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The Mineral Industry of Australia

By Loyd M. Trimmer III

In 2023, Australia continued to be among the world's leading producers of such mineral commodities as alumina, bauxite, coal, cobalt, copper, industrial garnet, gold, ilmenite, iron ore, lead, lithium, manganese, nickel, rare earths, rutile, salt, silver, tin, uranium, zinc, and zircon. In 2023, Australia's lithium production was estimated to account for 45% of world production (excluding the United States); industrial garnet (estimated), 40%; iron ore (Fe content), 38%; zircon, 35% (estimated); rutile (excluding the United States), 34% (estimated); bauxite (excluding the United States), 24%; manganese, 15%; alumina, 13%; lead, 10%; gold and zinc, 9% each; industrial garnet, 7%; ilmenite, 5%; refined cadmium (estimated), nickel, rare earths (estimated), salt (estimated), and mined silver, 4% each; mined copper and tin (estimated), 3% each; and aluminum, mined cobalt (estimated), magnesium compounds (estimated), and tantalum, 2% each. In 2022 (the latest year for which data were available), Australia was ranked fourth in global uranium production, accounting for approximately 9% of world production, and fifth in global coal production, accounting for 5% of world production (table 1; Energy Institute, 2024, p. 47; World Nuclear Association, 2024; Bolen, 2025; Callaghan, 2025; Cordier, 2025; Ewing, 2025; Flanagan, 2025; Friedline, 2025a, b; Hartingh, 2025; Jaskula, 2025; Johnston, 2025; Kim, 2025; Klochko, 2025; Londono, 2025; Merrill, 2025a, b; Olson, 2025; Sheaffer, 2025; Stewart, 2025; Tolcin, 2025a, b; Tuck, 2025).

Minerals in the National Economy

According to the International Monetary Fund, Australia's nominal gross domestic product (GDP) was 2.62 trillion Australian dollars (AUD) ($1.74 trillion)[1] in 2023, and the country's real GDP increased by 2.0% from 2022. According to the Australian Bureau of Statistics, the gross value added (GVA) of the mining and quarrying sector decreased by 0.4% to AUD351 billion ($233 billion), accounting for 13.6% of Australia's GDP compared with 13.9% in 2022. Coal mining accounted for 30% of the sectoral GVA, natural gas and petroleum extraction and iron ore mining accounted for 28% each, other mining accounted for 10%, and exploration and mining services accounted for 4%. The GVA of exploration and mining support services increased by 9.7% compared with that in 2022; coal mining, by 6.4%; and other mining, by 0.2%. The GVA of natural gas and petroleum extraction decreased by 4.0%, and that of iron ore mining, by 0.4% (Australian Bureau of Statistics, 2024b; International Monetary Fund, 2024).

Capital expenditure towards the mining industry totaled AUD51.2 billion ($34.0 billion) in 2023, an increase of 16% compared with that in 2022. Investment in nonmetallic mineral mining increased by 146% to AUD3.1 billion ($2.1 billion); natural gas and petroleum extraction, by 24% to AUD15.9 billion ($10.6 billion); coal mining, by 16% to AUD8.1 billion ($5.4 billion); exploration and other mining services, by 7% to AUD1.9 billion ($1.3 billion); and metallic ore mining, by 4% to AUD22.1 billion ($14.7 billion) (Department of Industry, Science and Resources, 2024, table 13).

The mineral industry employed approximately 220,000 individuals at the end of June 2023, which was an increase of 9% compared with approximately 202,000 at the end of June 2022 and accounted for about 1.6% of Australia's total employment. Metallic ore mining accounted for 43% of sectoral employment, exploration and other mining support services accounted for 22%, coal mining accounted for 19%, natural gas and petroleum extraction accounted for 8%, and nonmetallic mineral mining and quarrying accounted for 7% (Australian Bureau of Statistics, 2024a, 2025).

Government Policies and Programs

There are two categories of land ownership in Australia: freehold land, which grants the most complete ownership of the land and includes land that is held by traditional owner groups such as Aboriginal and Torres Strait Islander land groups, and non-freehold land or public land, commonly known as Crown land. Mineral resources, irrespective of whether they are located on freehold or Crown land, are owned by the Government of Australia. The right to exploit these minerals is under the jurisdiction of the respective State or Territory government (Australian Trade and Investment Commission, 2022).

In Australia's federated three-tiered Government system—local, State or Territory, and Federal—each State or Territory establishes its own legal framework for its mineral sector and has the authority to grant mining rights. Mineral resources are owned by either the Federal Government or by a given State or Territory government. The Federal Government invests in the collection and release of geoscientific data through the Department of Industry, Science and Resources, Geoscience Australia, and the Commonwealth Scientific and Industrial Research Organisation. The Federal Government sets national policy regarding the mineral sector, including the regulation of offshore mining operations, Foreign Direct Investment (FDI) guidelines, and taxation policy. The administration of offshore mineral resources is overseen by the National Offshore Petroleum Titles Administrator. The Federation is made up of six States and two Territories, which manage and allocate mineral and petroleum property rights onshore and in coastal waters. States and Territories also regulate mining operations and oversee the adherence to environmental, occupational health, and safety laws; collect royalties; and oversee other mineral-related laws and regulations that are not covered by Australia's Constitution (Geoscience Australia, 2020, p. 18–20, 24).

[1]Where necessary, values have been converted from Australian dollars (AUD) to U.S. dollars at an annual average exchange rate of AUD1.506=U.S.$1.00 for 2023, AUD1.442=U.S.$1.00 for 2022, and AUD1.332=U.S.$1.00 for 2021.

In June 2023, the Government published the Critical Minerals Strategy 2023–2030, which was an updated version from 2022 and aimed to expand the country's critical mineral sector to meet growing global demand for raw and processed critical mineral commodities. The strategy set priorities across different focus areas, including developing strategic projects; strengthening international partnerships to secure supply chains and investment; building sovereign capacity in critical mineral processing; using critical minerals to promote growth in renewable energy; and pursuing onshoring value-added mineral projects to create jobs and economic growth. New funds committed by the strategy included AUD1 billion ($664 million) from the National Reconstruction Fund for value-added projects in the resource sector; the Northern Australia Infrastructure Facility, which earmarked AUD500 million ($332 million) to support downstream processing projects; AUD57.1 million ($37.9 million) to secure partnerships to develop supply chains (Department of Industry, Science and Resources, 2023, p. 1, 4, 5, 24, 25, 29).

Production

Mineral commodities for which output increased by 10% or more in 2023 compared with that in 2022 included tungsten, by 88% (estimated); rare earths (concentrate), 81% (estimated); lithium (lithium hydroxide), 66%; lead (refinery, secondary), 52% (estimated); lead (refinery, primary), 30%; nickel matte, 29% (estimated); lithium (spodumene, concentrate), 20%; zinc (refinery, primary), 14%; cadmium (refinery, primary), 13% (estimated); and barite, 10% (estimated). Mineral commodities for which output decreased by 10% or more in 2023 compared with that in 2022 included anthracite coal, 67% (estimated); copper (primary, electrowon), 52%; ferromanganese, 51%; copper (mine, solvent extraction), 44%; cobalt (refinery, metal powder and oxide-hydroxide), 27%; magnesite, 20% (estimated); antimony (mine, Sb content), 19%; silicon metal and zirconium, 18% each (estimated); natural garnet, 16%; silicomanganese and tantalum (mine, Ta content), 14% each; ammonia (N content), 13% (estimated); crude petroleum and silver (mine and refinery), 12% each; zinc (mine, Zn content), 11%; cobalt (mine, Co content), and ilmenite and leucoxene (estimated), 10% each. Data on mineral production are in table 1.

Structure of the Mineral Industry

The Federal Government and State and Territory governments were not engaged in the exploration for nor development of mineral resources. All exploration and mining operations were undertaken by private entities. The mineral industry had the largest share of foreign ownership among all of Australia's industries. At the end of June 2022 (the latest year for which data was available), 69.6% of the total number of mining businesses were solely Australian owned, 8.9% of mining businesses were less than 10% foreign owned, 6.8% of mining businesses were between 10% and 50% foreign owned, and 14.7% of mining businesses were greater than 50% foreign owned (Geoscience Australia, 2020, p. 18; Australian Bureau of Statistics, 2023, table 6). Table 2 is a list of major mineral industry facilities.

Mineral Trade

In 2023, Australia's total goods exports were valued at AUD559 billion ($371 billion), a decrease of 6% compared with those in 2022. Australia's nonfuel mineral exports totaled AUD240 billion ($159 billion) in 2023, an increase of 9% compared with those in 2022. The value of Australia's mineral fuel exports decreased by 22% to AUD197 billion ($131 billion) in 2023. The leading mineral commodity in terms of export value was iron ore [valued at AUD136 billion ($90 billion)], followed by liquid natural gas (LNG) [AUD74 billion ($49 billion)], metallurgical coal [AUD57 billion ($38 billion)], thermal coal [AUD46 billion ($31 billion)], gold [AUD28 billion ($19 billion)], and lithium [AUD19 billion ($12 billion)]. The largest percent increases in exports, by value, included that of diamonds, by 127% (estimated); liquid petroleum gas, by 64%; gemstones, by 60%; silver, by 56%; lithium (spodumene), by 55%; bauxite, by 48%; other energy, by 30%; gold, by 21%; refined zinc, by 14%; and iron ore, by 10%. The largest percent decreases in exports, by value, included that of thermal coal, by 32%; zinc ores and concentrate, by 29%; metallurgical coal, by 24%; sapphires, by 22%; LNG, by 18%; crude petroleum and other refinery feedstock, by 17%; tin, by 14%, copper ores and concentrate, by 12%; and intermediate and refined nickel, by 11% (estimated). In 2023, Australia's major export trading partners were China (which accounted for 37% of Australia's total export value), Japan (16%), the Republic of Korea (8%), India (5%), and Taiwan and the United States (4% each) (Department of Foreign Affairs and Trade, 2024, p. 3; Department of Industry, Science and Resources, 2024a, table 17).

In 2023, the value of goods exported to China (the country's leading trade partner of goods) increased by 16% to AUD204 billion ($136 billion). At yearend, Australia's major mineral commodity exports to China, by volume, included iron ore (including pellets), 755 million metric tons (Mt); thermal coal, 51 Mt; LNG, 25 Mt; metallurgical coal, 5 Mt; zinc ores and concentrates, 1.17 Mt; refined copper, 194,000 metric tons (t); lead concentrate, 107,000 t; and refined and unrefined gold, 70 t (Department of Foreign Affairs and Trade, 2024, p. 3; Department of Industry, Science and Resources, 2024, tables 29, 41).

In 2023, the value of exports to Japan decreased by 26% to AUD88 billion ($58 billion). During the year, Australia's major mineral commodity exports to Japan included thermal coal, 71 Mt; iron ore (including pellets), 54 Mt; metallurgical coal, 37 Mt (49% high quality and 51% other); aluminum, 337,000 t; zinc ores and concentrate, 128,000 t; and lead concentrate, 46,000 t. Japan did not import copper ores and concentrate from Australia in 2023 (Department of Foreign Affairs and Trade, 2024, p. 3; Department of Industry, Science and Resources, 2024, tables 24, 29, 41).

In 2023, the Republic of Korea was a substantial importer from Australia of aluminum (497,000 t), zinc ores and concentrates (335,000 t), copper ores and concentrates (249,000 t), and lead concentrate (174,000 t), accounting for 34%, 17%, 18%, and 50% of Australia's total exports of those commodities, respectively, by volume. The Republic of Korea also imported 49 Mt of iron ore from Australia in 2023. India was the leading recipient of Australia's metallurgical coal exports (accounting for 28%), followed by Japan (25%) and the Republic of Korea (13%). China, Malaysia, and Taiwan were substantial importers of refined copper from Australia, accounting for 48%, 22%, and 9% of Australia's exports of refined copper, respectively. China and Hong Kong received the largest share of Australia's gold (refined and unrefined) exports (accounting for 28% and 23%, respectively), followed by the United Kingdom (11%) and Singapore (10%) (Department of Industry, Science and Resources, 2024, tables 29, 41).

In 2023, Australia's imported total goods were valued at AUD434 billion ($288 billion), which remained unchanged compared with that in the previous year. The value of Australia's mineral imports decreased by 5% to AUD79 billion ($52 billion). The leading mineral import, by value, was petroleum refinery products [valued at AUD52 billion ($35 billion)], followed by gold (refined and unrefined) [AUD8.6 billion ($5.7 billion)] and crude petroleum (including other refinery feedstock) [AUD8.3 billion ($5.5 billion)] (Department of Foreign Affairs and Trade, 2024, p. 6; Department of Industry, Science and Resources, 2024, table 19).

Commodity Review

Metals

Bauxite.—Western Australia remained Australia's leading bauxite-producing State (accounting for 48% of the country's bauxite production in 2023), followed by Queensland (40%) and the Northern Territory (12%). In 2023, Rio Tinto Ltd. produced 35.1 Mt of bauxite from the Weipa Project, which included the Amrun, Andoom, and East Weipa Mines, and 11.6 Mt from the Gove Mine. At yearend 2023, probable and proven ore reserves of the Amrun Mine were 950 Mt grading 54.3% aluminum oxide; the Andoom and East Weipa Mines, 72 Mt grading 50.5% aluminum oxide; and the Gove Mine, 58 Mt grading 50.2% aluminum oxide. Alcoa of Australia Ltd. (Alcoa Corp. of the United States, 60%, and Alumina Ltd., 40%), which operated the Darling Range Mines (included the Huntly and Willowdale Mines), produced 30.9 Mt of bauxite in 2023. Probable and proven ore reserves at Darling Range were 344.1 Mt grading 31.5% aluminum oxide (table 2; Alcoa Corp., 2024, p. 33, 36; Department of Industry, Science and Resources, 2024, table 23; Rio Tinto plc, 2024, p. 297, 301).

Iron Ore.—Western Australia remained Australia's leading iron-ore-producing State, accounting for 99% of the country's total iron ore production in 2023. South Australia, Tasmania, and the Northern Territory accounted for 0.6%, 0.3%, and 0.2%, respectively. The Pilbara Region in northwestern Western Australia was the country's major iron-ore-producing region and the location of 17 iron mines and 4 port terminals owned by Rio Tinto, which was the largest iron ore producer in Australia. In 2023, Pilbara operations produced 332 Mt of iron ore compared with 324 Mt in 2022. The increase in production of iron ore was attributed to the Gudai-Darri iron ore mine, which reached nameplate capacity of 43 million metric tons per year (Mt/yr) in the second quarter of 2023. The company announced plans to increase the mine's capacity to 50 Mt/yr through incremental productivity gains (Department of Industry, Science and Resources, 2024, table 28; Rio Tinto plc, 2024, p. 18, 19, 32, 33).

Nickel and Cobalt.—In 2023, the country produced 149,000 t of mined nickel, which was a decrease of 4% compared with 155,000 t (revised) in 2022. The country produced 5,200 t of mined cobalt, which was a decrease of 10% compared with 5,800 t (revised) in 2022. Western Australia accounted for the majority (99%) of the country's mined nickel production in 2023; Tasmania accounted for the remaining production. In 2023, the export volume of nickel ores and concentrates increased by 15% to 178,000 t; the export value increased by 8% to AUD521 million ($346 million). In 2023, the export volume of intermediate and refined nickel was estimated to have decreased by 7% to 118,000 t; the export value was estimated to have decreased by 11% to AUD3.9 billion ($2.6 billion) (table 1; Department of Industry, Science and Resources, 2024, table 31).

By yearend 2023, the country's nickel mining sector faced consolidation through a number of mergers and acquisitions, and several mines were placed on care-and-maintenance status. The turnover was attributed to the lower nickel prices that compressed profit margins. In 2023, the average London Metal Exchange price of refined nickel was $21,470 per metric ton, which was a 16% decrease compared to the average 2022 price. In July, Wyloo Pty. Ltd. acquired about a 91% equity interest in Mincor Resources NL. In December, Panoramic Resources Ltd., which owned 100% of the Savannah underground mine, entered into voluntary administration but expected that the mine would continue to operate in the short term (table 2; Department of Industry, Science and Resources, 2024, table 31; FTI Consulting (Australia) Pty. Ltd., 2023; Wyloo Pty. Ltd., 2023).

Rare Earths.—In 2023, the country was estimated to have produced 29,000 t of rare-earth-oxide equivalent, which was a record production and was an estimated 81% increase compared with that in 2022. In 2023, Lynas Rare Earth Ltd. continued the development and construction of the capacity expansion project at the Mount Weld Mine and concentration plant in Western Australia. The expansion was expected to increase throughput capacity to 1.3 Mt/yr from 300,000 metric tons per year (t/yr). The rare-earth concentrates from Mount Weld were export to the company's processing plant in Malaysia. The Mount Weld expansion project would enable the Malaysia plant to increase its planned production to 12,000 t/yr of neodymium-praseodymium equivalent oxide by 2024 from the existing 7,000 t/yr. In fiscal year 2023, which began July 1, 2023, and ended June 30, 2023, the mine produced record volumes of concentrate. As of June 30, 2023, proved and probable reserves at the Mount Weld Mine were reported to be 17.7 Mt containing 8.0% total rare-earth-oxide equivalent using a 4.0% cutoff grade (table 1; Lynas Rare Earths Ltd., 2022, p. 10; 2023a, p. 2, 4, 14, 67, 106).

In December 2023, Lynas Rare Earths commissioned the Kalgoorlie Rare Earths Processing Facility in Kalgoorlie-Boulder, Western Australia, and began the first processing feed from the Mount Weld Mine. Lynas Rare Earths expected that mixed rare-earth carbonate produced at the Kalgoorlie Rare Earth Processing Facility would be processed at the Lynas Malaysia plant and at a proposed rare-earth-processing facility in the United States (Lynas Rare Earths Ltd., 2023a, p. 15, 16, 67; 2023b).

In 2023, Iluka Resources Ltd. continued the construction of the integrated Eneabba rare-earth-oxide facility. The facility was expected to have a nameplate capacity between 17,500 t/yr to 23,000 t/yr of rare-earth oxide. Production was expected to include dysprosium, neodymium, praseodymium, and terbium. Iluka expected the facility to begin production in 2026. In August, the company announced the commencement of a feasibility study for a rare-earth-oxide metallization facility, which was a value-added processing step to produce the precursor to rare-earth permanent magnets (Iluka Resources Ltd., 2023, p. 39; 2024, p. 9, 17, 25).

Vanadium.—Australia Vanadium Ltd. continued the development of the Australian Vanadium project in Western Australia. The project included a mine site and concentrator, located south of Meekatharra in Western Australia, and a vanadium electrolyte manufacturing facility adjacent to Geraldton. The company planned to transport concentrate from the mine site to the vanadium electrolyte manufacturing facility to produce vanadium pentoxide. In December, the company announced that construction of the vanadium electrolyte manufacturing facility had been completed. The company planned to start mine construction in 2024 and begin mine production in 2025. Proved and probable reserves at the Australia Vanadium project deposit were reported to be 30.9 Mt containing 1.1% total vanadium pentoxide using a 0.7% cutoff grade (Australia Vanadium Ltd, 2023a, p. 7, 11, 23; 2023b).

Industrial Minerals

Graphite.—In 2023, Renascor Resources Ltd. continued exploration and development of its 100%-owned Siviour graphite project and the development of a Battery Anode Material (BAM) facility. The Siviour deposit, located in South Australia, west of Arno Bay, had proven reserves of 16.8 Mt of ore grading 8.2% total graphitic content. The BAM facility, which was expected to be about 20 kilometers (km) north of Port Adelaide, planned to process graphite concentrate from the Siviour project to produce purified spherical graphite (PSG); Renascor sought to be a vertically integrated producer of PSG. In August 2023, the company completed an optimized BAM study. The study estimated the Siviour project to have a 40-year mine life. The study also assumed a two-staged development startup of operations at Siviour: 75,000 t/yr of graphite concentrate in stage one and 150,000 t/yr in stage two. The study also assumed a two-staged development startup of operations at Siviour (75,000 t/yr of graphite concentrate, followed by 150,000 t/yr) and a two-staged operation startup of downstream processing (50,000 t/yr of PSG, followed by 100,000 t/yr). In July, the company announced that a drilling campaign confirmed an extension of the Siviour deposit (Renascor Resources Ltd., 2023, p. 6, 7, 18, 19, 57).

Lithium.—In 2023, the country produced 3.40 Mt of spodumene ore and concentrate, which was an increase of 20% compared with the production of 2.83 Mt in 2022. Production of lithium hydroxide totaled about 4,970 t in 2023, which was an increase of 66% compared with production in 2022. During the year, export volumes of spodumene ore and concentrate increased by 32% to 3.57 Mt; the value of spodumene ore and concentrate exports increased by 55% to AUD19 billion ($12 billion). The country exported 1,397 t of lithium hydroxide valued at AUD43 million ($28 million) in 2023 (table 1; Department of Industry, Science and Resources, 2024, table 30).

In 2023, Pilbara Minerals Ltd. produced 631,045 t of spodumene concentrate, which was an increase of 22% compared with 517,923 t in 2022. Pilbara also produced 18 t of tantalite concentrate as byproduct at the Pilgan plant compared with 19 t in 2022. Pilbara completed construction of the P680 Expansion project at the Pilgangoora Mine in the second half of 2023. The project's rampup to full capacity by yearend increased production capacity at the Pilgan plant by 100,000 t/yr and increased the total capacity of the Pilgangoora Mine to 680,000 t/yr of spodumene concentrate. At yearend, the company continued construction on the P1000 Expansion project, which was expected to increase the total capacity of the Pilgangoora operations to 1 Mt/yr of spodumene concentrate. The project was planned to produce ore in the first quarter of 2025 and produce at full capacity by the third quarter of 2025. The company also expected the outcome of the P2000 project's feasibility study by yearend 2025; the project planned to increase the total capacity of the Pilgangoora Mine to 2 Mt/yr of spodumene concentrate. The slight increase in tantalite production was attributed to increased processing volumes through the plant and improved recovery rates (Pilbara Minerals Ltd., 2022, p. 16; 2023, p. 30; 2024, p. 19, 22, 23).

In 2023, Covalent Lithium Ltd., a joint venture between Wesfarmers Ltd. (50% equity interest) and Sociedad Química y Minera de Chile S.A. (50% equity interest), continued the development of the Covalent lithium project located in Western Australia. The project included a mine and concentrator at Mount Holland and a lithium hydroxide refinery at Kwinana. Lithium ore was first mined at Mount Holland in December 2022 and first crushed in May 2023. Production of spodumene concentrate from the crushed ore began in the second half of 2023. The Mount Holland Mine and concentrator were expected to produce 380,000 t/yr of spodumene concentrate. The majority of spodumene concentrate was expected to be refined at the Kwinana refinery, which was under construction at yearend. The refinery, which was planned to begin operation in the first half of 2025, was expected to produce 50,000 t/yr of lithium hydroxide when operational. During the year, the company worked to complete a feasibility study to double the capacity at the Mount Holland Mine and concentrator (Wesfarmers Ltd., 2023, p. 37, 39, 40, 83, 167; Department of Energy, Mines, Industry Regulation and Safety, 2024).

Mineral Fuels

Coal.—In 2023, Queensland remained Australia's leading State in the production of coal (all types) [accounting for 56% (estimated) of the coal production in the country], followed by New South Wales (43%) and Western Australia [1% (estimated)]. In 2023, an estimated 25.1 Mt of coal was produced at the Loy Yang Mine; 17.8 Mt at the Moorlarben Mine, 14.2 Mt at the Mount Arthur Mine, 14.1 Mt at the Yallourn Mine, and 12.8 Mt at the Rolleston Mine (table 2; Department of Industry, Science and Resources, 2024, table 24; Mining Technology, 2024).

In 2023, Australia's exports of seaborne coal accounted for 26% of total global seaborne coal exports and ranked second behind Indonesia. Total exports of coal increased by 4% to 353 Mt from 339 Mt in 2022. In early 2023, China's embargo on Australia's coal exports ended. The embargo had been in place since 2020. In 2023, Australia's export destinations for coal included Japan (which accounted for 30% of the country's exports), China (16%), and India (12%) (table 1; Cossins-Smith, 2023; Department of Industry, Science and Resources, 2024, table 24; Roussanoglou, 2024).

Reserves and Resources

Under Australia's National Classification System for Identified Mineral Resources, Economic Demonstrated Resources (EDR) is used as a collective term for mineral resources the Government has determined to be economical. Notable EDR increases in 2023 compared with 2022 included that of diamond, by 32%; platinum group metals, by 30%; graphite, by 27%; lithium, by 20%; niobium and vanadium, by 18% each; manganese ore, by 16%; high-purity alumina ore, by 14%; and molybdenum, rare earths, and tantalum, by 10% each. Accessible Economic Demonstrated Reserves (AEDR)[2] for select minerals at the end of 2023 are shown in table 5 (Geoscience Australia, 2024, table 4).

In 2023, expenditure on exploration increased by 6% to AUD5.3 billion ($3.5 billion). Non-petroleum mineral exploration accounted for 80% of total exploration expenditure, whereas onshore petroleum exploration accounted for 12% and offshore petroleum exploration, 7%. Exploration expenditure for non-petroleum minerals increased by 5%. Exploration expenditure for onshore petroleum increased by 12%, and offshore petroleum, by 5%. In 2023, for the exploration of minerals other than petroleum, existing deposits accounted for 69% of the exploration expenditures, and new deposits accounted for the remaining 31%. A total of 10,819 km was drilled for the exploration of minerals other than petroleum; this was a 7% decrease compared with the total depth drilled in 2022 (Australian Bureau of Statistics, 2024c, d).

Gold deposits represented the largest share of exploration expenditures among minerals other than petroleum in 2023, accounting for 29% of the total. Other minerals, which included construction sand and gravel, crushed stone, garnet, staurolite, tin, and tungsten (scheelite and wolframite), represented 18% of total exploration expenditures; copper and iron ore deposits, 16% each; coal (undifferentiated) and nickel-cobalt deposits, 8% each; lead-silver-zinc and mineral sands deposits, 2% each; uranium, 1%; and diamond, 0.1%. Exploration expenditures on uranium increased by 149% in 2023; diamonds, by 67%; other minerals, by 61%; coal, by 34%; copper, by 16%; and nickel-cobalt, by 3%. Exploration expenditures decreased for gold deposits by 19% in 2023; iron ore, by 3%; and lead-silver-zinc, by 1% (Australian Bureau of Statistics, 2024e).

Outlook

According to the International Monetary Fund, the growth rate of Australia's real GDP is expected to be 1.2% in 2024; 2.1% in 2025; and 2.2% in 2026. The country is expected to continue to be a major mineral-exporting country into the future. The country may become a major exporter of processed critical materials in the near future as investment in mining and mineral processing remains a public and private priority and continues to increase. Global demand for battery materials such as cobalt, graphite, lithium, nickel, and rare earths is likely to increase in the coming years. The country is well positioned to expand production of these minerals and metals through a number of projects that are currently in development or under construction. If the Eneabba rare-earth-oxide facility and the Kalgoorlie Rare Earths Processing Facility can be developed as planned, the country will be able to abate the processing bottlenecks of the rare earths supply chain, develop downstream value-added projects, and incentivize further development of the country's rare-earth resources. Current and potential challenges to the country's expansion of critical mineral supply capacities include volatile commodity prices, trade tensions, and global supply gluts that could run counter to Australia's near-term capital investment in the mineral resource sector (International Monetary Fund, 2024).

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[2]Accessible EDR was defined by Geoscience Australia as EDR that excludes resources subject to legal or land-use restriction.

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TABLE 1

AUSTRALIA: PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS						
Aluminum:						
Bauxite	thousand metric tons	107,423	103,627	103,266	100,478	99,058
Alumina	do.	20,239	20,837	20,624	19,576	18,802
Metal, primary	do.	1,570	1,583	1,559	1,510	1,555
Antimony, mine, Sb content[3]		2,032	3,903	3,380	2,292	1,860
Cadmium, refinery, primary		218	377	387	800 r, e	900 e
Cobalt, Co content:						
Mine, laterite ore, Ni concentrate, and Zn concentrate[4]		5,746 r	5,631 r	5,232	5,794 r	5,217
Refinery, metal powder and oxide-hydroxide		3,700	3,300	2,800	3,300	2,400
Copper:						
Mine:						
Concentrate, Cu content	thousand metric tons	900	843	778	799	763
Solvent extraction[5]	do.	25	25	23	27	15
Smelter, primary	do.	401	399	382	390	397
Refinery, primary:						
Electrowon	do.	25	25	23	27	15
Other	do.	402	405	383	402	427
Ferroalloys:[6]						
Ferromanganese		114,000	84,000	90,000 r	123,000 r	60,000
Silicomanganese		95,000	101,000	99,000	94,000	81,000
Gold:						
Mine, Au content	kilograms	325,572 r	327,952	307,577	307,787 r	296,053
Refinery, primary and secondary	do.	323,708	303,914	267,431	258,012	250,197
Iron ore, mine:						
Gross weight	thousand metric tons	917,046	918,063	922,159	944,966	952,510
Fe content	do.	567,345	567,789	570,161	584,413	589,029
Iron and steel:						
Pig iron	do.	3,664	3,723	3,751	3,652	3,461
Raw steel	do.	5,493	5,489	5,822	5,667	5,459
Lead:						
Mine, Pb content		500,985	494,271	485,487	437,825 r	472,242
Refinery:						
Primary		89,999 r	133,879	137,903 r	143,978 r	186,458
Secondary, excluding remelt[e]		35,000	35,000	29,000	23,000	35,000
Manganese, mine, ore:						
Gross weight	thousand metric tons	7,545	7,976	7,900	7,169	6,926
Mn content	do.	3,177	3,331	3,252	3,044	2,856
Nickel:						
Mine, Ni content	do.	159	169	151	155	149
Smelter, matte[7]	do.	17	21	29	34	44
Refinery[8]		123,370 r	115,800	98,970	96,500	92,300
Platinum-group metals, mine, elemental content:[e, 9]						
Palladium	kilograms	380	410	370	380	400
Platinum	do.	110	110	100	110	110
Total	do.	490	520	470	490	510
Rare earths, mineral concentrate, rare-earth-oxide equivalent[e]		18,000 r	20,000	23,000 r	16,000	29,000
Silicon, metal[e]		49,000	43,000	51,000	49,000	40,000
Silver:						
Mine, Ag content		1,325	1,337	1,330	1,169	1,033
Refinery		928	936	931	818	723
Tantalum, mine, tantalite concentrate, Ta content	kilograms	70,000 r	42,000	57,000 r	50,000 r	43,000
Tin, mine, Sn content		7,738	8,118	8,772	9,001	9,852
Titanium, mineral concentrates:[e]						
Ilmenite and leucoxene	thousand metric tons	1,000	1,100	600	700	630
Rutile	do.	200	200	200	200	200

See footnotes at end of table.

TABLE 1—Continued

AUSTRALIA: PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS—Continued						
Tungsten, mine, concentrate, W content[e]		20	100	130	230 [r]	432
Zinc:						
Mine, Zn content	thousand metric tons	1,337	1,315	1,319 [r]	1,237 [r]	1,098
Smelter, primary	do.	436	447	433	378	430
Zirconium, mineral concentrates[e]	do.	470	400	500	500	410
INDUSTRIAL MINERALS						
Abrasives, garnet, natural		352,978	296,051	321,340	387,894	324,764
Barite		1,982	--	1,127	3,922	4,300 [e]
Cement, hydraulic[e]	thousand metric tons	9,700	9,600	9,800	10,000	10,000
Clay:[e]						
Bentonite		49,500	43,000	47,000	50,000 [r]	47,000
Fuller's earth, attapulgite		8,000	10,000	12,000	12,000	12,000
Kaolin		149,000	170,000	190,000 [r]	190,000 [r]	190,000
Diamond, natural:						
Gem	thousand carats	260 [e]	219 [e]	--	--	--
Industrial	do.	12,700 [e]	10,700 [e]	--	--	--
Total	do.	13,000 [e]	10,900 [e]	--	--	--
Diatomite[e]		11,000	11,000	11,000	11,000	11,000
Feldspar, includes nepheline syenite		50 [r]	1,241 [r]	52 [r]	945 [r]	1,000 [e]
Gypsum, mine	thousand metric tons	4,071 [r]	3,676 [r]	3,422 [r]	4,186 [r]	4,200
Lime[e]	do.	1,980	1,980	2,000	1,990	1,970
Lithium:						
Spodumene, concentrate		1,588,263	1,477,240	1,966,744	2,825,375 [r]	3,398,261
Refinery, lithium hydroxide		--	--	--	2,987 [r]	4,968
Magnesite[e, 10]		320,000	850,000	890,000	500,000 [r]	400,000
Nitrogen, ammonia, N content[e]		1,500,000	1,600,000	1,700,000	1,500,000	1,300,000
Perlite[e]		1,700	3,000	3,500	3,000 [r]	3,000
Phosphate rock:[e]						
Gross weight		2,200,000	2,500,000	2,600,000 [r]	2,500,000	2,500,000
P_2O_5 content		480,000	680,000	690,000 [r]	700,000 [r]	700,000
Salt	thousand metric tons	11,474	11,542	12,214	11,681	11,819
Talc and related materials, chlorite, pyrophillite, steatite, talc[e]		140,000 [r]	110,000 [r]	90,000 [r]	110,000 [r]	110,000
MINERAL FUELS AND RELATED MATERIALS						
Coal:[e]						
Anthracite	thousand metric tons	9,500 [r]	7,900 [r]	8,300 [r]	6,300 [r]	2,100
Bituminous	do.	292,000 [r]	273,000 [r]	268,000 [r]	262,000 [r]	257,000
Lignite	do.	51,700 [r]	46,900 [r]	49,900 [r]	46,900 [r]	47,400
Metallurgical	do.	226,000 [r]	208,000 [r]	205,000 [r]	196,000 [r]	203,000
Subbituminous	do.	31,600 [r]	28,800 [r]	29,600 [r]	27,700 [r]	30,300
Coke, metallurgical[e]	do.	2,770 [r]	2,780 [r]	2,930 [r]	2,680 [r]	2,610
Liquefied natural gas	do.	73,800 [r]	74,800 [r]	77,900 [r]	71,800 [r]	77,600
Natural gas, marketable	million cubic meters	154,485	154,107	156,463	163,112	160,873
Petroleum:						
Crude, including condensate	thousand 42-gallon barrels	131,664	128,570	122,211	113,512 [r]	100,397
Refinery products	do.	175,991 [r]	146,862 [r]	116,996 [r]	93,577 [r]	92,156
Uranium, mine, U content		6,552 [r]	6,168 [r]	3,794 [r]	4,560	4,674

See footnotes at end of table.

TABLE 1—Continued

AUSTRALIA: PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons, gross weight, unless otherwise specified)

[e]Estimated. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through January 21, 2025. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]In addition to the commodities listed, Australia produced dimension stone, dolomite, jade, kyanite, opal, sapphire, silica, sulfuric acid, secondary tin metal, and vanadium, but available information was inadequate to make reliable estimates of ouput.

[3]Antimony content of antimony ore and concentrate, lead concentrate, and lead-zinc concentrate.

[4]Cobalt content of lateritic nickel ore and nickel concentrate reported by the Government of Western Australia.

[5]The copper content of solvent extraction output at the mine level is the same as electrowon refinery output because copper produced in the solvent extraction and electrowinning process is typically reported only at the refinery level.

[6]Reported by the International Manganese Institute.

[7]Figures exclude toll-refined material.

[8]Products with a nickel content of 99% or more. Includes electrolytic nickel, pellets, briquettes and powder.

[9]Platinum-group metals (PGMs) recovered from nickel ore that is processed domestically. PGM in exported nickel ore are extracted in the importing countries, such as Japan, and are thought to be included in the production figures for those countries.

[10]Estimates are based on reported data for the calendar year by the Deptartment of State Development, South Australia and for the fiscal year by the Queensland Department of Natural Resources and Mines.

TABLE 2
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Aluminum:			
Bauxite	Amrun Mine (Rio Tinto Ltd., 100%)	South of Weipa, QLD	22,800
Do.	Andoom and East Weipa Mines (Rio Tinto Ltd., 100%)	Weipa, QLD	12,700
Do.	Boddington-Worsley open pit bauxite mine {Worsley Alumina Pty. Ltd., manager [South32 Ltd., 86%; Japan Alumina Associates (Australia) Pty. Ltd., 10%; Sojitz Alumina Pty. Ltd., 4%]}	14 km south of Boddington, WA	19,000
Do.	Gove open pit bauxite mine [Pacific Aluminium Pty. Ltd. (Rio Tinto Ltd., 100%)]	15 km southeast of Nhulunbuy, NT	13,000
Do.	Huntly open pit bauxite mine [Alcoa of Australia Ltd. (Alcoa Corp., 60%, and Alumina Ltd., 40%)]	80 km south of Perth, WA	26,000
Do.	Willowdale open pit bauxite mine [Alcoa of Australia Ltd. (Alcoa Corp., 60%, and Alumina Ltd., 40%)]	130 km south of Perth, WA	10,000
Alumina, refinery	Kwinana alumina refinery [Alcoa of Australia Ltd. (Alcoa Corp., 60%, and Alumina Ltd., 40%)]	Kwinana, WA	2,200
Do.	Pinjarra alumina refinery [Alcoa of Australia Ltd. (Alcoa Corp., 60%, and Alumina Ltd., 40%)]	Pinjarra, WA	4,200
Do.	Queensland alumina refinery [Queensland Alumina Ltd., operator (Rio Tinto Ltd., 80%, and United Company RUSAL, 20%)]	Gladstone Region, QLD	3,950
Do.	Wagerup alumina refinery [Alcoa of Australia Ltd. (Alcoa Corp., 60%, and Alumina Ltd., 40%)]	Wagerup, WA	2,850
Do.	Worsley alumina refinery {Worsley Alumina Pty. Ltd., manager [South32 Ltd., 86%; Japan Alumina Associates (Australia) Pty. Ltd., 10%; Sojitz Alumina Pty. Ltd., 4%]}	Woresly, 20 km northwest of Collie, WA	4,600
Do.	Yarwun alumina refinery (Rio Tinto Ltd., 100%)	Gladstone Region, QLD	3,200
Metal, smelter	Bell Bay aluminum smelter [Pacific Aluminium Pty. Ltd. (Rio Tinto Ltd., 100%)]	Bell Bay, TAS	195
Do.	Boyne Island aluminum smelter [Boyne Smelters Ltd., operator (Rio Tinto Alcan, 59.39%; YKK Aluminum, 9.5%; UACJ Australia, 9.43%; Southern Cross Aluminum, 7.57%; Ryowa Development, 5.27%; Ryowa Development II, 6.34%; Sumitomo Chemical Co. Ltd., 2.5%)]	Boyne Island, QLD	584
Do.	Portland aluminum smelter [Alcoa of Australia Ltd., 55%, manager; China International Trust Investment Co. (China state-owned company), 22.5%; Marubeni Australia Pty. Ltd., 22.5%]	Portland, VIC	358
Do.	Tomago aluminum smelter {Tomago Aluminium Co. Pty. Ltd., operator [Pacific Aluminium Pty. Ltd. (Rio Tinto Ltd., 100%), 51.55%; Gove Aluminium Finance Ltd., 36.05%; Hydro Aluminium, 12.40%]}	Tomago, NSW	590
Antimony	Costerfield underground antimony-gold mine [AGD Mining, operator (Mandalay Resources Ltd., 100%)]	50 km southeast of Bendigo, VIC	4
Do.	Hillgrove Mine[3] (Red River Resources Ltd. 100%)	25 km east of Armidale, NSW	10
Coal	Blackwater open pit coal mine (includes South Blackwater deposit) [BHP Mitsubishi Alliance, manager (BHP Group Ltd., 50%, and Mitsubishi Corp., 50%)]	195 km west of Rockhampton, QLD	14,000
Do.	Bulga open pit coal mine [Oakbridge Pty. Ltd., manager (Glencore Plc., 68.25%; Nippon Steel Australia Pty. Ltd., 12.5%; Toyota Tsusho Mining (Australia) Pty. Ltd., 4.38%; private, 13.3%)]	16 km southwest of Singleton, NSW	10,000
Do.	Clermont coal mine [GS Coal Pty. Ltd. (Glencore Plc., 37.13%; Sumitomo Corp., 37.13%; J-Power Australia Pty. Ltd., 22.24%; JCD Australia Pty. Ltd., 3.5%)]	12 km north of Clermont, QLD	12,000
Do.	Goonyella Riverside open pit coal mines [BHP Mitsubishi Alliance, manager (BHP Group Ltd., 50%, and Mitsubishi Corp., 50%)]	140 km southwest of Mackay, QLD	19,000
Do.	Hunter Valley Operations (includes Carrington Chestnut, Howick, Hunter Valley No. 1, Lemington, and Riverview open pit coal mines) (Rio Tinto Ltd., 80%, and others, 20%)	10 km west and 25 km north of Singleton, NSW	15,000
Do.	Loy Yang open pit coal mine (AGL Energy Ltd., 100%)	165 km east of Melbourne, VIC	21,000

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Coal—Continued		Moolarben Mine [Yancoal Australia Ltd. (Yankuang Energy Group Co. Ltd., 62.26%, and others, 37.74%)]	Ulan, New South Wales	18,400
Do.		Mount Arthur open pit coal mine (BHP Group Ltd., 100%)	5 km southwest of Muswellbrook, NSW	15,000
Do.		Mount Pleasant Mine (Mach Energy Australia Pty. Ltd., 100%)	3 km south of Muswellbrook, NSW	10,500
Do.		Mount Thorley open pit coal mine [Yancoal Australia Ltd. (Yanzhou Coal Mining Co., 62.26%; Cinda International Holdings Ltd., 15.89%; others, 21.85%), 80%, and POSCO Australia Pty. Ltd., 20%]	14 km southwest of Singleton, NSW	12,000
Do.		Newlands-Collinsville-Abbot Point open pit coal mine (Glencore Plc., 55%; Itochu Corp., 35%; Sumitomo Corp., 10%)	130 km west of Mackay, QLD	15,000
Do.		Rolleston open pit coal mine (Glencore Plc., 75%; Itochu Corp., 12.5%; Sumitomo Corp., 12.5%)	90 km south-southeast of Emerald, QLD	13,500
Do.		Ulan underground coal mine (Glencore Plc., 90%, and Mitsubishi Corp., 10%)	45 km northwest of Mudgee, NSW	10,000
Do.		Yallourn open pit lignite mine (EnergyAustralia Pty. Ltd., 100%)	140 km southeast of Melbourne, VIC	14,100
Cobalt, mine, Co content	metric tons	Murrin Murrin open pit nickel-cobalt mine [Murrin Murrin Operations Pty. Ltd. (Glencore, 100%)]	60 km east of Leonora, WA	2,000
Do.	do.	Radio Hill underground nickel-cobalt mine and processing plant[3] (Artemis Resources Ltd., 100%)	35 km south of Karratha, WA	200
Do.	do.	Nova-Bollinger mine (IGO Ltd., 100%)	160 km east-northeast of Norseman, WA	1,100
Do.	do.	Ravensthorpe open pit mine (First Quantum Minerals Ltd., 100%)	155 km west of Esperance, WA	1,400
Do.	do.	Savannah underground mine (Panoramic Resources Ltd., 100%)	120 km north of Halls Creek, WA	250
Copper:				
Mine production, Cu content		Boddington open pit/underground gold mine (Newmont Mining Corp., 100%)	130 km southeast of Perth, WA	35
Do.		Cadia Valley mining complex (includes Cadia East, Cadia Hill, and Ridgeway deposits) (Newcrest Mining Ltd., 100%)	25 km south-southwest of Orange, NSW	90
Do.		Carrapateena Mine (Oz Mineral Ltd., 100%)	160 km north of Port Augusta, SA	65
Do.		DeGrussa underground gold-copper mine (Sandfire Resources NL, 100%)	150 km north of Meekatharra, WA	300
Do.		Eloise underground copper mine (FMR Investments Pty. Ltd., 100%)	60 km southeast of Cloncurry, QLD	70
Do.		Ernest Henry open pit/underground copper-gold mine (Glencore Plc., 100%)	35 km northeast of Cloncurry, QLD	115
Do.		Mount Gordon open pit copper (solvent extraction-electrowinning) mine (Aditya Birla Minerals Ltd., 100%)	120 km north of Mount Isa, QLD	50
Do.		Mount Isa underground copper-lead-zinc-silver mine (includes Enterprise, George Fisher, and Lady Loretta Mines) (Glencore Plc., 100%)	Mount Isa, QLD	190
Do.		Mount Lyell underground copper-gold mine [Copper Mines of Tasmania Pty. Ltd. (Vedanta Ltd., 100%)]	2 km northeast of Queenstown, TAS	35
Do.		Northparkes open pit/underground copper-gold mine (China Molybdenum Co. Ltd., 80%; Sumitomo Metal Mining Oceania Pty. Ltd., 13.3%; SC Mineral Resources Pty. Ltd., 6.7%)	30 km northwest of Parkes, NSW	90
Do.		Olympic Dam underground copper-silver-gold-uranium mine [BHP Olympic Dam Corp. Pty. Ltd., operator (BHP Group Ltd., 100%)]	Roxby Downs, 80 km north of Woomera, SA	235
Do.		Prominent Hill open pit/underground copper-gold mine (BHP Group Ltd., 100%)	650 km northwest of Adelaide, SA	140
Smelter		Mount Isa copper smelter (Glencore Plc., 100%)	Mount Isa, QLD	250
Do.		Olympic Dam copper smelter [Olympic Dam Corp. Pty. Ltd., operator (BHP Group Ltd., 100%)]	Roxby Downs, 80 km north of Woomera, SA	70
Refinery		Olympic Dam copper refinery [Olympic Dam Corp. Pty. Ltd., operator (BHP Group Ltd., 100%)]	do.	235
Do.		Townsville copper refinery (Glencore Plc., 100%)	Townsville, QLD	300
Diatomite		Barraba open pit diatomite mine (Australia Diatomite Mining Pty. Ltd., 100%)	85 km north-northwest of Tamworth, NSW	25

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Feldspar		Broken Hill open pit feldspar mine (includes Bakers, Lady Beryl, and Spar Ridge deposits) (Unimin Australia Ltd., 100%)	42 km southwest of Broken Hill, NSW	15
Garnet		Port Gregory open pit industrial garnet mine (GMA Garnet Pty. Ltd., 100%)	100 km north of Geraldton, WA	400
Gold:				
Mine, Au content	kilograms	Agnew/Lawlers open pit/underground gold mine (Gold Fields Ltd., 100%)	23 km west of Leinster, WA	8,600
Do.	do.	Boddington open pit/underground gold mine (Newmont Mining Corp., 100%)	130 km southeast of Perth, WA	25,000
Do.	do.	Bronzewing underground gold mine (includes Cockburn, Corboys, Mount McClure, Mount Joel, Success, Venus deposits) (Audax Resources Ltd., 100%)	65 km northeast of Leinster, WA	9,000
Do.	do.	Burnside open pit mines (includes Brocks Creek, Fountain Head, North Point, Princess Louise, Rising Tide, Union Reefs, Zapopan deposits) (Crocodile Gold Corp., 100%)	Pine Creek, NT	6,500
Do.	do.	Cadia Valley mining complex (includes Cadia East, Cadia Hill, and Ridgeway Mines) (Newcrest Mining Ltd., 100%)	25 km south-southwest of Orange, NSW	18,600
Do.	do.	Fosterville open pit mine (Agnico Eagle Mines Ltd., 100%)	130 km north of Melbourne, VIC	15,900
Do.	do.	Garden Well gold mine (Regis Resources Ltd., 100%)	350 km northeast of Kalgoorlie, WA	5,200
Do.	do.	Granny Smith open pit gold mine (includes Wallaby deposit) (Gold Fields Ltd., 100%)	20 km south of Laverton, WA	8,700
Do.	do.	Gruyere Mine (Gold Fields Ltd., 50%, and Gold Roads Resources Ltd., 50%)	160 km east-northeast of Laverton, WA	9,000
Do.	do.	Jundee-Nimary open pit/underground gold mine (Newmont Mining Corp., 100%)	45 km northeast of Wiluna, WA	12,000
Do.	do.	Kalgoorlie open pit/underground gold mine [Kalgoorlie Consolidated Gold Mines Pty. Ltd., operator (Ardea Resources Ltd., 100%)]	Southeast corner of the Kalgoorlie Boulder Township, WA	20,000
Do.	do.	Kanowna Belle underground gold mine (Barrick Gold Corp., 100%)	18 km northeast of Kalgoorlie, WA	7,000
Do.	do.	Mount Magnet open pit/underground gold mine (includes Hill 50 and Star deposits) (Ramelins Resources Ltd., 100%)	Mount Magnet, WA	8,500
Do.	do.	Kalgoorlie Super Pit Mine (Northern Star Resources Ltd., 100%)	Fimiston, WA	15,200
Do.	do.	Paddington open pit/underground gold operation [Norton Gold Fields Ltd. (Zijin Mining Group Co. Ltd., 100%)]	35 km north of Kalgoorlie, WA	5,000
Do.	do.	Pajingo underground gold mine (includes Vera-Nancy deposit) (Evolution Mining Ltd., 100%)	60 km south-southeast of Charters Towers, QLD	6,400
Do.	do.	Plutonic open pit/underground gold mine (Barrick Gold Corp., 100%)	180 km northeast of Meekatharra, WA	8,000
Do.	do.	Sunrise Dam open pit mine gold (includes Cleo deposit) (AngloGold Ashanti Ltd., 100%)	55 km south of Laverton, WA	15,000
Do.	do.	Tanami open pit gold mine (Newmont Gold Corp., 100%)	650 km northwest of Alice Springs, NT	15,100
Do.	do.	Telfer copper-gold mine (Newcrest Mining Ltd., 100%)	400 km east-southeast of Port Hedland, WA	15,000
Do.	do.	Trident gold mine (Alacer Gold Corp., 100%)	Higginsville, WA	5,000
Do.	do.	Tropicana gold mine (AngloGold Ashanti Australia Pty. Ltd., 70%, and Independence Group NL, 30%)	330 km northeast of Kalgoorlie, WA	11,800
Smelter	do.	Gidji Roaster gold smelter (Kalgoorlie Consolidated Gold Mines Pty. Ltd., 100%)	Kalgoorlie, WA	24,300
Refinery	do.	Perth Mint Refinery [Gold Corp. (Government of Western Australia, 100%)]	Newburn, WA	400,000
Gypsum		Dredging of gypsum from surface of Lake MacLeod (Rio Tinto Ltd., 68.4%)	Lake MacLeod, WA	900
Do.		Lake MacDonnell open pit gypsum mine (Gypsum Resources Australia Pty. Ltd., 100%)	Point Thevenard, SA	1,400

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Iron ore	Area C Mine (BHP Group Ltd., 85%; ITOCHU Minerals & Energy of Australia Pty. Ltd., 8%; Mitsui Iron Ore Corp. Pty. Ltd., 7%)	180 km east of Port Hedland, Pilbara Region, WA	42,000
Do.	Cloudbreak iron ore mine (includes Chichester Range, Christmas Creek, Flinders, Mount Lewin, Mount Nicholas, and WhiteKnight deposits) (Fortescue Metals Group Ltd., 100%)	Chichester Ranges, East Pilbara, WA	55,000
Do.	Hamersley operations (includes Brockman 2, Brockman 4, Gudai-Darri, Marandoo, Mount Tom Price, Nammuldi, Paraburdoo, Silvergrass, Western Turner Syncline, and Yandicoogina open pit iron ore mines) [Hamersley Iron Pty. Ltd. (Rio Tinto Ltd., 100%)]	30 to 85 km northeast, northwest, and south of Tom Price, WA	200,000
Do.	Hope Downs 1 Mine [Hope Downs Iron Ore Pty. Ltd. (Hancock Prospecting Pty. Ltd., 100%), 50%, and Rio Tinto Ltd., 50%]	75 km northwest of Newman, Pilbara region, WA	49,000
Do.	Hope Downs 4 Mine [Hope Downs Iron Ore Pty. Ltd. (Hancock Prospecting Pty. Ltd., 100%), 50%, and Rio Tinto Ltd., 50%]	Pilbara region, WA	15,000
Do.	Jimblebar open pit iron ore mine (Includes ore from Wheelarra JV deposit) [BHP Iron Ore (Jimblebar) Pty. Ltd. (BHP Group Ltd., 85%; ITOCHU Minerals and Energy of Australia, 8%; Mitsui Iron Ore Exploration and Mining Pty. Ltd., 7%)]	40 km east of Newman, WA	20,000
Do.	Mount Newman open pit iron ore mine (BHP Group Ltd., 85%; Mitsui-ITOCHU Iron Pty. Ltd., 10%; ITOCHU Minerals & Energy of Australia Pty. Ltd., 5%)	Within 13 km of Newman, Pilbara region, WA	42,000
Do.	Pannawonica (includes Mesa A and J deposits) open pit iron ore mine [Robe River Iron Associates, manager (Rio Tinto Ltd., 53%; Mitsui & Co. Ltd., 33%; Nippon Steel Corp., 14%)]	130 km south-southwest of Dampier, Pilbara region, WA	25,500
Do.	Roy Hill Mine (Hancock Prospecting Pty. Ltd., 70%; Marubeni Corp., 15%; POSCO, 12.5%; China Steel Corp., 2.5%)	340 km southeast of Port Hedland	55,000
Do.	West Angelas open pit iron ore mine [Robe River Iron Associates, manager (Rio Tinto Ltd., 53%; Mitsui & Co. Ltd., 33%; Nippon Steel Corp., 14%)]	110 km west of Newman, Pilbara region, WA	34,600
Iron and steel:			
Pig iron	Hismelt pig iron plant [Hismelt Corp. Pty. Ltd. (Rio Tinto Ltd., 60%; Nucor Corp., 25%; Mitsubishi Corp., 10%; Shougang Corp., 5%]	Kwinana, WA	800
Raw steel	Laverton Steel Mill (Arrium Steel Ltd., 100%)	Laverton, Melbourne, VIC	700
Do.	Port Kembla steelworks (Blue Scope Steel Ltd., 100%)	Port Kembla, NSW	2,600
Do.	Smorgon Steel Group Ltd.	Laverton, Melbourne, VIC	700
Do.	do.	Waratch, NSW	285
Do.	Sydney Steel Mill (Arrium Steel Ltd., 100%)	Sydney, NSW	600
Do.	Whyalla steelworks (Arrium Steel Ltd., 100%)	Whyalla, SA	1,200
Lead:			
Mine, Pb content	Broken Hill underground silver-zinc-lead mine (Shenzhen Zhongjin Lingnan Nonfemet Co. Ltd., 50.1%, and Perilya Ltd., 49.9%)	Broken Hill, NSW	90
Do.	Cannington underground silver-lead-zinc mine (South32 Ltd., 100%)	85 km southwest of McKinlay, QLD	265
Do.	Century open pit zinc-silver-lead mine (MMG Ltd., 100%)	250 km north of Mount Isa, QLD	90
Do.	McArthur River open pit mine [McArthur River Mining Pty. Ltd., operator (Glencore Plc., 100%)]	60 km southwest of Borroloola, NT	170
Do.	Mount Isa underground copper-lead-zinc-silver mine (includes Enterprise, George Fisher, Hilton, and Lady Loretta deposits) (Glencore Plc., 100%)	Mount Isa, QLD	150
Smelter	Mount Isa smelter (Glencore Plc., 100%)	Mount Isa, QLD	240
Do.	Port Pirie smelter (Nyrstar Corp., 100%)	5 km north of Queenstown, TAS	235
Lithium:			
Mine, direct shipping ore	Wodgina Mine [MARBL Lithium Joint Venture (Albemarle Corp., 60%, and Mineral Resources Ltd., 40%)]	100 km south of Port Hedland, WA	3,500
Mine, spodumene, concentrate	Altura lithium mine (Pilbara Minerals Ltd., 100%)	90 km south of Port Hedland, WA	220
Do.	Bald Hill lithium and tantalum mine[4] (Alita Resources Ltd., 100%)	50 km southeast of Kambalda, WA	150

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Lithium:—Continued				
Do.		Greenbushes open pit/underground tantalite-spodumene mine [Talison Lithium Australia Pty. Ltd., operator (Albemarle Corp., 49%; Tianqi Lithium Corp., 26.01%; IGO Ltd., 24.99%)]	70 km southeast of Bunbury, WA	740
Do.		Mount Cattlin spodumene mine (Galaxy Resources Ltd., 100%)	2 km north of Ravensthorpe, WA	180
Do.		Mount Marion spodumene mine [Reed Industrial Minerals Pty. Ltd. (Mineral Resources Ltd., 50%, and Jiangxi Ganfeng Lithium Co. Ltd., 50%)]	40 km southwest of Kaloorlie, WA	600
Do.		Pilgangoora lithium-tantalum mine (Pilbara Minerals Ltd., 100%)	120 km south of Port Hedland, WA	580
Refinery, hydroxide	metric tons	Kemerton Refinery [MARBL Lithium Joint Venture (Albemarle Corp., 60%, and Mineral Resources Ltd., 40%)]	Bunbury, WA	25,000
Do.	do.	Kwinana Refinery [Tianqi Lithium Energy Australia Pty. Ltd. (operator) (Tianqi Lithium Corp., 51%, and IGO Ltd., 49%)]	35 km south of Perth, WA	24,000
Manganese:				
Mine, concentrate		Bootu Creek open pit manganese mine (OM Holding Ltd., 100%)	110 km north of Tennant Creek, NT	600
Do.		Groote Eylandt open pit manganese mine [Groote Eylandt Mining Co., operator (BHP Group Ltd., 60%, and Anglo American Corp., 40%)]	Groote Eylandt, NT	3,100
Do.		Woodie Woodie open pit manganese mine (includes Bells and East Pilbara leases) [Pilbara Manganese Pty. Ltd., operator (Consolidated Minerals Ltd., 100%)]	400 km southeast of Port Hedland, WA	1,000
Alloys		Bell Bay Smelter [Tasmanian Electro Metallurgical Co. Pty. Ltd., operator (BHP Group Ltd., 100%)]	Bell Bay, TAS	250
Natural gas:				
Gas	million cubic meters	Gorgon project (Chevron Corp., 47.3%; ExxonMobil Corp., 25%; Royal Dutch Shell Plc., 25%; Osaka Gas Co. Ltd., 1.25%; Tokyo Gas Co. Ltd., 1%; JERA Co. Inc., 0.417%)	Barrow Island, WA	23,400
Do.	do.	Ichthys Project (INPEX, 67.82%; TotalEnergies S.E., 26%; CPC Corp., 2.625%; Osaka Gas Co. Ltd., 1.2%; Kansai Electric Power Co. Inc., 1.2%; JERA Co. Inc., 0.735%; Toho Gas Co. Ltd., 0.42%)	South of Darwin, NT	12,000
Do.	do.	North West Shelf gas operations {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]}	130 km offshore Dampier, WA	7,300
Do.	do.	Pluto and Xena fields {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], 90%; Kansai Electric Power Co. Inc., 5%; Tokyo Gas Co. Ltd., 5%}	Burrup Peninsula, WA	6,900
Liquefied natural gas	million metric tons	Australia Pacific LNG (ConocoPhillips Co., 37.5%; Origin Energy, 37.5%; Sinopec Ltd., 25%)	Curtis Island, QLD	9
Do.	do.	Darwin LNG facility [ConocoPhillips Co., 56.9%; Santos Ltd., 11.5%; INPEX, 11.4%; Eni S.p.A., 11%; JERA Co. Inc. and Tokyo Gas Co. Ltd., 9.2% (combined)]	Darwin, NT	4
Do.	do.	Gladstone LNG (Santos Ltd., 30%; Petroliam Nasional Bhd., 27.5%; TotalEnergies S.E., 27.5%; Korea Gas Corp., 15%)	Bowen Basin, QLD	8
Do.	do.	Gorgon project (Chevron Corp., 47.3%; Exxon Mobil Corp., 25%; Royal Dutch Shell Plc., 25%; Osaka Gas Co. Ltd., 1.25%; Others, 1.42%)	Barrow Island, WA	16
Do.	do.	Ichthys Project (INPEX, 67.82%; TotalEnergies S.E., 26%; CPC Corp., 2.625%; Osaka Gas Co. Ltd., 1.2%; Kansai Electric Power Co. Inc., 1.2%; JERA Co. Inc., 0.735%; Toho Gas Co. Ltd., 0.42%)	South of Darwin, NT	9

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Natural gas—Continued:				
Liquefied natural gas—Continued	million metric tons	North West Shelf project {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]}	Burrup Peninsula, WA	17
Do.	do.	Pluto LNG {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], 90%; Kansai Electric Power Co. Inc., 5%; Tokyo Gas Co. Ltd., 5%}	Burrup Peninsula, WA	5
Do.	do.	Prelude Floating LNG platform (Royal Dutch Shell Plc., 67.5%; INPEX, 17.5%; Korea Gas Corp., 10%; CPC Corp., 5%)	Browse Basin, NT	4
Do.	do.	Queensland Curtis LNG (Royal Dutch Shell Plc., 100%)	Curtis Island, QLD	9
Do.	do.	Wheatstone project [Chevron Corp., 64.14%; Kuwait Foreign Petroleum Exploration Co. (KUFPEC), 13.4%; Woodside Petroleum Ltd., 13%; PE Wheatstone Pty. Ltd., 8%; Kyushu Electric Power Co., 1.46%]	12 km west of Onslow, WA	9
Nickel:				
Mine, Ni content		Avebury nickel mine and processing plant (includes Bison, North Avebury, Saxon, and West Viking deposits) (Mallee Resources Ltd., 100%)	Near Zeehan, TAS	7
Do.		Beta Hunt nickel-gold mine (includes Beta Hunt and East Alpha deposits) [Salt Lake Mining Pty. Ltd. (Karora Resources Ltd., 100%)]	60 km south of Kalgoorlie, WA	3
Do.		Black Swan underground nickel mine[3] (includes Silver Swan deposits) (Poseidon Nickel Ltd., 100%)	53 km northeast of Kalgoorlie, WA	10
Do.		Cosmos project[3] (includes Odysseus underground nickel mine) (IGO Ltd., 100%)	50 km north of Leinster, WA	13
Do.		Forrestania operation (includes Fly Fox and Spotted quoll underground nickel mines and Cosmic Boy concentrator) (IGO Ltd., 100%)	100 km north of Ravensthorpe, WA	25
Do.		Kambalda nickel mine (includes Cassini, Durkin North, Otter Juan, and Long deposits) (Mincor Resources NL, 100%)	120 km west of Norseman, WA	16
Do.		Kambalda nickel concentrator (BHP Group Ltd., 100%)	56 km south of Kalgoorlie, WA	40
Do.		Lake Johnston underground nickel mine[3] (includes Maggie Hays, Emily Ann, and Maggie Hays Lake deposits) (Poseidon Nickel Ltd., 100%)	120 km west of Norseman, WA	12
Do.		Lanfranchi underground mine (includes Deacon, Schmitz, Tramway,and Winner deposits) (Black Mountain Metals LLC, 50%, and Tembo Capital Management Ltd., 50%)	42 km south of Kambalda, WA	10
Do.		Leinster nickel operation (includes Cliffs, Leinster, and Venus mines, and Leinster concentrator) (BHP Group Ltd., 100%)	10 km north of Leinster, WA	44
Do.		Mount Keith nickel operation (includes Mount Keith and Yakabine mines, and Mount Keith concentrator) (BHP Group Ltd., 100%)	70 km south-southeast of Wiluna, WA	40
Do.		Murrin Murrin open pit nickel-cobalt mine [Murrin Murrin Pty. Ltd. (Glencore Plc., 100%)]	60 km east of Leonora, WA	40
Do.		Nova operation (includes Nova underground nickel-cobalt mine and processing plant) (IGO Ltd., 100%)	160 km east-northeast of Norseman, WA	28
Do.		Radio Hill underground nickel-cobalt mine and processing plant[3] (Artemis Resources Ltd., 100%)	35 km south of Karratha, WA	4
Do.		Ravensthorpe open pit mine (First Quantum Minerals Ltd., 100%)	Ravensthorpe, WA	25
Do.		Savannah underground mine (Panoramic Resources Ltd., 100%)	120 km north of Halls Creek, WA	8
Smelter		Kalgoorlie nickel smelter (BHP Group Ltd., 100%)	Kalgoorlie, WA	110

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Nickel—Continued:				
Refinery		Kwinana nickel refinery (BHP Group Ltd., 100%)	Kwinana, WA	83
Do.		Murrin Murrin nickel refinery [Murrin Murrin Pty. Ltd. (Glencore Plc., 100%)]	Murrin Murrin, WA	45
Petroleum:				
Condensate	thousand 42-gallon barrels	Ichthys Project (INPEX, 67.82%; TotalEnergies S.E., 26%; CPC Corp., 2.625%; Osaka Gas Co. Ltd., 1.2%; Kansai Electric Power Co. Inc., 1.2%; JERA Co. Inc., 0.735%; Toho Gas Co. Ltd., 0.42%)	South of Darwin, NT	36,500
Do.	do.	North West Shelf gas operations {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]	130 km offshore Dampier, WA	22,000
Do.	do.	Prelude Floating LNG platform (Royal Dutch Shell Plc., 67.5%; INPEX, 17.5%; Korea Gas Corp., 10%; CPC Corp., 5%)	Browse Basin, NT	9,600
Refinery	do.	Altona Refinery (ExxonMobil Corp., 100%)	13 km southeast of Melbourne, VIC	44,000
Do.	do.	Bulwer Island Refinery [BP Amoco Refinery (Bulwer Island) Pty. Ltd., 100%]	Bulwer Island, QLD	26,000
Do.	do.	Geelong Refinery [Shell Refining (Australia) Pty. Ltd., 100%]	Geelong, VIC	40,000
Do.	do.	Kurnell Refinery (Caltex Australia Ltd., 100%)	Kurnell, NSW	42,000
Do.	do.	Kwinana Refinery [BP Amoco Refinery (Kwinana) Pty. Ltd., 100%]	Kwinana, WA	50,000
Do.	do.	Lytton Refinery (Caltex Australia Ltd., 100%)	Lytton, QLD	39,000
Phosphate rock		Phosphate Hill-Duchess open pit phosphate mine (Incitec Pivot Ltd., 100%)	140 km northwest of Mount Isa, QLD	2,200
Rare earths:				
Mine, mineral concentrate, rare-earth-oxide equivalent	metric tons	Mount Weld Mine (Lynas Rare Earth Ltd., 100%)	Mount Weld, WA	21,000
Mixed rare-earth carbonate		Kalgoorlie Rare Earths Processing Facility (Lynas Rare Earth Ltd., 100%)	Kalgoorlie-Boulder, WA	NA
Silica		Kemerton silica Sands dredge [Kermerton Silica Sand Pty. Ltd. (Tochu Corp., 67%, and Toyota Tsusho Corp., 33%)]	35 km northeast of Bunbury, WA	450
Silver:				
Mine, Ag content	kilograms	Broken Hill underground silver-zinc-lead mine (Shenzhen Zhongjin Lingnan Nonfemet Co. Ltd., 50.1%, and Perilya Ltd., 49.9%)	Broken Hill, NSW	81,200
Do.	do.	Cannington underground silver-lead-zinc mine (BHP Group Ltd., 100%)	85 km southwest of McKinlay, QLD	700,000
Do.	do.	Dugald River Mine (MMG Ltd., 100%)	65 km northwest of Cloncurry, QLD	38,000
Do.	do.	Endeavor underground zinc-silver-lead mine (CBH Resources Ltd., 100%)	40 km northwest of Cobar, NSW	35,000
Do.	do.	Hellyer underground zinc-lead-silver mine (NQ Minerals Plc., 100%)	80 km south-southwest of Burnie, TAS	60,000
Do.	do.	Mount Isa underground copper-lead-zinc-silver mines (includes Enterprise, George Fisher, Hilton, and Lady Loretta deposits) (Glencore Plc., 100%)	Mount Isa, QLD Burnie, TAS	375,000
Do.	do.	Olympic Dam underground copper-silver-gold-uranium mine [Olympic Dam Operations Pty. Ltd., operator (BHP Group Ltd., 100%)]	Roxby Downs, 80 km north of Woomera, SA	27,000
Do.	do.	Rosebery underground zinc-lead-silver-copper-gold mine [Minerals and Metals Group Australia Ltd., operator (China Minmetals Nonferrous Metals Co. Ltd., 100%)]	35 km north of Queenstown, TAS	35,000
Smelter	kilograms	Port Pirie smelter (Nyrstar Corp., 100%)	Port Pirie, SA	450,000

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Tantalum, tantalite, mine production		Bald Hill lithium-tantalum mine (Alliance Mineral Assets Ltd., 100%)	50 km southeast of Kambalda, WA	NA
Do.		Greenbushes open pit/underground tantalite-spodumene mine (Global Advanced Metals Ltd., 100%)	70 km southeast of Bunbury, WA	NA
Do.		Pilgangoora lithium-tantalum project (Pilbara Minerals Ltd., 100%)	120 km south of Port Hedland, WA	NA
Do.		Wodgina open pit tantalite mine (Global Advanced Metals Ltd., 100%)	70 km southeast of Bunbury, WA	NA
Tin:				
Mine, Sn content	metric tons	Greenbushes open pit/underground tantalite-spodumene mine (Global Advanced Metals Ltd., 100%)	70 km southeast of Bunbury, WA	1,000
Do.	do.	Mount Bischoff open pit mine[3] (Metals X Ltd., 50%, and L'sea Resources International Holdings Ltd., and YT Parksong Australia Holdings Pty. Ltd., 50%)	55 km southwest of Burnie, TAS	6,000
Do.	do.	Renison Bell underground tin mine (Metals X Ltd., 50%, and L'sea Resources International Holdings Ltd. and YT Parksong Australia Holdings Pty. Ltd., 50%)	136 km south of Burnie, TAS	4,000
Smelter	do.	Greenbushes smelter (Global Advanced Metals Ltd., 100%)	70 km southeast of Bunbury, WA	1,000
Titanium, mineral sands (ilmenite, rutile, and zircon)		Capel heavy-mineral processing facility (Iluka Resources Ltd., 100%)	7 km north of Capel, WA	335
Do.		Cataby heavy-mineral mine (Iluka Resources Ltd., 100%)	150 km north of Perth, WA	450
Do.		Jacinth-Ambrosia mine (Iluka Resources Ltd., 100%)	110 km north of Coorabie, SA	600
Tungsten, mine production, W content	metric tons	Kara magnetite and scheelite mine (Tasmania Mines Ltd., 100%)	30 km south of Burnie, TAS	50
Do.	do.	Mount Carbine tungsten mine (EQ Resources Ltd., 100%)	75 km west of Caims, QLD	4,000
Do.	do.	Wolfram Camp molybdenum-tungsten mine (Almonty Industries Inc., 100%)	85 km west of Caims, QLD	500
Uranium, mine, U_3O_8 content	do.	Beverley in situ leach uranium operation[4] (Heathgate Resources Pty. Ltd., 100%)	300 km northeast of Port Augusta, SA	1,000
Do.	do.	Four Mile uranium mine [Quasar Resources Pty. Ltd., 100% (Heathgate Resources Pty. Ltd.)]	300 km northeast of Port Augusta, SA	1,200
Do.	do.	Olympic Dam underground copper-silver-gold-uranium mine [BHP Billiton Olympic Dam Corp. Pty. Ltd., operator (BHP Group Ltd., 100%)]	Roxby Downs, 80 km north of Woomera, SA	4,400
Vanadium, mine, V_2O_5 content	do.	Windimurra vanadium mine[4] (Atlantic Vanadium Pty. Ltd., 100%)	100 km east-southeast of Mount Magnet, WA	8
Zinc:				
Mine, Zn content		Century open pit zinc-silver-lead mine (New Century Resources Ltd., 100%)	250 km north of Mount Isa, QLD	500
Do.		Dugald River Mine (MMG Ltd., 100%)	65 km northwest of Cloncurry, QLD	180
Do.		Endeavor underground zinc-silver-lead mine [CBH Resources Ltd. (Toho Zinc Co. Ltd., 100%)]	40 km northwest of Cobar, NSW	125
Do.		Golden Grove underground zinc-copper mine (EMR Capital Pty. Ltd., 100%)	225 km east of Geraldton, WA	150
Do.		Hellyer underground zinc-lead-silver mine (NQ Minerals Plc., 100%)	80 km south-southwest of Burnie, TAS	130
Do.		Jaguar underground mine (Jabiru Metals Ltd., 100%)	250 km north of Kalgoorlie, WA	420
Do.		McArthur River open pit mine [McArthur River Mining Pty. Ltd., operator (Glencore Plc., 100%)]	60 km southwest of Borroloola, NT	280
Do.		Mount Isa underground copper-lead-zinc-silver mines (includes Enterprise, George Fisher, and Lady Loretta deposits) (Glencore Plc., 100%)	Mount Isa, QLD	175
Do.		Rosebery underground zinc-lead-silver-copper-gold mine [Minerals and Metals Group Australia Ltd., operator (China Minmetals Nonferrous Metals Co. Ltd., 100%)]	35 km north of Queenstown, TAS	100
Smelter		Hobart smelter (Nyrstar NV, 100%)	Hobart, TAS	320
Do.		Port Pirie smelter (Nyrstar NV, 100%)	5 km north of Queenstown, TAS	45

See footnotes at end of table.

TABLE 2—Continued
AUSTRALIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners	Location of main facilities[1, 2]	Annual capacity[e]
Zinc:—Continued			
Refinery	Sun Metals zinc refinery [Sun Metals Corp. Pty. Ltd., operator (Korea Zinc Co., 100%)]	Townsville, QLD	170

[e]Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.
[1]Abbreviations used for States and Territories in this table include the following: NSW—New South Wales; NT—Northern Territory; QLD—Queensland; SA—South Australia; TAS—Tasmania; VIC—Victoria; WA—Western Australia.
[2]Abbreviation(s) used for unit(s) of measure in this table include the following: km—kilometer.
[3]On care-and-maintenance status in 2023.

TABLE 3
AUSTRALIA: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2023

Commodity		Quantity (thousand metric tons)	Value (million dollars)
METALS			
Aluminum:			
Bauxite		37,481	1,115
Alumina[1]		16,234	5,515
Metal		1,452	3,406
Copper:			
Ores and concentrate, gross weight		1,385	4,433
Refined metal		402	3,329
Total Cu content		798	NA
Gold, bullion, refined and unrefin	metric tons	248	18,817
Iron and steel:			
Iron ore, gross weight[2]		891,697	90,475
Raw steel		1,070 e	842
Scrap		2,040	844
Lead:			
Ores and concentrate, gross weight		347	535
Refined metal		129	334
Bullion[3]		120	306
Total Pb content		473	NA
Nickel:			
Ores and concentrate, gross weight		178	346
Refined and intermediate, gross weight		118 e	2,581
Total Ni content		145 e	NA
Silver, bullion, refined	metric tons	119	157
Tin, ores and concentrate:			
Gross weight	do.	17,759	217
Sn content	do.	9,320 e	NA
Titanium:			
Leucoxene concentrate		85 e	NA
Titanium dioxide pigment		136 e	NA
Zinc:			
Ores and concentrate, gross weight		2,007	1,417
Refined metal		437	1,265
Total Zn content		1,371	NA
INDUSTRIAL MINERALS			
Lithium:			
Ores and concentrate, gross weight		3,573	12,466
Refined, lithium hydroxide	metric tons	1,397	28
Gemstones:			
Diamond:			
Gem	carats	45,600	229
Industrial	do.	1,400	9
Unsorted	do.	75 e	-- e, 4
Total	do.	47,100 e	237 e
Opal:			
Rough		NA	7
Cut and polished		NA	39
Total		NA	47
Sapphire, rough		NA	7
Other[5]		NA	34

See footnotes at end of table.

TABLE 3—Continued
AUSTRALIA: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2023

Commodity		Quantity (thousand metric tons)	Value (million dollars)
MINERAL FUELS AND RELATED MATERIALS			
Coal:			
Metallurgical	million metric tons	151	37,768
Thermal	do.	202	30,748
Liquefied natural gas[6]	do.	81	49,350
Petroleum:			
Crude[7]	thousand 42-gallon barrels	98,613	8,201
Refinery products	do.	2,073	241
Uranium oxide (U content)	metric tons	5,338	605

[e]Estimated. do. Ditto. NA Not available. -- Zero.
[1]Includes alumina hydroxide.
[2]Includes iron ores, concentrate, lump, and pellets.
[3]Lead bullion includes a substantial precious metal content, mainly silver.
[4]Less than ½ unit.
[5]Includes cut and polished sapphires.
[6]Includes reexports.
[7]Includes other refinery feedstock.

Source: Australian Government, Department of Industry, Science, and Resources, 2024, Resources and energy quarterly, December 2024.

TABLE 4
AUSTRALIA: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2023

Commodity		Quantity (thousand metric tons)	Value (million dollars)
METALS			
Aluminum:			
Bauxite		2	1
Alumina		45	23
Metal		55	137
Gold, bullion, refined and unrefined		NA	5,685
Iron and steel:			
Ferroalloys		43	75
Iron ore, gross weight[1]		993	101
Raw steel		2,420 e	2,761
Nickel, primary products[2]		NA	101
Phosphate rock		226	40
Silver, bullion, refined		NA	582
Tin, refined	metric tons	197	5
INDUSTRIAL MINERALS			
Gemstones, diamond:			
Dust and powder	thousand carats	4,310	1
Gem	do.	189	385
Industrial	do.	5	1
Total	do.	4,504	387
MINERAL FUELS AND RELATED MATERIALS			
Petroleum:			
Crude[3]	thousand 42-gallon barrels	59,285	5,479
Refinery products	do.	322,335	34,624

[e]Estimated. NA Not available.
[1]Includes limonite ore used in the production of refined nickel products.
[2]Includes matte, sinter, and intermediate products; ferronickel, unwrought nickel metal, and alloys and scrap. Also includes the value of limonite ore used in the production of refined nickel products.
[3]Includes other refinery feedstock.

Source: Australian Government, Department of Industry, Science, and Resources, 2024, Resources and energy quarterly, December 2024.

TABLE 5
AUSTRALIA: RESERVES OF MAJOR MINERAL COMMODITIES IN 2023

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity		Reserves[1]
Antimomy, Sb content		112
Bauxite	million metric tons	3,710
Coal:		
Anthracite and bituminous, recoverable[2]	billion metric tons	72
Lignite, recoverable[3]	do.	74
Cobalt, Co content		1,690
Copper, Cu content	million metric tons	105
Diamond	thousand carats	2,810
Gold, Au content	metric tons	12,700
Graphite		10,800
Iron ore:		
Gross weight	billion metric tons	59
Fe content	do.	27
Lead, Pb content	million metric tons	34
Lithium, Li content		8,440
Magnesite, $MgCO_3$ content	million metric tons	284
Manganese ore	do.	576
Molybdenum, Mo content		759
Nickel, Ni content		24,600
Niobium, Nb content		255
Platinum-group metals (Ir, Os, Pd, Pt, Rh, Ru)[4]	metric tons	466
Phosphate rock:		
Gross weight	million metric tons	803
P_2O_5 content	do.	132
Potash, K_2O content	do.	49
Rare earths (rare-earths oxide plus Y_2O_3)		6,260
Scandium, Sc content		34
Silver, Ag content		91
Tantalum, Ta content		121
Tin, Sn content		566
Titanium:		
Ilmenite	million metric tons	291
Rutile	do.	37
Tungsten, W content		568
Uranium, U content		1,260
Vanadium, V content		10,000
Zinc, Zn content	million metric tons	64
Zirconium, zircon	do.	84

do. Ditto.

[1]Accessible Economic Demonstrated Resources (AEDR) as of December 2024, as reported by Geoscience Australia. AEDR refers to the portion of total Economic Demonstrated Resources (EDR), which include JORC Reserves, and Measured and Indicated Resources, that is accessible for mining. It excludes resources that are inaccessible for mining because of environmental restrictions, government policies, or military lands.

[2]Reported as black coal by Geoscience Australia.

[3]Reported as brown coal by Geoscience Australia.

[4]Platinum-group metals are produced as a byproduct of nickel-cobalt mining; platinum-group-metal reserves and resources of these producers are not reported.