

2005 Minerals Yearbook

AUSTRALIA

THE MINERAL INDUSTRY OF AUSTRALIA

By Staff

The Commonwealth of Australia is a country that is part of Oceania, which is located between the Indian Ocean and the South Pacific Ocean. The country's land mass is 7,617,930 square kilometers (km²) and encompasses the continent of Australia and adjacent islands, including King Island and Tasmania, Lord Howe Island, and Macquarie Island. Owing to its large mineral resources, Australia was one of the world's leading mineral producing countries. The country ranked among the top 10 countries worldwide in the production of bauxite, coal, cobalt, copper, gem and near-gem diamond, gold, iron ore, lithium, manganese ore, niobium, rare earths, and uranium.

Commodity Review

Metals

Aluminum.—Australia was the leading bauxite and alumina producing country in the world. Bauxite came from the Gove Mine in Northern Territory, the Weipa Mine in northern Queensland, and the Huntly, the Willowdale, and the Worsley mines in Western Australia. The construction of Comalco Ltd.'s (a subsidiary of the Rio Tinto Group) 1.4-million-metric-tonper-year (Mt/yr) mine in Queensland was completed in early 2005. Capacity expansions of Alcoa World Alumina Australia's Pinjarra alumina refinery in Western Australia and Worsley Alumina Pty. Ltd.'s Worsley alumina refinery in Western Australia were scheduled to be completed in early 2006. Australia's alumina output capacity was projected to increase to 20.5 Mt/yr in 2006. Australia's alumina producers planned to further expand their output capacities at the Gove, the Wagerup, and the Worsley refineries in the next 3 years. Aluminum expansion projects included Hydro Aluminum Australia Pty Ltd.'s Kurri Kurri Surf aluminum smelter in New South Wales and Boyne Island Smelter at Gladstone in Queensland. The total additional aluminum output capacity would be 18,000 metric tons per year (t/yr) in 2006. With limited growth in Australia's aluminum production capacity projected for the next several years, exports of alumina from Australia could increase by up to 19 million metric tons (Mt) in 2010 (Australian Bureau of Agricultural and Resource Economics, 2006b, p. 7).

Copper.—Australia was one of the major copper producing countries in the world. In 2005, Australia produced more than 900,000 metric tons (t) of copper in concentrates, and production was expected to increase to more than 1 Mt in 2007 and later years because of increasing production from Tritton Resources Ltd.'s copper mine and Newcrest Mining Ltd.'s copper and gold mine. Several copper mine projects—Browns Oxide Mine in the Northern Territory, Enterprise Mine in Queensland, Jaguar Mine in Western Australia, Lady Annie Mine in Queensland, and Thalanga Mine in Queensland—were expected to start up in 2007. BHP Billiton plc was considering an expansion of the Olympic Dam Mine to 500,000 t/yr, and Oxiana Co.'s Prominent Hill copper and gold project in

South Australia was under bankable feasibility study. In 2005, Australia exported 1.3 Mt of copper concentrates. Owing to the country's increased output, exports of copper concentrates were expected to increase during the next several years. Australia's refined copper output was about 450,000 t/yr, and output capacity was expected to increase to about 500,000 t/yr in 2007 because of the 20,000-t/yr expansion project underway at the Townsville copper refinery and the 15,000-t/yr greenfield Lady Annie project underway at Queensland. Australia exported more than 300,000 t/yr of refined copper (Australian Bureau of Agricultural and Resource Economics, 2006a, p. 155).

Gold.—Australia's gold mine output ranked second in the world after the Republic of South Africa. The country's gold resources occur and are mined in all States and in the Northern Territory, and much of the gold was produced from large open pit mines. The new Ballarat East mine in Victoria and Twin Hills mine in Queensland were put into operation in 2005. A number of gold mines, including the Bendigo mine in Victoria, the Fortnum mine in Western Australia, the Gully mine and the Union Reef mine in Northern Territory, and the Warrior mine in Queensland, were scheduled to be put into operation during the next 2 years. Owing to the expansion of mine output capacity, higher gold prices in the international market, and an increase in demand for gold jewelry in China, India, and the Middle East, production and export of gold from Australia were expected to increase in the future (Australian Bureau of Agricultural and Resource Economics, 2006c).

Iron and Steel.—In 2005, Australia's iron ore output ranked second in the world after Brazil. Owing to limited iron and steel output capacity, Australia exported about 90% of its iron ore output to such Asian countries as China, Japan, the Republic of Korea, and Taiwan. Since 2003, negotiated benchmark iron ore prices have more than doubled. High prices and increased demand for iron ore in Asian countries, especially China, stimulated substantial investment in new iron ore projects in Australia and other iron-ore-rich countries. Many of these projects were anticipated to come onstream in 2006 and later years.

Rio Tinto plc planned to expand the Yandicoogina Mine output capacity to 52 Mt/yr by adding16 Mt/yr of capacity. Mine expansion was scheduled to be completed in late 2007. BHP Billiton expanded its Brackman resource Orebody 18 and its Area C in the Pilbara region of Western Australia. BHP Billiton also planned to increase production capacity at its Newman Mine site to 63 Mt/yr in 2010 from 45 Mt/yr in 2006. By 2010, BHP Billiton will have a total iron ore output capacity of 152 Mt/yr in the Pilbara region. The Western Australian Government approved Rio Tinto and Hancock Prospecting Pty Ltd.'s joint-venture project, Hope Downs, which will have an output capacity of 22 Mt/yr in 2008. The Hope Downs deposit had iron ore reserves of 346 Mt at a grade of 61.6% iron (Rio Tinto plc, 2006). Several small development projects, such as the Jack Hills Mine, the Koolan Island Mine, and the Middleback Range

Mine were expected to come onstream in 2007. Australia's iron ore production was expected to increase to 320 Mt in 2007.

Lead, Silver, and Zinc.—Australia's lead, silver, and zinc mines were predominantly based on zinc-rich ore bodies with zinc as the major component and lead and silver as byproducts. An exception was BHP Billiton's Cannington underground mine in Queensland where lead and silver were major components and zinc was a minor component.

Owing to low zinc metal prices during the early 21st century, several zinc mines were closed worldwide. Teck Cominco Corp. of Canada's Lennard Shelf mine was closed in 2003. During the same period, the expansion of zinc smelting capacity, especially in China, was faster than the increase in mine output capacity. The supply and demand gap in zinc concentrates was met by drawing from stockpiles. As a result of an increase in demand for zinc from China, prices of zinc on the international market increased substantially in 2005. Teck Cominco planned to reopen its Lennard Shelf mine in 2007. The Black Star zinc mine in Queensland was expected to begin operation in 2006. Several small zinc projects, including the Angas Zinc, the Browns Silver, the Hellyer Metals, and the Jaguar projects were in the planning stages. By 2011, Australia's zinc concentrates output could increase to 1.9 Mt/yr (Australian Bureau of Agricultural and Resource Economics, 2006a, p. 135).

Manganese.—Australia was one of the major manganese ore producing countries in the world. The Bootu Creek, the Groote Eylandt, and the Woodie Woodie Mines were the three operating manganese mines in the country. The Bootu Creek Mine, which is located 110 kilometers (km) north of Tennant Creek in the Northern Territory, was commissioned in late 2005. The mine was designed to produce 600,000 t/yr of lump and fine products that would be transported 900 km by rail to Darwin's East Arm Port for export. A \$6.5 million expansion of Woodie Woodie Mine was also completed in 2005, and the output capacity of the mine increased to 1 Mt/yr. As a result of the new greenfield and brownfield expansion projects, Australia's manganese ore output increased in 2005 and was expected to continue to increase during the next several years (Geoscience Australia, 2006, p. 55).

Nickel.—Australia's main nickel ores were primary sulfides of nickel, which occur as lodes with mafic and ultramafic (ironand magnesium-rich) igneous rocks. Western Australia had the largest nickel resources in Australia. Active operating nickel sulfide mines included BHP Billiton's Leinster and Mount Keith Mines; LionOre Mining International Ltd.'s Black Swan and Emily Ann Mines; Jubilee Mines NL's Cosmos Mine; Mincor Resources NL's Mitel and Wannaway Mines; International Gold NL's Long-Victor Mine; and Consolidated Mineral Ltd.'s Beta Hunt Mine.

Several new and expansion nickel mine projects were underway; they included BHP Billiton's Mt Keith project; Gladstone Pacific Ltd.'s Gladstone project; Jubilee Mines's Prospero project; LionOre's Black Swan, Honeymoon Well, and Maggie projects; and Western Areas NL's Flying Fox project. Refinery expansion at BHP Billiton's Yabulu plant was expected to be completed in 2007. After completion of all these projects, Australia's nickel mine output could reach 378,000 t; the production of nickel metal was expected to increase to

180,000 t in 2010 (Australian Bureau of Agricultural and Resource Economics, 2006a, p. 159).

Titanium.—Mineral sands deposits are concentrations of ilmenite, rutile, and zircon; they occur along the coast of eastern Australia from central New South Wales to Cape York in Queensland. Large relic beach deposits are found as far inland as Ouyen in Victoria in southwestern New South Wales, and in South Australia in more than 300,000 km² of the Murray Basin. In Western Australia, deposits are distributed from the southern tip of the State to Geraldton and are located at the coastline or as relic deposits of up to 35 km in length. The eastern deposits generally have a total heavy-mineral content of from 1% to 5% of approximately even amounts of ilmenite, rutile, and zircon. In Western Australia, the deposits also have a total heavy-mineral content of about the same or slightly higher percentage, but the ilmenite portion of this content approaches about 70%. Most of Australia's rutile and zircon output is exported. Ilmenite is upgraded to synthetic rutile that contains between about 92% and 94% TiO₂, and more than one-half of the production is

BeMax Resources NL's Pooncarie project, which includes the Ginkgo and the Snapper deposits, is located in the northern part of the Murray Basin in New South Wales. The Ginkgo Mine was put into operation in late 2005. The Iluka Resources Ltd.'s Douglas project in Victoria was scheduled to begin operations in 2006 and to reach full production in 2007 with a combined production capacity of about 180,000 t/yr of rutile and zircon. Iluka Resources also planned to develop the northern Murray Basin deposits. Olympia Resources NL planned to develop the Keysbrook heavy-mineral sand resource, which is located south of Perth, in 2007 (Australian Bureau of Agricultural and Resource Economics, 2006a, p. 22).

Industrial Minerals

Diamond.—Australia was one of the leading diamond producing countries in the world. Diamond production was mainly from the Argyle Mine in Western Australia. In 2005, Rio Tinto invested \$760 million to develop an underground block-caving operation; bringing the underground mine into full operation is expected to take 3 years. After full operation in 2008, output from the underground operation will account for 60% of Argyle's total output. The open pit operation will be shut down gradually (Geoscience Australia, 2006, p. 35).

Mineral Fuels

Coal.—Australia ranked behind China and India in the Asia and the Pacific region in coal output; the country, however, was the world's leading exporter of coal. In 2005, Australia exported more than 230 Mt of coal to such countries and areas as Japan, India, the Republic of Korea, and Taiwan (Australian Bureau of Agricultural and Resource Economics, 2006d, p. 19).

With limited transport and handling infrastructure in New South Wales and Queensland, coal exports were restricted from these regions. During the past several years, significant investment has been proposed to expand the transport and handling infrastructure. Australia's coal export capacity is

expected to increase in the next 2 years. Several coal expansion projects are planned, including that of the Ashton, the Boggabri, the Tarawonga, and the Wambo mines in New South Wales in 2007. The upgrade of the Port of Newcastle was scheduled to be completed in 2007; this upgrade would increase the Port's total handling capacity to 102 Mt/yr. Construction of the Rolleston coal mine in Queensland was completed in 2005 and the mine was expected to produce 6 Mt in 2006 and to reach 12 Mt after the Phase 2 construction was completed later in the year. The expansion of the Dawson, the Ensham, the Grasstree, and the Hail Creek mines in Queensland were schedule to be completed in 2007. Port handling capacity in the Ports of Abbot Point, Dairymple Bay, Gladstone, and Hay Point would increase to a total of 198 Mt in 2008. Coal exports from Australia would increase to about 300 Mt in 2010 (Department of Industry Tourism and Resources, 2006, p. 18).

Natural Gas and Petroleum.—Western Australia and Victoria accounted for most of Australia's total oil and condensate and liquefied natural gas (LNG) production. The Carnarvon Basin in Western Australia accounted for 63% of the country's total production. Production from the Carnarvon Basin was mostly exported, and production from the Gippsland Basin in southeastern Australia was predominantly used to feed local refineries. During the past 5 years, Australia was a net importer of oil and its refinery products. With the startup of production at the Enfield project in the Carnarvon Basin and the Puffin project in the Banaparte Basin, Australia's oil and condensate production was expected to increase during the next several years. More than one-half of Australia's oil and condensate was exported to Asian countries, including Japan, the Republic of Korea, and Singapore. New Zealand and Singapore were Australia's leading markets for refinery products. Since the mid-1990s, Australian imports of oil from the Middle East have gradually decreased and have been replaced with oil imports from southeast Asian countries, such as Indonesia and Vietnam. Much of Australia's oilfields have matured; significant undiscovered oil and gas resources exist in the offshore regions, however, such as at the Gippsland Basin in Victoria, the Bonaparte Basin in the Northern Territory, and the Browse and the Carnarvon Basins in Western Australia (Department of Industry Tourism and Resources, 2006, p. 23).

With the expected increase in production from the Darwin and the Casino fields, Australia's natural gas output was expected to increase for the next several years. A number of new LNG agreements were signed between Australian oil and gas producers and Japanese energy companies. With such countries as China, Japan, and the Republic of Korea looking to secure sources of cleaner fuel for power generation, demand for Australia LNG exports was expected to increase and, in response, production of LNG was expected to increase during the next several years. Several natural gas and LNG projects, such as Camden Gas in New South Wales; Bass Gas, Kipper Gas, and Otway Gas in Victoria; and Angel Gas, Blacktip Gas, and Gorgon Gas in Western Australia, were expected to start up within the next 4 years (Department of Industry Tourism and Resources, 2006, p. 39).

Uranium.—Australia was the second leading uranium producer in the world following Canada. Australia's uranium

production was mainly from three mines—the Beverley, the Olympic Dam, and the Ranger mines. A number of undeveloped deposits in the Northern Territory, Queensland, South Australia, and Western Australia also exist. The Australian Government permits uranium mining provided all the relevant environmental safeguards and health requirements are met. Regulation of Australia's uranium mines is mainly a State and Territorial government responsibility. Uranium mining is permitted only in the Northern Territory and South Australia. Recently, the policies of governments in the States of Queensland, South Australia, and Western Australia and the legislation in New South Wales and Victoria prevent the development of uranium mines in those jurisdictions. In South Australia, under the recent government's "no new mine" policy, projects that had previously received approval for development could proceed; existing mines could also continue to operate. The Honeymoon project, therefore, which was approved in 2001, was allowed to proceed. All Australia's uranium production was exported under long-term contracts to electricity utilities in Belgium, Finland, France, Germany, Japan, the Republic of Korea, Spain, Sweden, the United Kingdom, and the United States. The Governments of Australia and China signed a Nuclear Transfer Agreement and a Nuclear Cooperation Agreement. These agreements established strict safeguards to regulate the conditions under which uranium is exported from Australia to China (Australian Bureau of Agricultural and Resource Economics, 2006d, p. 53).

In 2005, the Ranger mine was the leading producing uranium mine in Australia and was expected to cease operation in 2020. BHP Billiton planned to expand Olympic Dam's uranium output to 15,000 t/yr from 4,400 t/yr in 2005; copper production from Olympic Dam would also increase to 500,000 t/yr. The expansion project faced infrastructure obstacles with increasing energy, transportation, and water requirements. The Federal and State governments imposed a limit on the volume of groundwater that could be extracted from the Great Artesian Basin aquifers for use in the Olympic Dam operation and the nearby township of Roxby Downs. The future of Australia's uranium production and exports will be affected by whether or not State government policy regarding the development of new uranium mines is changed. The timing of the proposed expansion of Olympic Dam and the commencement of the Honeymoon project in 2008 will also affect the volume of uranium output (Australian Bureau of Agricultural and Resource Economics, 2006d, p. 60).

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Major Sources of Information

Australian Bureau of Statistics (ABS)

P.O. Box 10

Belconnen, Australian Capital Territory 2616

Australia

Internet: http://www.abs.gov.au

Commonwealth Departments and Enterprises

Australian Bureau of Agricultural and Resource Economics

(ABARE) G.P.O. Box 1563

Canberra, Australian Capital Territory 2601

Australia

Internet: http://www.abareconomics.com

Commonwealth Scientific and Industrial Research Organization

(CSIRO) P.O. Box 225

Dickson, Australian Capital Territory 2602

Australia

Internet: http://www.csiro.au

Geoscience Australia (GA)

G.P.O. Box 378

Canberra, Australian Capital Territory 2601

Australia

Internet: http://www.ga.gov.au

$\label{eq:table1} \textbf{TABLE 1} \\ \textbf{AUSTRALIA: PRODUCTION OF MINERAL COMMODITIES}^1$

(Metric tons unless otherwise specified)

Commodity		2001	2002	2003	2004	2005
METALS						
Aluminum:						
Bauxite, gross weight	thousand metric tons	53,799	54,135	55,602	43,993	59,959
Alumina	do.	16,313	16,382	16,529	16,525	17,704
Metal, refined:						
Primary	do.	1,798	1,836	1,857	1,894	1,903
Secondary ^e		127,000	127,000	127,000	127,000	127,000
Antimony, Sb content of ores and concentrates		1,380	1,200 e	900 ^e	120	120 9
Cadmium:						
Mine output, Cd content ^e		1,900	1,900	1,900	1,900	1,900
Metal, smelter, refined		378	370	350	469	429
Chromium, chromite, gross weight		11,800	132,665	138,826	140,000 e	140,000
Cobalt:					-,	- 7,
Co content in laterite ore, Ni concentrate, and Zn conc	centrate	6,200	6,500	7,000	7,000 ^e	7,000
Metal, refined		3,470	3,500 ^e	3,840	3,900 ^e	3,900
Copper:		3,170	3,500	3,010	3,700	3,700
Mine output, Cu content	thousand metric tons	898 ^r	872 ^r	830	875 ^r	918
Metal:	mousand metric toris	070	012	0.50	0/3	910
Smelter, primary and secondary	do.	455 ^r	456 ^r	418 ^r	440 ^r	410
Refined, primary	do.	455 558	543	418 484	440 498 ^r	410 461
	uo.	338	343	404	498	401
Gold:		200 r	266 r	202 F	250 r	262
Mine output, Au content		280 ^r	266 ^r	283 ^r	258 ^r	263
Metal, refined:		205 [202 [224 [r	
Primary		305 ^r	302 ^r	331 ^r	313 ^r	291
Secondary		68	47 ^r	80 ^r	58 ^r	50
Iron and steel:						
Iron ore:		_		_	_	
Gross weight	thousand metric tons	181,200 ^r	187,200 ^r	213,000 °	243,000 ^r	261,900
Fe content	do.	112,592	113,548	116,355	143,980	175,300
Metal:						
Pig iron	do.	60,117 ^r	6,106 ^r	6,116 ^r	5,735 ^r	6,648
Ferroalloys: ^e						
Ferromanganese		115,000	115,000	115,000	115,000	115,000
Silicomanganese		135,000	135,000	135,000	135,000	135,000
Total		250,000	250,000	250,000	250,000	250,000
Steel, crude	thousand metric tons	8,227 ^r	8,874 ^r	9,678 ^r	8,353 ^r	7,788
Semimanufactured products		8,243 ^r	6,457 ^r	7,458 ^r	6,671 ^r	6,920
Lead:		ŕ	,	,	-,	-,
Mine output, Pb content	thousand metric tons	759 ^r	694 ^r	688	674 ^r	767
Metal:	arousana meure tons	, , ,	٠,٠	000	071	707
Bullion	do.	195	187 ^r	169	140 ^r	159
Refined:	<u>u0.</u>	195	107	109	140	139
		237	268 ^r	270 ^r	232 ^r	220
Primary Secondary excluding remelt	do.	34 ^r	268 36 ^r	270 25 ^r	36 ^r	230
	uo.	34	30	23	36	33
Manganese ore, metallurgical:		1001	2 100 [2564 1	2 121 [2.12.
Gross weight	do.	1,961 ^r	2,189 ^r	2,564 ^r	3,431 ^r	3,136
Mn content	do.	948	983	1,247	1,570 °	1,500
Nickel:		-				
Mine output, Ni content	do.	197 ^r	188 ^r	191 ^r	187 ^r	189
Matte	do.	100	98	108	107	115
Metal, smelter, refined Ni and Ni content of oxide	do.	128	132 ^r	129 ^r	122 ^r	122
Platinum-group metals: ^e						
Palladium, Pd content	kilograms	828 2	800	820	800	800
Platinum, Pt content	do.	174^{-2}	200	225	200	200
Total	do.	1,002 2	1,000	1,050	1,000	1,000
See footnotes at end of table	20.	/~~=	,	,	,~~~	-,

See footnotes at end of table.

${\bf TABLE~1--Continued} \\ {\bf AUSTRALIA: PRODUCTION~OF~MINERAL~COMMODITIES}^1 \\$

(Metric tons unless otherwise specified)

Commodity	2001	2002	2003	2004	2005
METALSContinued	_				
Silver:		2.055	1.060	r	
Mine output, Ag content	1,970	2,077	1,868	2,224 ^r	2,417
Metal, refined	584 ^r	644 ^r	649 ^r	650	727
Tin:	— 9,840 ^г	7,017 ^r	3,864 ^r	1 106 F	2.010
Mine output, Sn content	9,840	7,017	3,804	1,196 ^r	2,819
Metal, refined:		791 ^r	507	467	504
Primary Secondary ^c		400	597 400	467	594
Tantalum, tantalite, T ₂ O ₅ equalvent		985	973	400	400
Titanium concentrates, gross weight:		763	713	1,019	1,041
Ilmenite thousand metric to	ns 2,019 ^r	1,954 ^r	2,006	1,921	2,030
Leucoxene diousand metre to	30,000	39,000	57,000	44,000	46,000
Rutile		219,000 ^r	173,000	163,000 ^r	177,000
Zinc:		219,000	173,000	103,000	177,000
Mine output, Zn content thousand metric to	ns 1,517 ^r	1,469	1,479	1,334	1,367
Metal, smelter:	1,517	1,40)	1,477	1,334	1,307
	o. 556 ^r	567	553	470 ^r	457
Secondary ^e	6,000 ^r	6,000 ^r	6,000 ^r	6,000 ^r	6,000
Zirconium concentrates, gross weight thousand metric to		412	462	441 ^r	427
INDUSTRIAL MINERALS			.02		127
Abrasives, natural: ^e					
Beach pebble	2,000	2,000	2,000	2,000	2,000
Garnet	25,000	25,000	25,000	25,000	25,000
Barite ^e	20,000	20,000	20,000	20,000	20,000
Cement, hydraulic ^e thousand metric to	ns 7,500	7,550	8,000	8,000	8,000
Clays: ^e	_ ′	ŕ	,	,	,
Bentonite and bentonitic clay	180,000	200,000	200,000	200,000	200,000
Brick clay and shale thousand metric to	ns 8,000	8,000	8,000	8,000	8,000
Cement clay and shale	o. 500	500	500	500	500
Damourite clay	100	100	100	100	100
Fire clay	25,000	25,000	25,000	25,000	25,000
Fuller's earth, attapulgite	5,600	6,000	6,000	6,000	6,000
Kaolin and ball clay	220,000	230,000	240,000	240,000	240,000
Other thousand metric to	ns 1,000	1,000	2,000	2,000	2,000
Diamond:	_				
Gem thousand cara	<u>its</u> 14,397	15,136	13,981	20,602	30,703
Industrial	o. 11,779	18,500	17,087	22,709	24,000 ^e
	o. 26,176	33,636	31,068	43,311	54,703
Diatomite ^e	20,000	20,000	20,000	20,000	20,000
Feldspar, including nepheline syenite ^e	50,000	50,000	50,000	50,000	50,000
Gemstones, other than diamond:	_				
Opal value, \$million		47	50	36	40 ^e
	o. <u>5</u>	1			e
	<u>o.</u> 58	48	50	36	40 ^e
Gypsum thousand metric to		4,268 ^r	4,066 ^r	4,325 ^r	3,857
Kyanite ^e	1,000	1,000	1,000	1,000	1,000
Lime ^e	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Magnesite	605,314	484,314	472,668	473,983	474,000 ^e
Nitrogen, N content of ammonia	762,200	686,400	786,800	790,000	790,000
Perlite, crude ^e	5,000	5,000	5,000	5,000	5,000
Phosphate rock	977,100	2,024,580	2,100,000 e	2,200,000 e	2,200,000
Salt ³ thousand metric to	9,254 ^r	9,961 ^r	10,256	11,088	12,444
Stone and sand and gravel:				r	
	o. 26,800 ^r	28,988 ^r	28,825 ^r	32,229 ^r	35,000 ^e
	o. 70,400 ^r	68,369 ^r	75,649 ^r	89,179 ^r	90,000 ^e
	o. 132 ^r	143 ^r	147 ^r	258 ^r	260 ^e
	o. 9,858 ^r	12,155 ^r	12,718 ^r	18,850 ^r	20,000 ^e
Dolomite ^e d	o. 10,000	10,000	10,000	10,000	10,000

$\label{eq:TABLE 1--Continued} \mbox{AUSTRALIA: PRODUCTION OF MINERAL COMMODITIES}^1$

(Metric tons unless otherwise specified)

Commodity		2001	2002	2003	2004	2005
INDUSTRIAL MINERALSCo	ntinued					
Stone and sand and gravelContinued:						
Limestone	thousand metric tons	15,215 ^r	18,333 ^r	17,076 ^r	17,211 ^r	17,500 ^e
Silica in the form of quartz, quartzite, glass sand	do.	4,472 ^r	4,046 ^r	4,181 ^r	3,670 ^r	3,600 e
Sulfur, byproduct:						
Metallurgy	do.	817	899	900 ^e	900 ^e	900 ^e
Petroleum	do.	45	60	60 ^e	60 ^e	60 ^e
Total	do.	862	959	960 ^e	960 ^e	960 ^e
Talc, chlorite, pyrophyllite, steatite		160,741 ^r	165,980 ^r	123,080 ^r	151,582 ^r	155,000 ^e
MINERAL FUELS AND RELATED I	MATERIALS					
Coal:						
Bituminous and subbituminous	thousand metric tons	264,680	274,850 ^r	280,700 ^r	298,000 ^r	303,000
Lignite ^e	do.	70,000	73,000	66,000 ^r	67,000	67,000 ^e
Total ^e	do.	335,000	421,000 ^r	346,700 ^r	365,000 ^r	370,000 ^e
Coke, metallurgical ^e	do.	800	300	300	300	300
Gas, natural, marketed	million cubic meters	34,820 ^r	36,200 ^r	37,410 ^r	41,680 ^r	42,630
Petroleum:						
Crude	thousand 42-gallon barrels	237,889 ^r	221,036 ^r	193,216 ^r	171,781 ^r	155,320
Refinery products	do.	293,589 ^r	293,878 ^r	273,518 ^r	280,242 ^r	255,863
Uranium, mine output, U ₃ O ₈ content		7,680	3,536	8,912	10,600 ^r	11,218

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through January 25, 2007.

²Does not include production from the Northern Territory and the State of Victoria.

${\bf TABLE~2}$ AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities 1,2,3	Annual capacity ^e
Alumina	Queensland Alumina Ltd., operator [Rio Tinto Ltd., 30.3%; Kaiser Aluminum and Chemical Corp. (Australia) Ltd., 28.3%; Alcan South Pacific Pty. Ltd., 21.4%; Pechiney Australia Pty. Ltd., 20%]	Gladstone alumina refinery, QLD	3,800
Do.	Alcan Northern Territory Pty. Ltd., 70%, and Alcan South Pacific Pty. Ltd., 30%	Gove alumina refinery, NT	1,900
Do.	Alcoa World Alumina Australia, 100%	Kwinana alumina refinery, WA	2,100
Do.	do.	Pinjarra alumina refinery, WA	3,400
Do.	Alcoa World Alumina Australia, 60%, and Western Mining Corp., 40%	Wagerup alumina refinery near Waroona, WA	2,200
Do.	Worsley Alumina Pty. Ltd., manager [BHP Billiton Ltd., 86%, and Japan Alumina Associates (Australia) Pty Ltd., 10%]	Worsley alumina refinery, 20 km NW of Collie, WA	3,200
Aluminum	Comalco Aluminium (Bell Bay) Ltd., 100%	Bell Bay aluminum smelter, TAS	142
Do.	VAW Kurri Kurri Pty. Ltd., 100%	Kurri Kurri aluminum smelter, NSW	150
Do.	Boyne Smelters Ltd., operator (Rio Tinto Ltd., 64%; Sumitomo Light Metal Industries Ltd., 17%; Ryowa Development Pty. Ltd., 12%, Kobe Steel Ltd., 5%; Sumitomo Chemical Co. Ltd., 2%)	Boyne Island aluminum smelter, QLD	490
Do.	Alcoa of Australia, 100%	Point Henry aluminum smelter, VIC	185
Do.	Alcoa of Australia, 45% and manager; China International Trust Investment Co. (a Chinese Government agency), 2.5%; Marubeni Australia Pty. Ltd., 22.5%; Eastern Aluminum Ltd., 10%	Portland aluminum smelter, VIC	345
Do.	Tomago Aluminium Co. Pty. Ltd., operator (Gove Aluminium Finance Ltd., 36%; Pechiney Australia Pty. Ltd., 36%; Australian Mutual Provident Society, 16%; VAW Australia Pty. Ltd., 12%)	Tomago aluminum smelter, NSW	444
Antimony	New England Antimony Mines NL, 100%	Hillgrove underground antimony-gold mine, 25 km E of Armidale, NSW	4
Bauxite	Alcan Inc., 100%	Gove open pit bauxite mine, Gove Peninsula, NT	7,000
Do.	Alcoa World Alumina Australia, 100%	Huntly open pit bauxite mine, 80 km S of Perth, WA	20,000
Do.	Comalco Ltd., operator (Rio Tinto plc, 100%)	Weipa-Andoom open pit bauxite mine, Weipa, QLD	12,000
Do.	do.	Willowdale open pit bauxite mine, 130 km S of Perth, WA	8,600
Do.	Worsley Alumina Pty. Ltd., manager [BHP Billiton Ltd., 86%; Kobe Alumina Associates (Australia) Pty. Ltd., 10%; Nissho Iwai Alumina Pty. Ltd., 4%]	Worsley open pit bauxite mine, 50 km NE of Collie, WA	11,000
Bentonite	Arumpo Bentonite Pty. Ltd., 100%	Arumpo open pit bentonite mine, 95 km NE of Mildura, NSW	10
Do.	Unimin Australia Ltd., 100%	Cressfield open pit bentonite mine, 20 km N of Scone, NSW	12
Do.	do.	Miles open pit bentonite mine, 350 km W of Brisbane, QLD	100
Cement	Blue Circle Southern Cement Ltd., 100%	Berrima Cement Plant, NSW	1,200
Do.	Adelaide Brighton Cement Ltd., 100%	Birkenhead Cement Plant, SA	1,000
Do.	Queensland Cement Ltd., 100%	Darra Cement Plant, QLD	700
Do.	Adelaide Brighton Cement Ltd., 100%	Geelong Cement Plant, VIC	800
Do.	Goliath Cement Holdings Ltd., 100%	Railton Cement Plant, TAS	1,000
Do.	Cockburn Cement Ltd., 100%	South Coogee Cement Plant, WA	1,000
Chromite	Sylvania Resources Ltd., 100%	Coobina open pit chromite mine, 56 km ESE of Newman, WA	100
Coal, black	Powercoal Pty. Ltd., 100%	Angus Place longwall coal mine, 16 km NW of Lithgow, NSW	2,200

(Thousand metric tons unless otherwise specified)

Commodite	Maior angesting agents and a significant		Annual
Commodity Coal, blackContinued:	Major operating companies and major equity owners BHP Steel (AIS) Pty. Ltd., 100%	Location of main facilities ^{1,2,3} Appin longwall coal mine, 40 NW of Wollongong, NSW	capacity ^e 3,300
Do.	Powercoal Pty. Ltd., 100%	Awaba underground coal mine, 30 km SW of Newcastle, NSW	2,000
Do.	Oakbridge Pty. Ltd., 95%, and Sumitomo Corp., 5%	Baal Bone longwall coal mine, 24 km NW of Lithgow, NSW	3,500
Do.	BHP Billiton Hunter Valley Energy Coal, 100%	Bayswater open pit coal mine, 33 km NW of Singleton, 13 km SSW of Muswellbrok, NSW	5,500
Do.	Coal and Allied Industries Ltd., 40% and manager (Wesfarmers Bengalla Ltd., 40%; MCDA Bengalla Investment Pty. Ltd., 10%; Taipower Bengalla Pty. Ltd., 10%)	Bengalla open pit coal mine, 5 km W of Muswellbrook, NSW	5,000
Do.	Berrima Coal Pty. Ltd., 100%	Berrima underground coal mine, 60 km NE of Goulburn, NSW	2,000
Do.	BHP Billiton Mitsubishi Alliance, manager (BHP Billiton Ltd., 50%, and Mitsubishi Development Pty. Ltd., 50%)	Blackwater open pit coal mine (includes South Blackwater), 195 km W of Rockhamton, QLD	13,500
Do.	Xstrata Coal Australia Pty. Ltd., manager (Oakbridge Pty. Ltd., 87.5%, and Nippon Steel Australia Pty. Ltd., 12.5%)	Bulga open pit/longwall coal mine, 16 km SW of Singleton, NSW	11,000
Do.	Pacific Coal Pty. Ltd., 57.195% and manager [Leichhardt Coal Pty. Ltd., 31.419%; EPDC (Australia) Pty. Ltd., 7.9723%; and Japan Coal Development Co. Ltd., 3.416%]	Blair Athol open pit coal mine, 110 km NW of Emerald, 25 km NW of Clermont, QLD	11,000
Do.	Bloomfield Collieries Pty. Ltd., 100%	Bloomfield open pit coal mine, 20 km NW of Newcastle, 5 km SE of Maitland, NSW	1,300
Do.	Anglo Coal Holdings Australia Ltd., 100%	Boundary Hill open pit coal mine (includes Callide), 115 km to 140 km W of Gladstone, QLD	7,250
Do.	RAG Australia Pty. Ltd., manager (Burton Coal Pty. Ltd., 95%, and Thiess Pty. Ltd., 5%)	Burton open pit coal mine, 150 km SW of Mackay, QLD	5,800
Do.	Camberwell Coal Pty. Ltd., manager [Toyota Tsusho Mining (Australia) Pty. Ltd., 90%, and Dia Coal Mining (Australia) Pty. Ltd., 10%]	Camberwell open pit coal mine, 10 km NW of Singleton, NSW	4,000
Do.	LakeCoal Pty. Ltd., 80%, manager; Catherine Hill Resources Pty. Ltd., 20%	Chain Valley underground coal mine, 48 km S of Newcastle, NSW	3,000
Do.	Centennial Coal Co. Ltd., 85%, manager; SK Australia Pty. Ltd., 15%	Clarence underground coal mine, 10 km E of Lithgow, NSW	2,200
Do.	Roche Mining Pty. Ltd., operator (Millmerran Power Partners, 100%)	Commodore open pit coal mine, 80 km S of Toowoomba, QLD	3,600
Do.	Xstrata Coal Australia Pty. Ltd., 50%; Centennial Coal Co. Ltd., 45%; Tokyo Boeki Ltd., 5%	Cook underground coal mine, near Blackwater, QLD	1,000
Do.	Powercoal Pty. Ltd., 100%, manager	Cooranbong underground coal mine, 35 km SW of Newcastle, NSW	1,600
Do.	Australian Premium Coals Pty. Ltd., manager (Macarthur Coal Ltd., 45%; QCR No. 2 Pty. Ltd., 20%; CPB Coals Pty., 10%; Marubeni Coal Pty. Ltd., 7.5%; Nissho Iwai Australia Ltd., 7.5%; Citic Australia Coal Ltd., 5%; Kawasho Group, 3%; Nittetsu Shoji, 2%)	Coppabella open pit coal mine, 150 km SW of Mackay, QLD	4,700
Do.	BHP Billiton Mitsubishi Alliance, manager (BHP Billiton Ltd., 50%, and Mitsubishi Development Pty. Ltd., 50%)	Crinum longwall coal mine, 45 km NE of Emerald, QLD	4,000
Do.	Cumnock No. 1 Colliery Pty. Ltd., 100%	Cumnock No. 1 open pit/longwall coal mine, 28 km NW of Singleton, NSW	2,750
Do.	Curragh Queensland Mining Ltd., 100%	Curragh open pit coal mine, 70 km E of Emerald, QLD	5,000
Do.	Anglo Coal Holdings Australia Ltd., 93%, and Ssangyong Resources Ltd., 7%	Dartbrook longwall coal mine, 70 km N of Singleton, NSW	3,750
Do.	BHP Billiton Ltd., 100%	Dendrobium longwall coal mine, 15 km SW of Wollongong, NSW	5,200

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	L 1.2.3	Annual
Commodity Coal, blackContinued:	Major operating companies and major equity owners Anglo Coal Holdings Australia Ltd., 88.2% and manager; Mitsui Coal Development Australia Pty. Ltd., 3.8%; Mitsui Mining (Australia) Pty. Ltd., 3%; Daesung Australia Pty. Ltd., 2.5%; and Hyundai (Australia) Pty. Ltd., 2.5%	Location of main facilities ^{1,2,3} Drayton open pit coal mine, 35 km NW of Singleton, NSW	capacity ^e 5,000
Do.	Ebenezer Mining Co., 100%	Ebenezer open pit coal mine, 40 km SW of Brisbane, QLD	1,500
Do.	BHP Steel (AIS) Pty. Ltd.	Elouera longwall coal mine, 15 km SW of Wollongong, NSW	2,000
Do.	Idemitsu Kosan Co. Ltd., 85%; EPDC (Australia) Pty. Ltd., 10%; LG International (Australia) Pty. Ltd., 5%	Ensham-Yongala open pit coal mine, 40 km NE of Emerald, QLD	5,500
Do.	Griffin Coal Mining Co. Pty. Ltd., 100%	Ewington II open pit coal mine, 8 km E of Collie, WA	1,000
Do.	CAML Resources Pty. Ltd., 63%; Itochu Corp., 20.6%; Bowen Basin Investments Pty. Ltd., 16.4%	Foxleigh open pit coal mine, Bowen Basin, QLD	2,300
Do.	Anglo Coal Holdings Australia Ltd., 100% of German Creek and 75.04% of German Creek East; Marubeni Coal Pty. Ltd., 24.96% of German Creek East	German Creek and German Creek East open pit/longwall coal mines, 275 km WNW of Rockhampton, QLD	6,000
Do.	Console Energy Inc., 50% and Namoi Hunter Pty. Ltd., 50%	Glennies Creek longwall coal mine, 12 km N of Singleton, NSW	2,500
Do.	BHP Billiton Ltd., 80% at Riverside and 50% at Goonyella; Mitsubishi Corp., 50% at Goonyella; BHP Mitsui Coal Pty. Ltd., 20% at Riverside	Goonyella-Riverside open pit coal mines, 140 km SW of Mackay, QLD	11,000
Do.	BHP Billiton Mitsubishi Alliance, manager (BHP Billiton Ltd., 50%, and Mitsubishi Development Pty. Ltd., 50%)	Gregory open pit coal mine, 60 km N of Emerald, QLD	5,500
Do.	Coal and Allied Industries Ltd., 100%, manager	Hunter Valley Operations (includes Carrington Chestnut, Howick, Hunter Valley No. 1, Lemington, Riverview open pit coal mines), 10 km W to 25 km N of Singleton, NSW	15,000
Do.	New Hope Corp. Ltd., 100%	Jeebropilly open pit coal mine, 35 km SW of Brisbane, QLD	1,500
Do.	Queensland Coal Mine Management Pty. Ltd., 70%; Winnin Pty. Ltd., 15%; Marubeni Coal Pty. Ltd., 15%	Jellinbah East open pit coal mine, 90 km E of Emerald, QLD	3,000
Do.	Pacific Coal Pty. Ltd., 80%, and Kestrel Coal Investment Pty. Ltd., 20%	Kestrel longwall coal mine, 40 km NNE of Emerald, QLD	3,300
Do.	Xstrata Coal Australia Pty. Ltd., 67%, and Mitsui Matushima Australia Pty. Ltd., 32.5%	Liddell open pit coal mine, 25 km NW of Singleton, NSW	4,000
Do.	Burragorang Valley Coal Pty. Ltd., 100%	Metropolitan longwall coal mine, 30 km N of Wollongong, NSW	1,400
Do.	LakeCoal Pty. Ltd., 80%, and Catherine Hill Resources Pty. Ltd., 20%	Moonee longwall coal mine, 37 km S of Newcastle, NSW	1,200
Do.	Anglo Coal Holdings Australia Ltd., 88%; Nippon Steel Australia Pty. Ltd., 5%; Tomen Coal Resources Pty. Ltd., 3.75%; private interests, 3.25%	Moranbah North longwall coal mine, 150 km SW of Mackay, QLD	5,700
Do.	Hunter Valley Coal Corp., 100%	Mount Owen open pit coal mine, 20 km NW of Singleton, near Ravensworth, NSW	8,000
Do.	Coal and Allied Industries Ltd., 80%, and Pohang Steel Australia Pty. Ltd., 20%	Mount Thorley open pit coal mine, 14 km SW of Singleton, NSW	6,500
Do.	Mitsui & Co. (Australia) Ltd., 100%	Moura open pit coal mine, 185 km W of Gladstone, QLD	4,400
Do.	The Griffin Coal Mining Co. Pty. Ltd., 100%	Muja open pit coal mine, 18 km SE of Collie, WA	2,000
Do.	Powercoal Pty. Ltd., 100%	Munmorah underground coal mine, 55 km S of Newcastle, NSW	7,000
Do.	Muswellbrook Coal Co., 100%	Muswellbrook No. 2 open pit coal mine, 4 km NE of Muswellbrook, Hunter Valley NSW	1,700
Do.	Powercoal Pty. Ltd., 100%	Myuna underground coal mine, 35 km S of Newcastle, NSW	1,500

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities 1,2,3	Annual capacity ^e
Coal, blackContinued:	Nardell Coal Corp., 100%	Nardell underground coal mine, 18 km NW of Singleton, NSW	1,200
Do.	MIM Holdings Ltd., manager (Collinsville Coal Co. Pty. Ltd., 75%, and Itochu Coal Resources Australia Pty. Ltd., 25%)	Newlands-Collinsville-Abbot Point open pit/longwall coal mine, 130 km west of Mackay, QLD	7,000
Do.	Powercoal Pty. Ltd., 100%, manager	Newstan longwall coal mine, 30 km SW of Newcastle, NSW	2,700
Do.	Rag Coal International AG, 40%, and Thiess Pty. Ltd., 40%	North Goonyella longwall coal mine, 180 km W of Mackay, QLD	3,000
Do.	BHP Billiton Ltd., 50%, and Mitsubishi Corp., 50%	Norwich Park open pit coal mine, 85 km NNE of Emerald, QLD	4,000
Do.	Oaky Creek Coal Pty. Ltd., 75%; Sumitomo Coal Australia Pty. Ltd., 15%; Itocho Coal Resources Australia Pty. Ltd., 10%, of Oaky Creek; Namoi Highwall Pty. Ltd., 50%, and Sumitomo Coal Australia Pty. Ltd., 50%, of Alliance	Oaky Creek longwall and Alliance open pit coal mines, 300 km WNW of Rockhampton, QLD	9,500
Do.	BHP Billiton Ltd., 50%, and Mitsubishi Development Pty. Ltd., 50%	Peak Downs open pit coal mine, 145 km N of Emerald, QLD	7,500
Do.	Wesfarmers Premier Coal Ltd., 100%	Premier open pit coal mine, 10 km SE of Collie, WA	4,000
Do.	Xstrata Coal Australia Pty. Ltd., 100% of Ravensworth and 50% at Narama; Iluka Resources Ltd., 50% at Narama	Ravensworth-Narama open pit coal mine (includes Ravensworth East), at Lemington, 20 km NW of Singleton, NSW	6,200
Do.	Bloomfield Colliers Pty. Ltd., 100%	Rixs Creek open pit coal mine, 5 km NW of Singleton, NSW	2,000
Do.	BHP Mitsui Coal Pty. Ltd., 100%	South Walker Creek open pit/ underground coal mine, 90 km SW of Mackay, 20 km W of Nebo, QLD	3,500
Do.	BHP Billiton Ltd., 50%, and Mitsubishi Development Pty. Ltd., 50%	Saraji open pit coal mine, 125 km N of Emerald, QLD	5,000
Do.	Southland Coal Pty. Ltd., 90%, and Thiess Pty. Ltd., 10%	Southland longwall coal mine, 40 km W of Newcastle, NSW	2,000
Do.	G.C. Springvale Pty. Ltd., 50%, and Samsung Development (Australia) Pty. Ltd., 50%	Springvale longwall coal mine, 16 km NW of Lithgow, NSW	2,000
Do.	Austral Coal Ltd., 100%	Tahmoor longwall coal mine (includes Tahmoor North and Bargo), near Picton, about 70 km SW of Sydney, NSW	2,000
Do.	Pacific Coal Pty. Ltd., 100%	Tarong-Meandu open pit coal mine, 85 km N of Toowoomba, QLD	5,500
Do.	BHP Steel (AIS) Pty. Ltd., 100%	Tower longwall coal mine, 32 km NW of Wollongong, NSW	2,000
Do.	Ulan Coal Mines Ltd., 10%, and Mitsubishi Development Pty. Ltd., 10%	Ulan open pit/longwall coal mine, 45 km NW of Mudgee, NSW	12,000
Do.	Xstrata Coal Australia Pty. Ltd., 95%, and United Mine Workers, 5%	United Collieries underground coal mine, 15 km W of Singleton, NSW	1,600
Do.	Wambo Coal Pty. Ltd., 100%	Wambo longwall coal mine, 15 km W of Singleton, NSW	3,100
Do.	Coal and Allied Industries, Ltd., 55.574%; Mitsubishi Coal Development Pty. Ltd., 28.898%; Nippon Steel Australia Pty. Ltd., 9.528%; Mitsubishi Corp., 6%	Warkworth open pit coal mine, 11 km SW of Singleton, NSW	6,400
Do.	BHP Steel (AIS) Pty. Ltd., 100%	West Cliff longwall coal mine, 43 km NW of Wollongong, NSW	3,000
Do.	Oceanic Coal Australia Ltd., 70%; Marubeni Coal Pty. Ltd., 17%; Ocal Macquarie Pty. Ltd., 10%; Kokan Kogyo (Australia) Pty. Ltd., 3%	West Wallsend longwall coal mine, 25 km SW of Newcastle, NSW	3,000
Do.	Powercoal Pty. Ltd., 100%	Wyee longwall coal mine, 40 km S of Newcastle, NSW	1,200

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities ^{1,2,3}	Annual capacity ^e
Coal, brown	Alcoa World Alumina Australia, 100%	Anglesea open pit lignite mine, 97 km SW of Melbourne, near Geelong, VIC	1,200
Do.	Hazelwood Power, 100%	Hazelwood open pit lignite mine at Morwell, 150 km SE of Melbourne, VIC	19,500
Do.	Loy Yang Power Ltd., 100%	Loy Yang open pit lignite mine at Traralgon, 165 km E of Melbourne, VIC	32,000
Do.	Auspower Pty. Ltd., 73.6%; Powergen Plc., 18.4%; Deutsche Asset Management, 8%	Yallourn open pit lignite mine, 140 km SE of Melbourne, VIC	18,500
Cobalt	Preston Resources Ltd., 100%	Bulong open pit nickel-cobalt mine, 30 km E of Kalgoorlie, WA	0.1
Do.	OM Group Inc., 100%	Cawse open pit nickel-cobalt mine, 50 km NW of Kalgoorlie, WA	0.2
Do.	Anaconda Nickel Ltd., 60%, manager; Glencore Australia Pty. Ltd. International AG, 40%	Murrin Murrin open pit nickel-cobalt mine, 60 km E of Leonora, WA	0.1
Do.	Australian Nickel Mines NL, 100%	Radio Hill underground nickel-cobalt mine, 100 km ESE of Karratha, WA	0.2
Do.	QNI Pty. Ltd., 100%	Yabulu nickel-cobalt refinery, Townsville, QLD	2
Copper	Newcrest Mining Ltd., 100%	Cadia Hill open pit gold-copper mine, 21 km SSW of Orange, NSW	25
Do.	Glencore Australia Pty. Ltd., 100%	Cobar underground copper mine, 10 km NW of Cobar, NSW	30
Do.	Amalg Resources NL, 100%	Eloise underground copper mine, 60 km SE of Cloncurry, QLD	70
Do.	MIM Holdings Ltd., 51%, and Westpac Banking Corp., 49%	Ernest Henry open pit copper-gold mine, 35 km NE of Cloncurry, QLD	105
Do.	Murchison Zinc Co. Pty. Ltd., 100%	Golden Grove underground zinc-copper mine (includes Gossan Hill and Scuddles), 225 km E of Geraldton, WA	6
Do.	Thalanga Copper Mines Pty. Ltd., 70%, and BML Holdings Pty. Ltd., 30%	Highway-Reward open pit and underground copper mine, 37 km S of Charters Towers	185
Do.	Western Metals Ltd., 100%	Hellyer underground zinc-lead-copper- silver mine, 80 km SSW of Burnie, TAS	1
Do.	Copper Refineries Pty. Ltd., operator (MIM Holdings Ltd., 100%)	MIM copper refinery, Townsville, QLD	270
Do.	MIM Holdings Ltd., 100%	MIM copper smelter, QLD	250
Do.	Matrix Metals Ltd., 100%	Mount pithbert open pit mine (includes Mount Watson), 90 km NW of Cloncurry, QLD	8
Do.	Western Metals Ltd., 100%	Mount Gordon open pit copper mine (includes Esperanza and Mammoth), 125 kilometers N of Mount Isa	46
Do.	MIM Holdings Ltd., 100%	Mount Isa underground copper-lead-zinc- silver mine (also includes Enterprise, George Fisher, and Hilton mines) at Mount Isa, QLD	275
Do.	Copper Mines of Tasmania Pty. Ltd., 100%	Mount Lyell underground copper-gold mine, 2 km NE of Queenstown, TAS	35
Do.	Straits (Nifty) Pty. Ltd., 100%	Nifty open pit copper mine, 200 km SE of Marble Bar, WA	22
Do.	Rio Tinto Ltd., 80%; Sumitomo Metal Mining Oceania Pty. Ltd., 13.3%; SC Mineral Resources Pty. Ltd., 6.7%	Northparkes open pit/underground coppergold mine, 27 km N of Parkes, NSW	55
Do.	WMC Olympic Dam Operations Pty. Ltd., 100%	Olympic Dam underground copper-silver- gold-uranium mine at Roxby Downs. 80 km N of Woomera, SA	220
Do.	do.	Olympic Dam copper refinery, SA	220
Do.	do.	Olympic Dam copper smelter, SA	70

(Thousand metric tons unless otherwise specified)

Cor	nmodity	Major operating companies and major equity owners	Location of main facilities ^{1,2,3}	Annual
CopperCont		Placer Dome Asia Pacific Ltd., 100%	Osborne underground copper-gold mine, 195 km SE of Mount Isa, QLD	capacity ^e 50
Do.		Peak Gold Mines Pty. Ltd., 100%	Peak underground gold-zinc-lead-copper- silver underground mine (includes New Cobar, New Occidental, and Perseverance), 8 km S of Cobar, NSW	3
Do.		Furukawa Co. Ltd., 52.5%; Nittetsu Mining Co., 20%; Nissho Iwai Corp., 17.5%; Itochu Corp., 10%	Port Kembla copper refinery, NSW	120
Do.		do.	Port Kembla copper smelter, NSW	120
Do.		Newcrest Mining Ltd., 100%	Ridgeway underground gold-copper mine, 25 km S of Orange, NSW	30
Do.		Pasminco Ltd., 100%	Rosebery underground zinc-lead-silver- copper-gold mine, 35 km N of Queenstown, TAS	1
Do.		Selwyn Mines Ltd., 100%	Selwyn underground copper-gold mine, 150 km SE of Mount Isa, QLD	17
Diamond	thousand carats	Rio Tinto plc., 100%	Argyle Mine (AK-1 lamproite pipe and alluvial diamond mines), 120 km SW of Kununurra, WA	26,000
Do.	do.	do.	Merlin open pit diamond mine, 80 km S of Borroloola, NT	55
Diatomite		Australian Diatomite Mining Pty. Ltd., 100%	Barraba open pit diatomite mine, 85 km NNW of Tamworth, NSW	25
Dolomite		OneSteel Ltd., 100%	Ardrossan metallurgical dolomite quarry, Northern York Peninsula, SA	650
Feldspar		Minerals Corp. Ltd., 100%	Triple Chance open pit feldspar mine (includes Lady Beryl, Bakers, and Spar Ridge), 42 km SW of Broken Hill, NSW	15
Garnet		GMA Garnet Pty. Ltd., 100%	Port Gregory open pit industrial garnet mine, 100 km N of Geraldton, WA	200
Gas: Condensate	thousand 42-gallon barrels per day	Woodside Petroleum Pty. Ltd., manager [BHP Petroleum Pty. Ltd., BP Australia Holdings Ltd., Chevron Asiatic Ltd., Japan Australia LNG (MIMI) Pty. Ltd., Shell Development (Australia) Pty. Ltd., and Woodside Petroleum Ltd., 16.67% each]	North West Shelf gas operations, 130 km offshore from Dampier, WA	60
Natural	million cubic meters per day	Woodside Petroleum Pty. Ltd., manager [BHP Petroleum Pty. Ltd., BP Australia Holdings Ltd., Chevron Asiatic Ltd., Japan Australia LNG (MIMI) Pty. Ltd., Shell Development (Australia) Pty. Ltd., and Woodside Petroleum Ltd., 16.67% each]	North West Shelf gas operations, 130 km offshore from Dampier, WA	20
Liquefied na	ntural million metric tons	do.	Three-train liquefaction plant, Burrup Peninsula, WA	8
Gold	kilograms	Gold Fields Ltd. (South Africa), 100%	Agnew open pit/underground gold mine, 23 km W of Leinster, WA	5,600
Do.	do.	New Hampton Goldfields Ltd., 100%	Big Bell Consolidated open pit/underground gold mine (includes Big Bell, Black Swan, Cuddingwarra, Great Fingall, Golden Crown, and Tuckabianna): Big Bell, 30 km WNW of Cue; Cuddingwarra, 10 km WNW of Cue; Golden Crown, 7 km S of Cue, WA	7,000
Do.	do.	Worsley Alumina Pty. Ltd., operator (Newmont Mining Corp., 44.45%; AngloGold Ltd., 33.33%; Newcrest Mining Ltd., 22.22%)	Boddington open pit/underground gold mine (includes Wandoo and Hedges), 150 km SE of Perth, WA ⁴	12,000
Do.	do.	Normandy Yandal Operations Ltd., 100%	Bronzewing underground gold mine (includes Mount McClure), 65 km NE of Leinster, WA	9,000
Do.	do.	Newcrest Mining Ltd., 100%	Cadia Hill open pit gold-copper mine, 21 km SSW of Orange, NSW	11,000

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commod	lity	Major operating companies and major equity owners	Location of main facilities 1,2,3	Annual capacity
GoldContinued:	kilograms	MIM Holdings Ltd., 51%, and Westpac Banking Corp., 49%	Ernest Henry open pit copper-gold mine, 35 km NE of Cloncurry, QLD	3,000
Do.	do.	Kalgoorlie Consolidated Gold Mines Pty. Ltd., 100%	Gidji Roaster gold smelter, Kalgoorlie, WA	24,300
Do.	do.	Normandy NFM Ltd., 100%	Granites-Dead Bullock Soak open pit/ underground gold mine, 550 km NW of Alice Springs, in the Tanami Desert, NT	7,000
Do.	do.	Placer Dome Asia Pacific Ltd., manager (Placer Dome Inc., 60%, and Delta Gold Ltd., 40%)	Granny Smith open pit gold mine (includes Sunrise and Wallaby), 20 km S of Laverton, WA	16,000
Do.	do.	AuironGold Ltd., 100%	Henty underground gold-silver mine, 30 km N of Queenstown, TAS	3,700
Do.	do.	Thalanga Copper Mines Pty. Ltd., 70%, and BML Holdings Pty. Ltd., 30%	Highway-Reward open pit and underground copper mine, 37 km S of Charters Towers, QLD	1,000
Do.	do.	New England Antimony Mines NL, 100%	Hillgrove underground antimony-gold mine, 25 km E of Armidale, NSW	1,000
Do.	do.	Newmont Yandal Operations Ltd., 100%	Jundee-Nimary open pit/underground gold mine, 45 km NE of Wiluna, WA	12,000
Do.	do.	AuironGold Ltd., 100%	Kanowna Belle underground gold mine, 18 km NE of Kalgoorlie, WA	7,000
Do.	do.	Barrack Gold Corp., 100%	Lawlers underground gold mine, 30 km SW of Leinster, WA	3,000
Do.	do.	Sons of Gwalia Ltd., 100%	Marvel Loch Operations open pit/ underground gold mines approximately 30 km SE of Southern Cross, WA	10,000
Do.	do.	Saint Barbara Mines Ltd., 100%	Meekatharra open pit/underground gold mine, 20 km S of Meekatharra, WA	4,000
Do.	do.	Copper Mines of Tasmania Pty. Ltd., 100%	Mount Lyell underground copper-gold mine, 2 km NE of Queenstown, TAS	1,000
Do.	do.	Harmony Gold Mining Co. Ltd., 100%	Mount Magnet open pit/underground gold mine (includes Hill 50 and Star), 2 km from Mount Magnet, WA	8,500
Do.	do.	Australian Gold Refineries, 100% (State of WA agency)	Newburn gold refinery, WA	246,000
Do.	do.	Croesus Mining NL, 100%	Norseman underground gold mine at Norseman, WA	3,700
Do.	do.	Rio Tinto Ltd., 80%; Sumitomo Metal Mining Oceania Pty. Ltd., 13.3%; SC Mineral Resources Pty. Ltd., 6.7%	Northparkes open pit/underground copper- gold mine, 27 km N of Parkes, NSW	155,000
Do.	do.	Placer Dome Asia Pacific Ltd., 100%	Osborne underground copper-gold mine,	1,500
Do.	do.	WMC Olympic Dam Operations Pty. Ltd., 100%	Olympic Dam underground copper-silver- gold-uranium mine at Roxby Downs, 80 km N of Woomera, SA	1,500
Do.	do.	MIM Holdings Ltd., 100%	Pacific precious metals refinery, NSW	1,900
Do.	do.	Paddington Gold Pty. Ltd., 100%	Paddington open pit gold-silver mine, 35 km NW of Kalgoorlie, WA	2,800
Do.	do.	Newmont Pajingo Pty. Ltd., 100%	Pajingo underground gold mine (includes Vera-Nancy), 60 km SSE of Charters Towers, QLD	6,400
Do.	do.	Peak Gold Mines Pty. Ltd., 100%	Peak underground gold-zinc-lead-copper- silver underground mine (includes New Cobar, New Occidental, and Perseverance), 8 km S of Cobar, NSW	350,000
Do.	do.	Alkane Exploration Ltd., 100%	Peak Hill open pit gold mine, 50 km N of Parkes, NSW	700,000
Do.	do.	Australian Gold Refineries, 100% (State of WA agency)	Perth Refinery (Newburn), WA	95,000
Do.	do.	Homestake Mining Co., 100%	Plutonic open pit/underground gold mine, (includes Freshwater), 180 km NE of Meekatharra, WA	8,000

(Thousand metric tons unless otherwise specified)

Commod	itv	Major operating companies and major equity owners	Location of main facilities 1,2,3	Annual capacity ^e
GoldContinued:	kilograms	Carpentaria Gold Pty. Ltd., 50.1%, and Haoma Mining NL, 49.9%	Ravenswood open pit mine (includes Nolans, Sarsfield, and Mount Wright), 100 km S of Townsville, QLD	3,000
Do.	do.	Newcrest Mining Ltd., 100%	Ridgeway underground gold-copper mine, 25 km S of Orange, NSW	10,800
Do.	do.	Pasminco Ltd., 100%	Rosebery underground zinc-lead-silver- copper-gold mine, 35 km N of Queenstown, TAS	1,000
Do.	do.	Gold Fields Ltd., 100%	Saint Ives open pit/underground gold mine, 75 km SSE of Kalgoorlie, WA	15,000
Do.	do.	Selwyn Mines Ltd., 100%	Selwyn underground copper-gold mine, 150 km SE of Mount Isa, QLD	700
Do.	do.	Sons of Gwalia Ltd., 100%	Sons of Gwalia open pit/underground gold mine (includes Red October, Harlech, McGraths, Kailis, and Anchor), 5 km W of Leonora, WA	6,000
Do.	do.	MPI Gold Pty. Ltd., 50%, and Pittston Mineral Ventures of Australia Pty. Ltd., 50%	Stawell underground gold mine, 240 km W of Melbourne, VIC	3,000
Do.	do.	AngloGold Ltd., 100%	Sunrise Dam open pit mine gold (includes Cleo), 55 km S of Laverton, WA	8,000
Do.	do.	Kalgoorlie Consolidated Gold Mines Pty. Ltd., manager (Barrick Gold Corp., 50%, and Newmont Mining Ltd., 50%)	Super Pit open pit gold mine (includes Fimiston), SE corner of the Kalgoorlie-Boulder Township, WA	20,000
Do.	do.	Otter Gold Mines Ltd., 60%, and AngloGold Ltd., 40%	Tanami open pit gold mine (includes Central Desert Joint Venture), 650 km NW of Alice Springs, NT	2,800
Do.	do.	PacMin Mining Corp., 100%	Tarmoola open pit gold mine, 29 km NW of Leonora, WA	6,500
Do.	do.	AngloGold Ltd., 100%	Union Reefs open pit gold mine, 12 km N of Pine Creek, NT	3,000
Do.	do.	Wiluna Mines Ltd., 100%	Wiluna open pit/underground gold mine, 7 km S of Wiluna, WA	3,300
Gypsum		Gypsum Resources Australia Pty. Ltd., 100%	Lake MacDonnell open pit gypsum mine, near Point Thevenard, SA	1,400
Do.		Dampier Salt Ltd., 100%	Lake MacLeod salt and gypsum solar evaporation ponds, 65 km N of Carnarvon, WA	900
Iron ore		Hamersley Iron Pty. Ltd., 60%, and China Iron and Steel Industry & Trade Group Corp. (a Chinese Government agency), 40%	Channar open pit iron ore mine, 70 km S of Tom Price, WA	11,000
Do.		BHP Billiton Ltd., 100%	Cockatoo Island open pit iron ore mine, 130 km NNE of Derby, WA	1,050
Do.		Hamersley Iron Pty. Ltd., 100%	Hamersley Operations (includes Brockman No. 2, Marandoo, Mount Tom Price, Nammuldi, Paraburdoo, and Yandicoogina open pit iron ore mines), 30 km to 85 km NE, NW, and S of Tom Price, WA	60,000
Do.		BHP Minerals Pty. Ltd., 100%	Jimblebar open pit iron ore mine, 40 km E of Newman, WA	6,000
Do.		Portman Ltd., 100%	Koolyanobbing Central open pit iron ore mine, 50 km NNE of Southern Cross, WA	3,000
Do.		BHP Iron Ore Pty. Ltd., 85%, manager; CI Minerals Australia Pty. Ltd., 8%; Mitsui Iron Ore Corp. Pty. Ltd., 7%	Mount Goldsworthy open pit iron ore mine (includes Yarrie), 180 km E of Port Hedland, WA	8,000
		Imdex Ltd., 100%	Mount Gould open pit iron ore mine,	6,000

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Major operating companies and major equity owners	Location of main facilities 1,2,3	Annual
		capacity ^e 25,000
· · · · · · · · · · · · · · · · · · ·	· ·	23,000
Etd., 10%, C1 Williciais Australia I ty. Etd., 5%	· · · · · · · · · · · · · · · · · · ·	
Poho Pivor Iran Associates, manager (Pio Tinto I td. 52%)	· · · · · · · · · · · · · · · · · · ·	31,000
		31,000
	•	
Australia Pty. Ltd., 10.5%; Sumitomo Metal Australia Pty. Ltd., 3.5%)	WA	
ABM Mining Ltd., 100%	Savage River open pit iron ore mine	2,400
	(includes Long Plains), 100 km SW of	
	Burnie, TAS	
OneSteel Ltd., 100%	Whyalla open pit iron ore mines,	2,600
	270 km NW of Adelaide, SA	
BHP Minerals Pty. Ltd., 55%; Pilbara Iron Pty. Ltd., 30%;	Yandi open pit iron ore mine, 92 km N of	35,000
CI Minerals Australia Pty. Ltd., 8%; Mitsui Iron Ore	Newman, WA	
Corp. Pty. Ltd., 7%		
Osterfield Pty. Ltd., 100%	Axedale Clays open pit kaolin mine, 18 km	50
•	· · ·	
Queensland Kaolin Pty. Ltd., 96.6%, and private interests, 3.4%	Skardon River open pit kaolin mine,	150
	* *	
Perilva Ltd., 100%		90
, ,		
BHP Minerals Ltd. 100%	· · · · · · · · · · · · · · · · · · ·	265
211 Minoral Etai, 100 %	e	200
Pasmingo Century Mine Ltd. 100%		70
asimico century wine Etc., 100%		70
Pasmingo I td. 100%		35
*		45
do.	=	43
Western Metals I td. 100%	<u> </u>	44
Western Metals Etd., 100 //		44
do.		160
		160 150
WIIWI Holdings Ltd., 100%		130
	-	240
	-	240
Peak Gold Mines Pty. Ltd., 100%		5
	e ,	
Pasminco Ltd., 100%		250
do.	Rosebery underground zinc-lead-silver-	23
	copper-gold mine, 35 km N of	
	Queenstown, TAS	
Australian Magnesium Corp. Ltd., 100%	Kunwarara open pit magnesite mine	3,000
	(includes Marlborough), 70 km NW	
	of Rockhampton, QLD	
Groote Eylandt Mining Co. Pty. Ltd., 100%	Groote Eylandt open pit manganese mine	2,400
	at Groote Eylandt, NT	
Pilbara Manganese Pty. Ltd., 100%	Woodie Woodie open pit manganese mine	350
	(includes Bells and East Pilbara leases),	
	400 SE of Port Hedland, WA	
Tasmanian Electro Metallurgical Co. Pty. Ltd., 100%	Bell Bay Smelter near Launceton, TAS	260
	ABM Mining Ltd., 100% OneSteel Ltd., 100% BHP Minerals Pty. Ltd., 55%; Pilbara Iron Pty. Ltd., 30%; CI Minerals Australia Pty. Ltd., 8%; Mitsui Iron Ore Corp. Pty. Ltd., 7% Osterfield Pty. Ltd., 100% Queensland Kaolin Pty. Ltd., 96.6%, and private interests, 3.4% Perilya Ltd., 100% BHP Minerals Ltd., 100% Pasminco Century Mine Ltd., 100% do. Western Metals Ltd., 100% do. MIM Holdings Ltd., 100% do. Peak Gold Mines Pty. Ltd., 100% Australian Magnesium Corp. Ltd., 100% Groote Eylandt Mining Co. Pty. Ltd., 100% Pilbara Manganese Pty. Ltd., 100%	BHP fron Ore Pty. Ltd., \$5%; Missui Irochu Iron Pty. Ltd., 10%; CI Minerals Australia Pty. Ltd., 5% Robe River Iron Associates, manager (Rio Tinto Ltd., 53%; Mitsui & Co. (Australia). Ltd., 33%; Nippon Steel Australia Pty. Ltd., 10.5%; Sumitomo Metal Australia Pty. Ltd., 3.5%) ABM Mining Ltd., 100% Savage River open pit iron ore mine, 130 km SSW of Dampier WA ABM Mining Ltd., 100% BHP Minerals Pty. Ltd., 55%; Pilbura Iron Pty. Ltd., 30%; CI Minerals Australia Pty. Ltd., 55%; Mitsui Iron Ore Corp. Pty. Ltd., 55%; Pilbura Iron Pty. Ltd., 30%; CI Minerals Australia Pty. Ltd., 8%; Mitsui Iron Ore Corp. Pty. Ltd., 7% Osterfield Pty. Ltd., 100% Perilya Ltd., 100% BHP Minerals Pty. Ltd., 96.6%, and private interests, 3.4% BHP Minerals Ltd., 100% Perilya Ltd., 100% BHP Minerals Ltd., 100% Cueensland Kaolin Pty. Ltd., 96.6%, and private interests, 3.4% BHP Minerals Ltd., 100% Conserved the Minerals Pty. Ltd., 96.6%, and private interests, 3.4% BHP Minerals Ltd., 100% Conserved the Minerals Pty. Ltd., 96.6%, and private interests, 3.4% BHP Minerals Ltd., 100% Conserved the Minerals Ltd., 100% Billy transfer of the Minerals Ltd., 100% Conserved the Minerals Ltd., 100% Minerals Australia Pty. Ltd., 100% Conserved the Minerals Ltd., 100% Conserved the Minerals Ltd., 100% Conserved the Minerals Ltd., 100% Conserved

(Thousand metric tons unless otherwise specified)

C				Annual
	ommodity	Major operating companies and major equity owners	Location of main facilities ^{1,2,3}	capacity
Mineral sand	ds	Iluka Resources Ltd., 100%	Eneabba open pit heavy-mineral sands mine, 260 km N of Perth, WA	NA
Do.		Mineral Deposits Ltd., 100%	Hawks Nest heavy-mineral sands dredge, 50 km NE of Newcastle, NSW	NA
Do.		Cable Sands (WA) Pty. Ltd., 100%	Jangardup heavy-mineral sands dredge, 50 km S of Nannup, WA	NA
Do.		Iluka Resources Ltd., 100%	North Capel open pit heavy-mineral sands mine, 7 km N of Capel, WA	NA
Do.		Stradbroke Rutile Pty. Ltd., 100%	North Stradbroke Island heavy-mineral sands dredge, 35 km E of Brisbane, QLD	NA
Do.		KMCC Western Australia Pty. Ltd., 50%, and Ticor Resources Pty. Ltd., 50%	Tiwest Joint Venture heavy-mineral sands dredge, 180 km N of Perth, WA	NA
Do.		Murray Basin Titanium Pty. Ltd., 100%	Wemen heavy-mineral sands dredge, 80 km SE of Mildura, VIC	NA
Nickel		Outokumpu Exploration Ventures Pty. Ltd., 100%	Black Swan underground nickel mine (includes Silver Swan), 53 km NE of Kalgoorlie, WA	22
Do.		Preston Resources Ltd., 100%	Bulong open pit nickel-cobalt mine, 30 km E of Kalgoorlie, WA	9
Do.		OM Group Inc., 100%	Cawse open pit nickel-cobalt mine, 50 km NW of Kalgoorlie, WA	9
Do.		Jubilee Mines NL, 100%	Cosmos open pit nickel mine, 50 km N of Leinster, WA	80
Do.		WMC Ltd., 100%	Kalgoorlie nickel smelter, Kalgoorlie, WA	100
Do.		do.	Kambalda underground nickel mines, 25 km N of Kambalda to 10 km S of Widgiemooltha, WA	35
Do.		do.	Kwinana nickel refinery, Kwinana, WA	67
Do.		do.	Leinster open pit/underground nickel mines, 10 km N of Leinster, WA	44
Do.		Mincor Resources NL, 76%; Clough Mining Pty. Ltd., 12%; and Donegal Resources Pty. Ltd., 12%	Miitel underground nickel mine (includes Redross and Mariners), 70 km S of Kambalda, WA	10
Do.		WMC Ltd., 100%	Mount Keith open pit nickel mine (includes Cliffs and Yakabindie), 70 km SSE of Wiluna, WA	50
Do.		Anaconda Nickel Ltd., 60%, and Glencore International AG, 40%	Murrin Murrin nickel refinery, Murrin Murrin, WA	45
Do.		do.	Murrin Murrin open pit nickel-cobalt mine, 60 km E of Leonora, WA	100
Do.		Australian Nickel Mines NL, 100%	Radio Hill underground nickel-cobalt mine, 100 km ESE of Karratha, WA	4
Do.		QNI Pty. Ltd., 100%	Yabulu nickel-cobalt refinery, Townsville, QLD	30
Opal		Many small producers	Andamooka and Coober Pedy areas, SA; Lightning Ridge area, NSW	NA
Petroleum	thousand 42-gallon barrels per day	Exxon Mobil Corporation, 100%	Altona Refinery, VIC	120
Do.	do.	BP Amoco Refinery (Bulwer Island) Pty. Ltd., 100%	Bulwer Island Refinery, QLD	69.3
Do.	do.	Shell Refining (Australia) Pty. Ltd., 100%	Clyde Refinery, NSW	85
Do.	do.	do.	Geelong Refinery, VIC	110
Do.	do.	ChevronTexaco Corp., 100%	Kurnell Refinery, NSW	114
Do.	do.	BP Amoco Refinery (Kwinana) Pty. Ltd., 100%	Kwinana Refinery, WA	138
Do.	do.	ChevronTexaco Corp., 100%	Lytton Refinery, QLD	106
Do.	do.	Exxon Mobil Corporation, 100%	Port Stanvac Refinery, SA	69

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

	11.		122	Annual
Phosphate rock	dity	Major operating companies and major equity owners WMC Fertilizers Ltd., 100%	Location of main facilities ^{1,2,3} Phosphate Hill-Duchess open pit phosphate mine, 140 km NW of Mount	capacity ^e 2,200
Salt		Dampier Salt Ltd., 100%	Isa, QLD Dampier solar evaporation salt pans,	5,000
Do.		do.	65 km N of Carnarvon, WA Lake MacLeod solar salt and gypsum evaporation pans, 65 km N of Carnarvon, WA	900
Do.		do.	Port Hedland solar salt fields, at Port Hedland, WA	3,000
Silica		Itochu Corp., 50%, and Tochu Corp., 50%	Kemerton silica sands dredge, 25 km NE of Bunbury, WA	450
Silver	kilograms	Perilya Ltd., 100%	Broken Hill underground silver-zinc-lead mine at Broken Hill, NSW	81,200
Do.	do.	BHP Minerals Ltd., 100%	Cannington underground silver-lead-zinc mine, 200 km SE of Mount Isa, QLD	700,000
Do.	do.	Pasminco Century Mine Ltd., 100%	Century open pit zinc-silver-lead mine, 250 km NW of Mount Isa, QLD	3,000
Do.	do.	Pasminco Ltd., 100%	Cockle Creek silver smelter, NSW	85,000
Do.	do.	do.	Elura underground zinc-silver-lead mine, 40 km NW of Cobar, NSW	35,000
Do.	do.	Western Metals Ltd., 100%	Hellyer underground zinc-lead-copper- silver mine, 80 km SSW of Burnie, TAS	60,000
Do.	do.	AuironGold Ltd., 100%	Henty underground gold-silver mine, 30 km N of Queenstown, TAS	1,100
Do.	do.	Thalanga Copper Mines Pty. Ltd., 70%, and BML Holdings Pty. Ltd., 30%	Highway-Reward open pit and underground copper mine, 37 km S of Charters Towers, QLD	1,000
Do.	do.	MIM Holdings Ltd., 100%	Mount Isa underground copper-lead-zinc- silver mine (also includes enterprise, George Fisher, and Hilton mines) at Mount Isa, QLD	375,000
Do.	do.	Australian Gold Refineries, 100% (State of WA agency)	Newburn silver refinery, WA	81,000
Do.	do.	WMC Olympic Dam Operations Pty. Ltd., 100%	Olympic Dam underground copper-silver- gold-uranium mine at Roxby Downs, 80 km N of Woomera, SA	12,900
Do.	do.	Paddington Gold Pty. Ltd., 100%	Paddington open pit gold-silver mine, 35 km NW of Kalgoorlie, WA	500
Do.	do.	Peak Gold Mines Pty. Ltd., 100%	Peak underground gold-zinc-lead-copper- silver underground mine (includes New Cobar, New Occidental, and Perseverance), 8 km S of Cobar, NSW	6,000
Do.	do.	Pasminco Ltd., 100%	Port Pirie silver smelter, SA	450,000
Do.	do.	do.	Rosebery underground zinc-lead-silver- copper-gold mine, 35 km N of Queenstown, TAS	35,000
Spodumene	do.	Gwalia Consolidated Ltd., 100%	Greenbushes open pit/underground tantalite-spodumene mine, 70 km SE of Bunbury, WA	100
Steel		BHP Steel Pty. Ltd., 100%	Newcastle steelworks, NSW	1,800
Do.		do.	Port Kembla steelworks, NSW	4,000
Do.		do.	Sydney (Rooty Hill) minimill, NSW	250
Do.		do.	Whyalla steelworks, SA	1,200
Talc		Luzenac Australia Pty. Ltd., 100%	Three Springs open pit talc mine, 330 km N of Perth, WA	200

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities ^{1,2,3}	Annual capacity ^e
Tantalum, tantalite, Ta_2O_5	pounds	Gwalia Consolidated Ltd., 100%	Greenbushes open pit/underground tantalite- spodumene mine, 70 km SE of Bunbury, WA	600,000
Do.	do.	do.	Wodgina open pit tantalite mine, 100 km S of Port Hedland, WA	500,000
Tin, banch (in situ)	cubic meters	Telminex NL, 100%	Ardlethan alluvial tin mine, 90 km NW of Wagga Wagga, NSW	500,000
Do.		Sons of Gwalia Ltd., 100%	Greenbushes Smelter, WA	1
Do.		Renison Bell Ltd., 100%	Renison Bell underground tin mine, 136 km S of Burnie, TAS	13
Uranium, U ₃ O ₈	tons	Heathgate Resources Pty. Ltd., 100%	Beverley in situ leach uranium operation, 300 km NE of Port Augusta, SA	900
Do.	do.	WMC Olympic Dam Operations Pty. Ltd., 100%	Olympic Dam underground copper-silver- gold-uranium mine at Roxby Downs, 80 km N of Woomera, SA	1,500
Do.	do.	Energy Resources of Australia Ltd., 100%	Ranger open pit uranium mine, 230 km E of Darwin, NT	4,500
Vanadium, V ₂ O ₅	do.	Xstrata Windimurra Pty. Ltd., 100%	Windimurra open pit mine vanadium, 100 km ESE of Mount Magnet, WA	8
Zinc		Perilya Ltd., 100%	Broken Hill underground silver-zinc-lead mine at Broken Hill, NSW	360
Do.		BHP Minerals Ltd., 100%	Cannington underground silver-lead-zinc mine, 200 km SE of Mount Isa, QLD	100
Do.		Pasminco Century Mine Ltd., 100%	Century open pit zinc-silver-lead mine, 250 km NW of Mount Isa, QLD	500
Do.		Pasminco Ltd., 100%	Cockle Creek zinc smelter, NSW	90
Do.		do.	Elura underground zinc-silver-lead mine, 40 km NW of Cobar, NSW	125
Do.		Murchison Zinc Co. Pty. Ltd., 100%	Golden Grove underground zinc-copper mine (includes Gossan Hill and Scuddles), 225 km E of Geraldton, WA	150
Do.		Western Metals Ltd., 100%	Hellyer underground zinc-lead-copper- silver mine, 80 km SSW of Burnie, TAS	130
Do.		MIM Holdings Ltd., 100%	Mount Isa underground copper-lead-zinc- silver mine (also includes enterprise, George Fisher, and Hilton mines) at Mount Isa, QLD	175
Do.		Peak Gold Mines Pty. Ltd., 100%	Peak underground gold-zinc-lead-copper- silver underground mine (includes New Cobar, New Occidental, and Perseverance), 8 km S of Cobar, NSW	8
Do.		Pasminco Ltd., 100%	Port Pirie zinc smelter, SA	40
Do.		do.	Ridson zinc refinery, Hobart, TAS	230
Do.		do.	Rosebery underground zinc-lead-silver- copper-gold mine, 35 km N of Queenstown, TAS	100
Do.		Sun Metals Corp. Pty. Ltd., 100%	Sun Metals zinc refinery, Stuart, QLD	170

^eEstimated; estimated data are rounded to no more than three significant digits. NA Not available.

¹Australian State and Territory abbreviations: NSW--New South Wales; NT--Northern Territory; QLD--Queensland; SA--South Australia; TAS--Tasmania; VIC--Victoria; WA--Western Australia.

²Bearing abbreviations: N--north; NNE--north-northeast; NE--northeast; SE--southeast; SSE--south-southeast; SW--south-southeast; SW--south-southwest; SW--southwest; WSW--west-southwest; WNW--west-northwest; NW--Northwest; NNW--north-northwest.

³Abbreviation(s) used for unit(s) of measure in this table include the following: km--kilometer.

⁴Care and maintenance; expansion project development decision pending.