMPANY	OPERATING SITE	2005	2006
ARC Energy NL	Dongara, Hovea-Eremia, Mt Horner, Xyris	27	20 (e)
BHP Billiton Petroleum (North West Shelf) Pty Ltd	Griffin, Chinook-Scindian, Tubridgi	125	90
Chevron Australia Pty Ltd	Barrow Island, Cowle, Crest, Roller, Skate, Saladin, Yammaderry	817 (e)	848 *
Eni Australia Limited	Woollybutt	65	65 (e)
Kimberley Oil NL	Blina, Boundary, Lloyd, Sundown, West Terrace	4	4
Origin Energy Resources Ltd	Beharra Springs, Jingemia, Tarantula	39 (e)	30
Santos Ltd	Exeter, Mutineer	74	45
Vermillion Energy	Wandoo	28	43
Woodside Energy Ltd	Athena, Cossack, Echo-Yodel, Goodwyn, Hermes, Laminaria East, Legendre, North Rankin, Wanaea	3,054	3,297 *
<b>TOTAL PETROLEUM PRODUCTS</b>		<b>4,616</b>	<b>4,656</b>
<b>SALT</b>			
Dampier Salt Ltd	Port Hedland	167	184
	Dampier	229	206
	Lake MacLeod	181	184
Onslow Solar Salt Pty Ltd	Onslow	188	181
Shark Bay Salt JV	Useless Loop	71	66
WA Salt Supply Koolyanobbing Pty Ltd	Lake Deborah East	10	10
Western Salt Refinery Pty Ltd	Pink Lake	7	7
<b>TOTAL SALT</b>		<b>853</b>	<b>838</b>
<b>TOTAL CHROMITE</b>		<b>65</b>	<b>70</b>
<b>TOTAL CLAYS</b>		<b>74</b>	<b>70</b>
<b>TOTAL CONSTRUCTION MATERIALS</b>		<b>340</b>	<b>417</b>
<b>TOTAL DIMENSION STONE</b>		<b>136</b>	<b>153</b>
<b>TOTAL INDUSTRIAL PEGMATITE MINERALS</b>		<b>21</b>	<b>21</b>
<b>TOTAL LIMESTONE - LIMESAND</b>		<b>111</b>	<b>112</b>
<b>TOTAL MANGANESE ORE</b>		<b>350</b>	<b>238</b>
<b>TOTAL PHOSPHATE</b>		<b>141</b>	<b>138</b>
<b>TOTAL SILICA - SILICA SAND</b>		<b>192</b>	<b>196</b>
<b>TOTAL SILVER</b>		<b>28</b>	<b>35</b>
<b>TOTAL TALC</b>		<b>134</b>	<b>93</b>
<b>TOTAL TIN - TANTALUM - LITHIUM</b>		<b>572</b>	<b>465</b>
<b>TOTAL VANADIUM</b>		<b>9</b>	<b>7</b>
<b>ALL OTHER MATERIALS</b>		<b>29</b>	<b>27</b>
<b>TOTAL</b>		<b>58,214</b>	<b>61,709</b>

(SOURCE: AXTAT REPORTING SYSTEM, DOCEP for minerals and PETROLEUM PRODUCERS for petroleum)

\* Includes some administration personnel off site

(e) estimated

# TABLE 7

**Table 7 Principal Mineral and Petroleum Producers Effective 1 April 2007**

## BASE METALS

### COPPER-LEAD-ZINC

**Birla Nifty Pty Ltd,**  
Level 3, 256 Adelaide Terrace,  
Perth WA 6000,  
(08) 9366 8800  
Nifty.  
[http://www.adityabirla.com/our\\_companies/international\\_companies/birla\\_nifty.htm](http://www.adityabirla.com/our_companies/international_companies/birla_nifty.htm)

**BHP Billiton (Nickel West)**  
191 Great Eastern Highway,  
Belmont WA 6104,  
(08) 9479 0500,  
Kambalda.  
[www.bhpbilliton.com](http://www.bhpbilliton.com)

**Fox Resources Ltd,**  
Suite 1 and 2,  
614 Newcastle Street,  
Leederville WA 6007,  
(08) 9318 5600  
Whundo,  
[www.foxresources.com.au](http://www.foxresources.com.au)

**Newcrest Mining Ltd**  
Level 2, 20 Terrace Road  
East Perth WA 6004  
(08) 9270 7070  
Telfer.  
[www.newcrest.com.au](http://www.newcrest.com.au)

**Magellan Metals Pty Ltd,**  
96 Welshpool Road,  
Welshpool WA 6106,  
(08) 9267 7000,  
Magellan,  
[www.ivernia.com](http://www.ivernia.com)

**Oxiana Limited,**  
Level 9,  
31 Queen Street,  
Melbourne Vic 3000  
(03) 8623 2200,  
Golden Grove.  
[www.oxiana.com.au](http://www.oxiana.com.au)

**Straits Resources Limited,**  
Level 1, 35 Ventnor Avenue,  
West Perth WA 6005,  
(08) 9480 0500,  
Mons Cupri,  
[www.straits.com.au](http://www.straits.com.au)

## BAUXITE-ALUMINA

### ALUMINA

**Alcoa World Alumina Australia,**  
181–205 Davy Street,  
Booragoon WA 6154,  
(08) 9316 5111,  
Del Park, Willowdale, Huntly,  
[www.alcoa.com.au](http://www.alcoa.com.au)

**Worsley Alumina Pty Ltd,**  
PO Box 344,  
Collie WA 6225,  
(08) 9734 8311,  
Boddington,  
[www.wapl.com.au](http://www.wapl.com.au)

## CHROMITE

### CHROMITE ORE

**Pilbara Chromite Pty Ltd,**  
28 Ventnor Ave,  
West Perth WA 6005,  
(08) 9321 3633,  
Coobina,  
[www.consminerals.com.au](http://www.consminerals.com.au)

## CLAY

### ATTAPULGITE

**Hudson Resources Ltd,**  
2 Kemp Street, Narngulu,  
Geraldton WA 6530,  
(08) 9923 3604,  
Lake Nerramyne,  
[www.hudsonresources.com](http://www.hudsonresources.com)

### CLAY SHALE

**The Griffin Coal Mining Company Pty Limited,**  
28 The Esplanade,  
Perth WA 6000,  
(08) 9261 2800,  
Collie  
[www.griffincoal.com.au](http://www.griffincoal.com.au)

### FIRE CLAY

**Midland Brick Company Pty Ltd,**  
102 Great Northern Highway,  
Middle Swan WA 6056,  
(08) 9273 5522,  
Bullsbrook North,  
[www.midlandbrick.com.au](http://www.midlandbrick.com.au)

### KAOLIN

**Sons of Gwalia Ltd,**  
Level 3, 30 The Esplanade,  
Perth WA 6000,  
(08) 9263 5555,  
Greenbushes,  
[www.sog.com.au](http://www.sog.com.au)

### SAPONITE

**Watheroo Minerals Pty Ltd,**  
PO Box 353,  
Dunsborough, WA 6281,  
(08) 9756 6121,  
Watheroo Clays,  
[www.bentoniteproductswa.com.au](http://www.bentoniteproductswa.com.au)

## COAL

**The Griffin Coal Mining Company Pty Limited,**  
28 The Esplanade,  
Perth WA 6000,  
(08) 9261 2800,  
Collie  
[www.griffincoal.com.au](http://www.griffincoal.com.au)

**Wesfarmers Premier Coal Ltd,**  
Premier Road,  
Collie WA 6225,  
(08) 9780 2222  
Collie  
[www.wesfarmers.com.au](http://www.wesfarmers.com.au)

## CONSTRUCTION MATERIALS

### AGGREGATE

**The Readymix Group (WA),**  
Technology Park,  
18-20 Brodie Hall Drive,  
Bentley WA 6102  
(08) 9212 2000,  
Boodarie, Burrup-Dampier,  
[www.readymix.com.au](http://www.readymix.com.au)

### GRAVEL

**Boral Resources (WA) Ltd,**  
63-69 Abernethy Road,  
Belmont WA 6104,  
(08) 9333 3400,  
Grosmont,  
[www.boral.com.au](http://www.boral.com.au)

### WA Limestone Co.,

41 Spearwood Avenue,  
Bibra Lake WA 6163,  
(08) 9434 2299,  
Pickering Brook

### SAND

**Boral Resources (WA) Ltd,**  
63-69 Abernethy Road,  
Belmont WA 6104,  
(08) 9333 3400,  
Grosmont,  
[www.boral.com.au](http://www.boral.com.au)

Rocla Quarry Products,  
130 Fauntleroy Avenue,  
Redcliffe WA 6104,  
(08) 9475 2555,  
Gnangarra,  
[www.rocla.com.au](http://www.rocla.com.au)

**The Readymix Group (WA),**  
Technology Park,  
18-20 Brodie Hall Drive,  
Bentley WA 6102  
(08) 9212 2000,  
Various sites,  
[www.readymix.com.au](http://www.readymix.com.au)

## Table 7 Principal Mineral and Petroleum Producers Effective 1 April 2007

**Tuma Holdings Pty Ltd,**  
T/as Action Sand Supplies  
42 Noel Road,  
Gooseberry Hill WA 6076,  
(08) 9275 1100  
Mobile: 0408 923 801  
The Lakes, Mundaring

### DIAMONDS

**Argyle Diamonds Australia**  
2 Kings Park Road,  
West Perth WA 6005,  
(08) 9482 1166,  
Argyle,  
[www.argylediamonds.com.au](http://www.argylediamonds.com.au)

**Kimberley Diamond Company**  
12 Walker Avenue,  
West Perth WA 6005,  
(08) 9321 5887,  
Ellendale,  
[www.kimberleydiamondco.com.au](http://www.kimberleydiamondco.com.au)

### DIMENSION STONE

#### GRANITE

**Fraser Range Granite NL,**  
Eyre Highway,  
Norseman WA 6443,  
(08) 9039 3442,  
Fraser Range Granite

### FELDSPAR

**Unimin Australia Ltd,**  
26-28 Tomlinson Road,  
Welshpool WA 6106,  
(08) 9362 1655,  
Pippingarra, Mukinbudin,  
[www.unimin.com.au](http://www.unimin.com.au)

### GOLD

**Agincourt Resources Limited**  
1st Floor  
16 Ord Street  
West Perth WA 6005  
(08) 9216 5800  
Wiluna, Lake Way Gold  
[www.agincourtresources.com.au](http://www.agincourtresources.com.au)

**Agnew Gold Mining Co Pty Ltd,**  
PMB 10,  
Leinster WA 6437,  
(08) 9088 3822,  
Agnew,  
[www.goldfields.co.za](http://www.goldfields.co.za)

**AngloGold Australia Ltd,**  
Level 13, St Martin's Tower,  
44 St Georges Terrace,  
Perth WA 6000,  
(08) 9425 4600,  
Sunrise Dam,  
[www.anglogold.com](http://www.anglogold.com)

**Barrick Gold of Australia Limited,**  
Level 10, 2 Mill Street,  
Perth WA 6000,  
(08) 9212 5777,  
Darlot, Lawlers, Plutonic, Granny Smith,  
Kanowna Belle, Golden Feather,  
East Kundana, Paddington.  
[www.barrick.com](http://www.barrick.com)

**Croesus Mining NL,**  
39 Porter Street,  
Kalgoorlie WA 6430,  
(08) 9091 2222,  
Norseman,  
[www.croesus.com.au](http://www.croesus.com.au)

**Equigold NL,**  
1st Floor, 7 Sleat Road,  
Applecross WA 6153,  
(08) 9316 3661,  
Kirkalocka,  
[www.equigold.com.au](http://www.equigold.com.au)

**Harmony Gold (Australia) Pty Ltd,**  
Level 1, 10 Ord Street,  
West Perth WA 6005,  
(08) 9211 3100,  
Hill 50-Mt Magnet, South Kal Mines-New Celebration,  
[www.harmony.co.za](http://www.harmony.co.za)

**Kalgoorlie Consolidated Gold Mines Pty Ltd,**  
Private Bag 27,  
Kalgoorlie WA 6433,  
(08) 9022 1100,  
Golden Mile Fimiston Super Pit  
[www.superpit.com.au](http://www.superpit.com.au)

**LionOre Australia Pty Ltd,**  
PO Box 205,  
Leinster WA 6437,  
(08) 9088 3400,  
Thunderbox,  
[www.lionore.com](http://www.lionore.com)

**Monarch Gold Mining Company Limited,**  
Level 1, 23 Ventnor Avenue,  
West Perth WA 6005,  
(08) 9481 6422,  
Davyhurst,  
[www.mrl.net.au](http://www.mrl.net.au)

**Newcrest Mining Ltd**  
Level 2, 20 Terrace Road  
East Perth WA 6004  
(08) 9270 7070  
Telfer.  
[www.newcrest.com.au](http://www.newcrest.com.au)

**Newmont Australia,**  
PO Box 1652,  
Subiaco WA 6904,  
(08) 9983 7000 (site)  
Jundee-Nimary,  
[www.newmont.com](http://www.newmont.com)

**Nustar Mining Corporation Limited,**  
Level 2, 34 Colin Street,  
West Perth WA 6005  
(08) 9346 0000,  
Paulsens,  
[www.nustarmining.com.au](http://www.nustarmining.com.au)

**Perilya Daisy-Milano Pty Ltd**  
PO Box 675,  
Kalgoorlie WA 6433  
(08) 9024 2222,  
Mt Monger-Ridgeview, Daisy Milano,  
[www.perilya.com.au](http://www.perilya.com.au)

**St Barbara Mines Ltd,**  
1205 Hay Street,  
West Perth WA, 6005  
(08) 9476 5555,  
Kirkalocka, Marvel Loch-Southern Cross,  
[www.stbarbara.com.au](http://www.stbarbara.com.au)

**St Ives Gold Mining Co Pty Ltd,**  
POB 359  
Kambalda WA 6442,  
(08) 9088 1111,  
Kambalda-St Ives,  
[www.goldfields.co.za](http://www.goldfields.co.za)

**Troy Resources NL,**  
44 Ord Street,  
West Perth WA 6005,  
(08) 9481 1277,  
Sandstone,  
[www.try.com.au](http://www.try.com.au)

**Yilgarn Mining Ltd,**  
Suite 3, 9 Bowman Street,  
South Perth WA 6151,  
(08) 9474 3911,  
Rose Dam,  
[www.yilgarnmining.com.au](http://www.yilgarnmining.com.au)

### GYPSUM

**Cockburn Cement Ltd,**  
Lot 242 Russell Road East  
East Munster WA 6166,  
(08) 9411 1000,  
Lake Hillman.

**CSR Limited,**  
21 Sheffield Road,  
Welshpool WA 6106,  
(08) 9365 1666,  
Jurien Bay North.

**Dampier Salt Pty Ltd,**  
37 Belmont Avenue  
Belmont WA 6104  
(08) 9270 9270,  
Lake MacLeod  
[www.dampiersalt.com.au](http://www.dampiersalt.com.au)

# TABLE 7 cont.

**Table 7 Principal Mineral and Petroleum Producers Effective 1 April 2007**

Gypsum Industries, PO Box 952, Canning Bridge, 6153 (08) 9364 4951, Lake Cowcowing. <a href="http://www.aglime.com.au">www.aglime.com.au</a>	BHP Billiton Iron Ore Ltd, 225 St Georges Terrace, Perth WA 6000, (08) 9320 4444, Jimbiebar, Newman, Yandicoogina, <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>	Limestone Resources Australia Pty Ltd, Unit 1, 7 Guthrie Street, Osborne Park WA, 6017, (08) 9445 3433, Wanneroo, Moore River, Carabooda <a href="http://www.limestone-resources.com.au">www.limestone-resources.com.au</a>
Lake Hillman Mining Pty Ltd, PO Box 1, Kalannie WA 6468, (08) 9666 2045, Lake Hillman.	Channar Mining Pty Ltd, 152 St Georges Terrace, Perth WA 6000, (08) 9327 2327, Channar.	Loongana Lime Pty Ltd, PO Box 808, Kalgoorlie WA 6430, (08) 9021 8055, Loongana.
<b>HEAVY MINERAL SANDS</b>		
<b>GARNET SAND</b>		
GMA Garnet Pty Ltd, PO Box 188, Geraldton WA 6531, (08) 9923 3644, Port Gregory, <a href="http://www.garnetsales.com">www.garnetsales.com</a>	Hamersley Iron Pty Ltd, 152 St Georges Terrace, Perth WA 6000, (08) 9327 2327, Brockman, Marandoo, Paraburadoo, Tom Price, Yandicoogina, <a href="http://www.hamersleyiron.com">www.hamersleyiron.com</a>	WA Limestone Co., 41 Spearwood Avenue, Bibra Lake WA 6163, (08) 9434 2299, Postans.
<b>ILMENITE, LEUCOXENE, RUTILE AND ZIRCON</b>		
Cable Sands (WA) Pty Ltd, PO Box 133, Bunbury WA 6231, (08) 9721 0200, Jangardup, Sandalwood, Ludlow, Tu- tunup, <a href="http://www.cablesands.com.au">www.cablesands.com.au</a>	Midwest Corporation Limited, Suite 2, 32 Kings Park Road, West Perth WA 6005, (08) 9226 2033, Koolanooka, <a href="http://www.midwest.com.au">www.midwest.com.au</a>	Gypsum Industries of Australia, PO Box 952, Canning Bridge WA 6153, (08) 9364 4951, Dongara-Denison, Cervantes, Lancelin, Jurien.
<b>Doral Mineral Sands</b>		
Lot 7 Harris Road PICTON WA 6229 (08) 9725 4899 <a href="http://www.doral.com.au">www.doral.com.au</a>	Mt Gibson Iron Limited, 1st Floor, 7 Havelock Street, West Perth WA 6005, (08) 9426 7500, Tallering Peak <a href="http://www.mtgibsoniron.com.au">www.mtgibsoniron.com.au</a>	Pilbara Manganese Pty Ltd, 28 Ventnor Avenue, West Perth WA 6005, (08) 9321 3633, Woodie Woodie, <a href="http://www.consminerals.com.au">www.consminerals.com.au</a>
<b>Iluka Resources Ltd,</b>		
Level 23, 140 St Georges Terrace, Perth WA 6000, (08) 9360 4700 Capel, Eneabba, Yoganup, <a href="http://www.iluka.com">www.iluka.com</a>	Murchison Metals Ltd, Level 2, 18 Richardson Street, West Perth WA 6005, (08) 9483 0500, Jack Hills, <a href="http://www.mml.net.au">www.mml.net.au</a>	NICKEL
<b>TiWest Pty Ltd,</b>		
1 Brodie-Hall Drive, Bentley WA 6102, (08) 9365 1333, Cooljarloo, <a href="http://www.tiwest.com.au">www.tiwest.com.au</a>	Portman Iron Ore Ltd, Level 11, 1 William Street, Perth WA 6000, (08) 9426 3333, Cockatoo Island, Koolyanobbing, <a href="http://www.portman.com.au">www.portman.com.au</a>	Australian Mines Limited, Level 1, 681 Murray Street, West Perth WA 6005, (08) 9481 5811, Blair, <a href="http://www.australianmines.com.au">www.australianmines.com.au</a>
<b>IRON ORE</b>		
BHP Billiton Iron Ore (Goldsworthy) Ltd, 225 St Georges Terrace, Perth WA 6000, (08) 9320 4444, Mining Area C, Nimgarra-Yarrie, <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>	Robe River Iron Associates Level 27 Central Park 152-158 St Georges Terrace Perth WA 6000, (08) 9327 2800, Pannawonica, West Angelas, <a href="http://www.roberiver.com.au">www.roberiver.com.au</a>	BHP Billiton (Nickel West), 191 Great Eastern Highway, Belmont WA 6104, (08) 9479 0500, Kambalda, Leinster, Mt Keith, <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>
<b>LIMESAND-LIMESTONE</b>		
<b>Cockburn Cement Ltd,</b>		
Lot 242, Russell Road East, East Munster WA 6163, (08) 9411 1000, Cockburn, Dongara, Wanneroo <a href="http://www.cockburncement.com.au">www.cockburncement.com.au</a>		
<b>Fox Resources Ltd,</b>		
Suite 1 and 2, 614 Newcastle Street, Leederville WA 6007, (08) 9318 5600 Radio Hill <a href="http://www.foxresources.com.au">www.foxresources.com.au</a>		

**Table 7 Principal Mineral and Petroleum Producers Effective 1 April 2007**

<b>Glenmurrin Pty Ltd</b> 30 The Esplanade, Perth WA 6000, (08) 9226 1099, Murrin Murrin, <a href="http://www.glencore.com">www.glencore.com</a>	<b>View Resources Ltd</b> , Level 12, London House, 216 St Georges Terrace, Perth WA 6000, (08) 9226 4611, Carnilya Hill, <a href="http://www.viewresources.com.au">www.viewresources.com.au</a>	<b>ENI Australia Limited</b> , Level 3, 40 Kings Park Road, West Perth WA 6005, (08) 9320 1111, Woollybutt.
<b>Minara Resources Ltd</b> , Level 4, 30 The Esplanade, Perth WA 6000, (08) 9212 8400, Murrin Murrin, <a href="http://www.minara.com.au">www.minara.com.au</a>	<b>Western Areas NL</b> , Level 1, 11 Ventnor Avenue, West Perth WA 6005, (08) 9486 7855, Flying Fox, <a href="http://www.westernareas.com.au">www.westernareas.com.au</a>	<b>Kimberley Oil NL</b> , Suite 12B, 573 Canning Highway, Alfred Cove WA 6154, (08) 9330 8876, Blina, <a href="http://www.kimberleyoil.com.au">www.kimberleyoil.com.au</a>
<b>Independence Group NL</b> , PO Box 893, South Perth WA 6951, (08) 9367 2755, Long Nickel, <a href="http://www.independencegroup.com.au">www.independencegroup.com.au</a>		<b>Origin Energy Resources Ltd</b> , 34 Collins Street, West Perth WA 6005, (09) 9324 6111, Beharra Springs, Jingemia, Tarantula <a href="http://www.originenergy.com.au">www.originenergy.com.au</a>
<b>LionOre (Australia) Pty Ltd</b> , Level 3, 88 Colin Street, West Perth WA 6005, (08) 9426 0100 Black Swan, Emily Ann, Waterloo, <a href="http://www.lionore.com">www.lionore.com</a>	<b>PALLADIUM</b>	<b>Santos Limited</b> , Level 29 Santos House, 91 King William Street, Adelaide SA 5000, (08) 8218 5111, Mutineer-Exeter, <a href="http://www.santos.com.au">www.santos.com.au</a>
<b>Mincor Resources NL</b> , Level 1, 1 Havelock Street, West Perth, 6005, (08) 9321 7125, MiiTel, Wannaway, Redross, <a href="http://www.mincor.com.au">www.mincor.com.au</a>	<b>BHP Billiton (Nickel West)</b> , 191 Great Eastern Highway, Belmont WA 6104, (08) 9479 0500, Kambalda, <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>	<b>Vermillion Energy</b> , Level 7, BNZ House, 30 The Esplanade, Perth WA 6000 (08) 480 0300, Wando, <a href="http://www.vermillionenergy.com.au">www.vermillionenergy.com.au</a>
<b>OMG Cawse Pty Ltd</b> , Cawse Nickel Operations, Locked Bag 32, Kalgoorlie WA 6433, (08) 9024 8800, Cawse, <a href="http://www.omg.com">www.omg.com</a>	<b>PETROLEUM</b>	<b>Woodside Energy Ltd</b> , 240 St Georges Terrace, Perth WA 6000, (08) 9348 4000, Athena, Cossack, Echo-Yodel, Goodwyn, Hermes, Lambert, Laminaria, Legendre, North Rankin, Perseus, Wanaea, <a href="http://www.woodside.com.au">www.woodside.com.au</a>
<b>Sally Malay Mining Ltd</b> , Level 22, Allendale Square, 77 St Georges Terrace, Perth WA 6000, (08) 9225 0999, Sally Malay, Lanfranchi Tramways <a href="http://www.sallymalay.com">www.sallymalay.com</a>	<b>Apache Energy Ltd</b> , Level 3, 256 St Georges Terrace, Perth WA 6000, (08) 9422 7222, Agincourt, Albert, Artreus, Bambra, Campbell, Double Island, Endymion, Gipsy, Gudrun, Harriet, Hoover, Linda, Little Sandy, Mohave, Monet, North Alkimos, North Pedirka, Pedirka, Rose, Simpson, Sinbad, South Plato, Stag, Tanami, Victoria, Wonnich, <a href="http://www.apachecorp.com">www.apachecorp.com</a>	<b>PLATINUM</b>
<b>Sir Samuel Mines NL</b> , 3rd Floor, 24 Outram Street, West Perth WA 6005, (08) 9213 1588, Cosmos, <a href="http://www.jubileemines.com.au">www.jubileemines.com.au</a>	<b>ARC Energy Ltd</b> , Level 4, 679 Murray Street, West Perth WA 6005, (08) 9486 7333, Dongara, Evandra, Hovea-Eremia, Xyris <a href="http://www.arcenergy.com.au">www.arcenergy.com.au</a>	<b>BHP Billiton (Nickel West)</b> , 191 Great Eastern Highway, Belmont WA 6104, (08) 9479 0500, Kambalda. <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>
<b>Tectonic Resources NL</b> , Suite 4, 100 Hay Street, Subiaco WA 6008, (08) 9388 3872, RAV8, <a href="http://www.tectonicres.com.au">www.tectonicres.com.au</a>	<b>BHP Billiton Petroleum (North West Shelf) Pty Ltd</b> , Level 42, Central Park, 152-158 St Georges Terrace, Perth WA 6000, (08) 9278 4888, Chinook-Scindian, Griffin, <a href="http://www.bhpbilliton.com">www.bhpbilliton.com</a>	<b>SALT</b>
	<b>ChevronTexaco Australia Pty Ltd</b> , Level 24, QV1 Building, 250 St Georges Terrace, Perth WA 6000, (08) 9216 4000, Barrow Island, Cowle, Crest, Roller-Skate, Saladin, Yammaderry, <a href="http://www.chevron.com">www.chevron.com</a>	<b>Dampier Salt Pty Ltd</b> , 37 Belmont Avenue Belmont WA 6104 (08) 9270 9270, Dampier, Lake MacLeod, Port Hedland, <a href="http://www.dampiersalt.com.au">www.dampiersalt.com.au</a>

## TABLE 7 cont.

**Table 7 Principal Mineral and Petroleum Producers Effective 1 April 2007**

<p>Onslow Salt Pty Ltd, PO Box 23, Onslow WA 6710, (08) 9184 9000, Onslow Salt, <a href="http://www.onslowsalt.com">www.onslowsalt.com</a></p>	<p><b>SPONGOLITE</b></p>	<p><b>TIN-TANTALUM-LITHIUM</b></p>
<p>Shark Bay Salt Joint Venture, Level 16, 2 The Esplanade, Perth WA 6000, (08) 9265 8000, Useless Loop.</p>	<p><b>Australian Diatomaceous Earth Pty Ltd,</b> GPO Box 4188, Sydney NSW 2001 Woogenellup, <a href="http://www.supersorb.com.au">www.supersorb.com.au</a></p>	<p><b>SPODUMENE</b></p>
<p>WA Salt Supply Ltd, Cockburn Road, Hamilton Hill WA 6163, (08) 9430 5495, Lake Deborah East, Pink Lake, <a href="http://www.wasalt.com.au">www.wasalt.com.au</a></p>	<p><b>TALC</b></p>	<p><b>TANTALITE-TIN</b></p> <p><b>Sons of Gwalia Ltd,</b> Level 3, 30 The Esplanade, Perth WA 6000, (08) 9263 5555, Greenbushes, Wodgina, <a href="http://www.sog.com.au">www.sog.com.au</a></p>
<p><b>SILICA-SILICA SAND</b></p>	<p><b>Luzenac Australia Pty Ltd,</b> Level 22, 152-158 St Georges Terrace (08) 9327 2277, Three Springs, <a href="http://www.luzenac.com">www.luzenac.com</a></p>	<p><b>Unimin Australia Ltd,</b> 26 Tomlinson Road, Welshpool WA 6106, (08) 9362 1655, Mt Seabrook, <a href="http://www.unimin.com.au">www.unimin.com.au</a></p>
<p><b>SILICA</b></p> <p><b>Simcoa Operations Pty Ltd,</b> PO Box 1389, Bunbury WA 6231, (08) 9780 6666, Dalaroo, <a href="http://www.simcoa.com.au">www.simcoa.com.au</a></p> <p><b>SILICA SAND</b></p> <p><b>Rocla Quarry Products,</b> 180 Fauntleroy Avenue, Kewdale WA 6105, (08) 9475 2555 Gnangarra, <a href="http://www.rocla.com.au">www.rocla.com.au</a></p>	<p><b>Austsand Pty Ltd,</b> PO Box 1373, Albany WA 6330, (08) 9846 1288, Mindijup.</p>	

**Abbreviations**

A\$	Australian Dollar	km	kilometres
ABARE	Australian Bureau of Agricultural and Resource Economics	km <sup>2</sup>	square kilometres
ABS	Australian Bureau of Statistics	LME	London Metal Exchange
AFR	Australian Financial Review	Mbbl	thousand barrels of oil
ANZ	Australia and New Zealand bank	MMbbl	million barrels of oil
bbl	barrels of oil	Mct	million carats
Bcm	billion cubic metres	Moz	million ounces
BMR	Bureau of Mineral Resources	Mt	million tonnes
cons	concentrates	Mt/a	million tonnes per annum
CSO	Central Selling Organisation	n/a	not applicable
ct	carat	oz	ounce
DRI	Direct Reduced Iron	RBA	Reserve Bank of Australia
ECB	European Central Bank	SARS	Severe Acute Respiratory Syndrome
f.o.b.	free-on-board	t	tonnes
f.o.t.	free-on-truck	t/a	tonnes per annum
GDP	Gross Domestic Product	Tcf	trillion cubic feet
HBI	Hot Briquetted Iron	US\$	United States Dollar
IMF	International Monetary Fund	WTI	West Texas Intermediate

**Units and Conversion Factors**

	Metric Unit	Symbol	Imperial Unit
Mass	1 gram	g	= 0.032151 troy (fine) ounce [oz]
	1 kilogram	kg	= 2.204624 pounds [lb]
	1 tonne	t	= 1.10231 United States short ton [1 US short ton = 2,000 lb]
	1 tonne	t	= 0.98421 United Kingdom long ton [1 UK long ton = 2,240 lb]
	1 tonne LNG	t	= 52,000,000 British Thermal Units (Btu)
Volume	1 kilolitre	kl	= 6.28981 barrels [bbl]
	1 cubic metre	m <sup>3</sup>	= 35.3147 cubic feet (ft <sup>3</sup> ) [1 kilolitre (kl) = 1 cubic metre (m <sup>3</sup> )]
Energy	1 kilojoule	kJ	= 0.94781 British Thermal Units (Btu)
	Energy Content		Prefix
Coal	19.7 GJ/t		kilo (k) 10 <sup>3</sup>
Condensate	32.0 MJ/L		mega (M) 10 <sup>6</sup>
Crude oil	37.0 MJ/L		giga (G) 10 <sup>9</sup>
LNG	25.0 MJ/L		tera (T) 10 <sup>12</sup>
Natural gas	38.2 MJ/m <sup>3</sup>		peta (P) 10 <sup>15</sup>
LPG-butane	28.7 MJ/L (1tonne LPG-butane = 1,720 litres)		
LPG-propane	25.4 MJ/L (1tonne LPG-propane = 1,960 litres)		

# DATA SOURCES AND CLASSIFICATION OF COUNTRIES

## Data Sources

Quantities and values for minerals and petroleum in this publication are collected from a variety of sources including:

The Department's royalty returns, various company annual reports and quarterly Australian Stock Exchange reports, State port authority statistics, the ABS and ABARE.

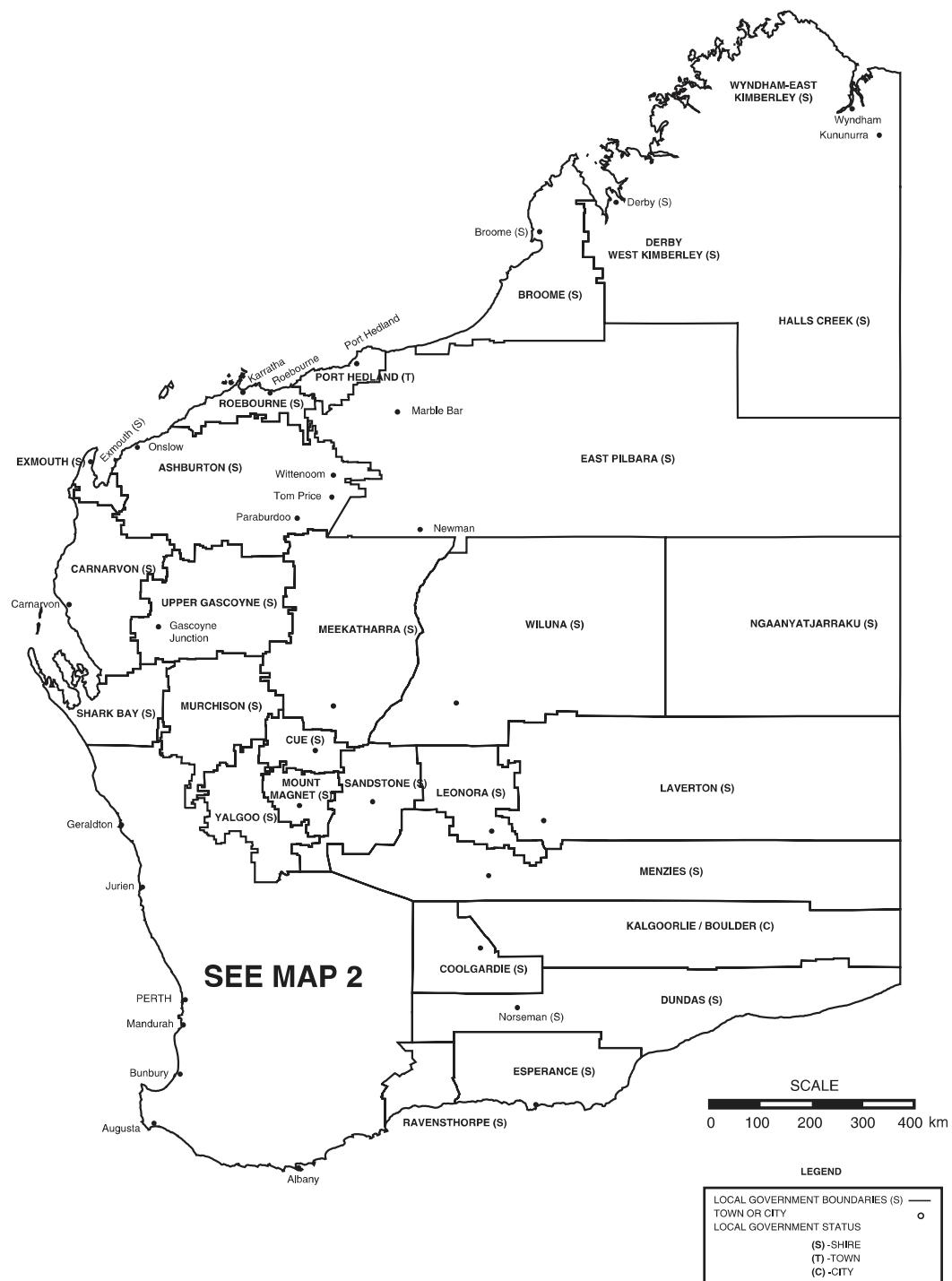
Quantities specified relate to either mine production or sales as listed below for each commodity.

Mine Production
Base Metals (Lead and Zinc)
Chromite
Clays
Coal
Construction Materials
Dimension Stone
Gold
Gypsum
Limesand-Limestone-Dolomite
Manganese
Silica-Silica Sand
Talc
Sales
Alumina
Base Metals (Copper)
Diamonds
Gem and Semi-Precious Stones
Heavy Mineral Sands
Industrial Pegmatite Minerals
Iron Ore
Nickel Industry (Nickel, Cobalt, Platinum and Palladium)
Petroleum
Pigments
Salt
Silver
Spongolite
Tin-Tantalum-Lithium
Vanadium

## Classification of Countries

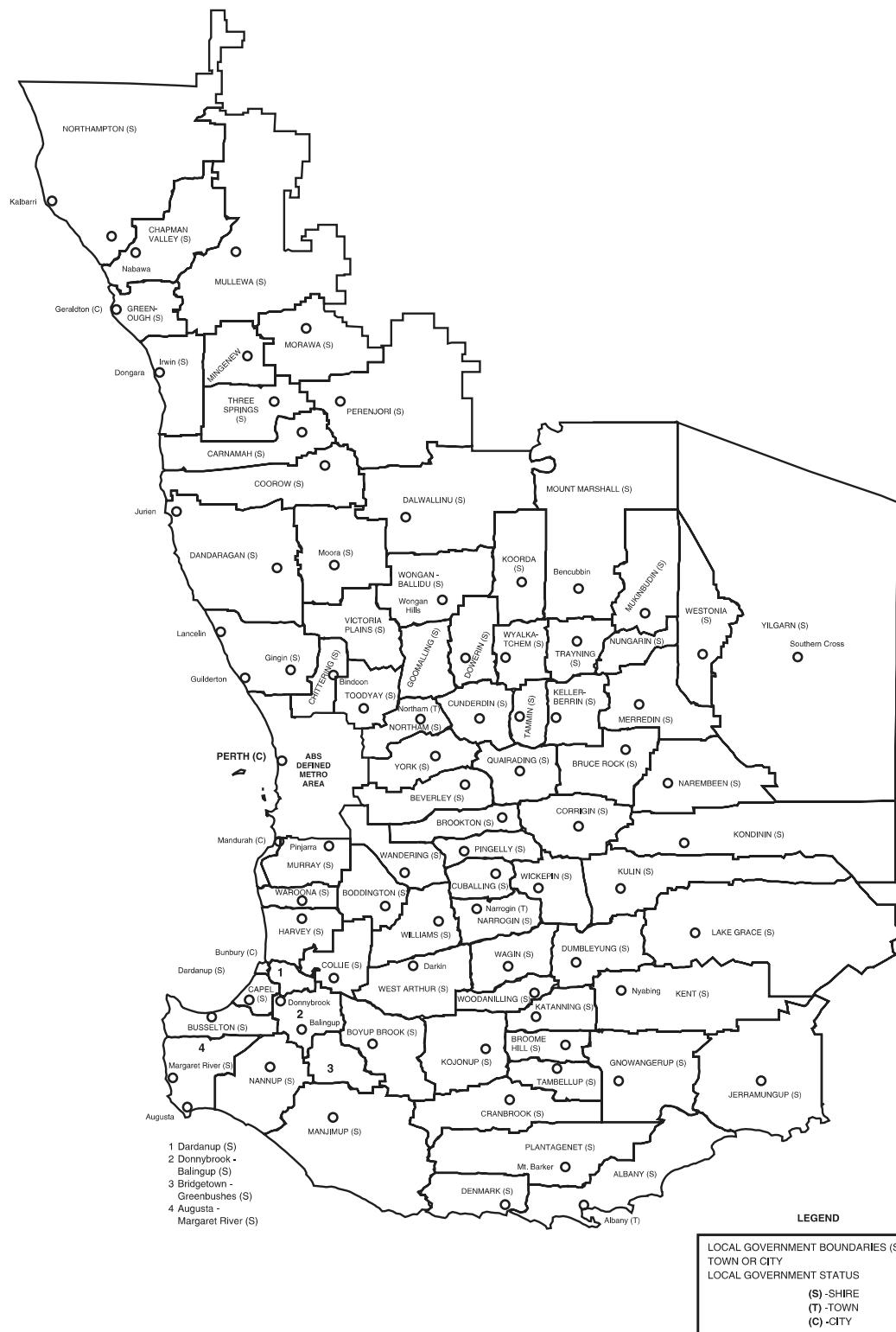
Euro area <sup>1</sup> / European Union	
Austria	<i>Italy</i>
Belgium	Latvia
Cyprus	Lithuania
Czech Republic	<i>Luxembourg</i>
Denmark	Malta
Estonia	<i>Netherlands</i>
Finland	Poland
France	<i>Portugal</i>
Germany	Slovakia
Greece	Slovenia
Hungary	<i>Spain</i>
Ireland	Sweden
	United Kingdom
Non-Japan Asia	
Afghanistan	Myanmar
Bangladesh	Nepal
Bhutan	Newly industrialised Asia
Brunei Darussalam	Pakistan
Cambodia	Papua New Guinea
China	Philippines
Fiji	Samoa
India	Solomon Islands
Indonesia	Sri Lanka
Kiribati	Thailand
Lao PD Republic	Tonga
Malaysia	Vanuatu
Maldives	Vietnam
Mongolia	
Newly Industrialised Asia	
Hong Kong	Singapore
Republic of Korea	Taiwan

<sup>1</sup>Italics indicate countries that are members of the euro area.



Map 1 Local Government Boundaries

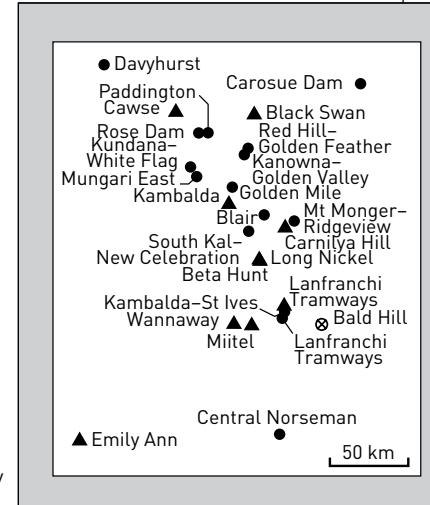
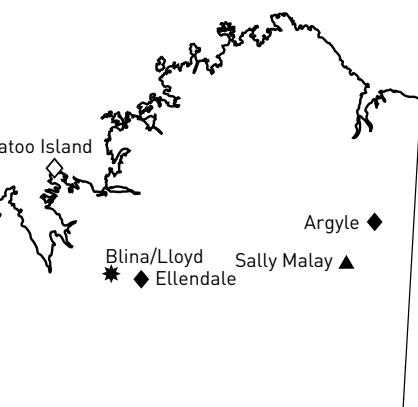
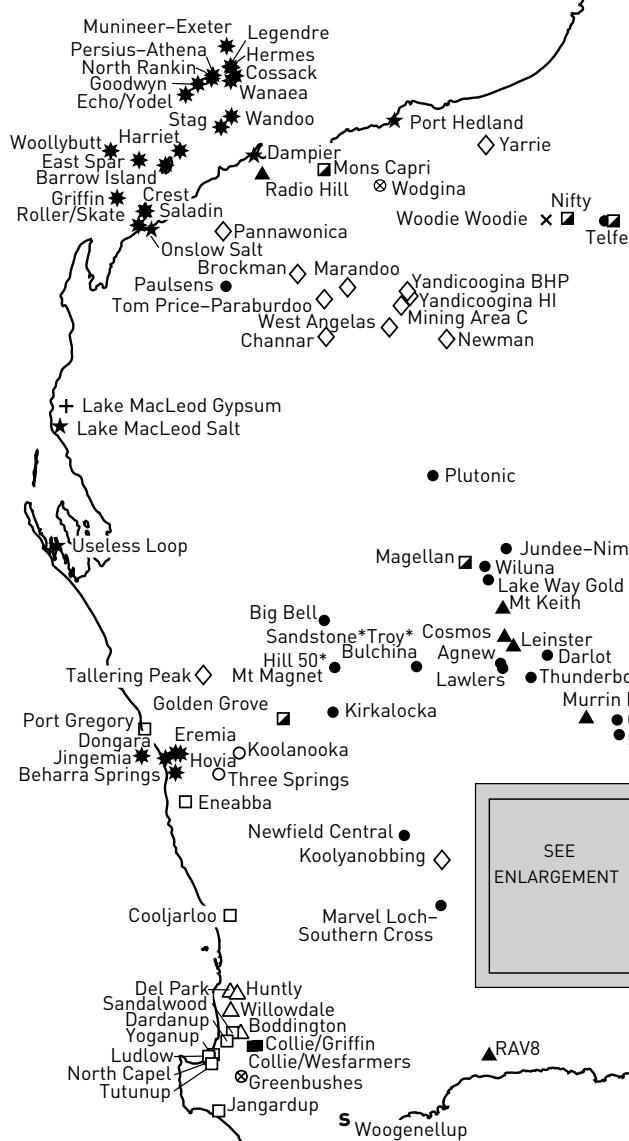
## MAP 2



Map 2 Local Government Boundaries

- |                       |   |                      |
|-----------------------|---|----------------------|
| ■ Base metals         | × | Manganese            |
| △ Bauxite-Alumina     | ▲ | Nickel               |
| ■ Coal                | ★ | Petroleum            |
| ◆ Diamonds            | ★ | Salt                 |
| ● Gold                | ⦿ | Spongolite           |
| □ Heavy Mineral Sands | ○ | Talc                 |
| + Gypsum              | ⊗ | Tin-Tantalum-Lithium |
| ◊ Iron Ore            |   |                      |

200 km



Map 3 Major Mineral and Petroleum Projects in Western Australia

This publication is available on our website  
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