



2022 Minerals Yearbook

CHINA [ADVANCE RELEASE]

U.S. Geological Survey, Reston, Virginia: 2025

For more information on the USGS—the Federal source for science about the Earth, its natural and living resources, natural hazards, and the environment—visit <https://www.usgs.gov> or call 1–888–392–8545.

For an overview of USGS information products, including maps, imagery, and publications, visit <https://store.usgs.gov/> or contact the store at 1–888–275–8747.

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this information product, for the most part, is in the public domain, it also may contain copyrighted materials as noted in the text. Permission to reproduce copyrighted items must be secured from the copyright owner.

World rankings for mineral production, shares of world production, and reserves presented in this chapter are derived from the referenced sources. Production data in this chapter may differ from data in other sources because of differences in the date of reporting.

THE MINERAL INDUSTRY OF CHINA

By Ji Won Moon

In 2022, China's economy and mineral industry were affected by national and global challenges. Domestically, restrictive measures related to the global coronavirus disease 2019 (COVID-19) pandemic continued through the second quarter of the year, and activity in the real estate and related sectors—which had been estimated to generate approximately 30% of the gross domestic product (GDP)—decreased by 5% in 2022. Internationally, the Russia-instigated conflict in Ukraine and other conflicts in Europe caused disruptions in supply chains and resulted in higher exchange rates and surging energy costs. China's international trade was complicated by trade obstacles, such as the United States Inflation Reduction Act's electric vehicles tax credit and the United States "friendshoring" policy (a policy directed at moving supply chains from China to reduce the United States reliance on Chinese parts and components). As a result, China's real GDP growth rate slowed significantly to 3.0% from 8.4% in 2021 (Bazilian, 2022; Chen, 2022b; Akama and Nitta, 2023; Asian Development Bank, 2023, p. 110; Kawate, 2023; Zhang and Yao, 2023).

In 2022, China maintained its position as the world's leading producer and consumer of numerous mineral commodities. Smelter production of 10 commonly used nonferrous metals (aluminum, antimony, copper, lead, magnesium, mercury, nickel, tin, titanium, and zinc) increased to 67.9 million metric tons (Mt), or by 4.9% compared with that in 2021. Fixed asset investment in the nonferrous metal mining and processing sector increased by 8.4% and that in the nonferrous metal smelting and processing sector increased by 15.7%. The export value of nonferrous metals increased by 26.7% to \$66.3 billion, and the value of imports increased by 18.7% to \$261 billion. The export values of aluminum, copper, lithium, and silicon accounted for 75% of the total exports of nonferrous metals (table 4; National Bureau of Statistics of China, 2023a, p. 1, 2, 9; State Council, The, 2024).

In 2022, the metals for which China's production accounted for 50% or more of total global production included primary gallium (98% of world production), primary magnesium metal (an estimated 89%, excluding United States production), mercury (86%, estimated), tungsten (83%, estimated), refined bismuth (82%, estimated), silicon metal (an estimated 79%, excluding United States production), rare earths (70%, estimated), pig iron (67%), refined indium and titanium sponge (an estimated 67% each, excluding United States production of titanium sponge), vanadium (66%), refined tellurium (65%, estimated), smelted aluminum (59%), alumina (59%, estimated), and raw steel (54%). The industrial minerals for which China's production accounted for 50% or more of world production included wollastonite (an estimated 80% of world production, excluding United States production), graphite and lime (72% each), fluorspar (69%), magnesite (an estimated 59%, excluding United States production), and cement (51%, estimated). Information on China's share of world production of other nonfuel mineral commodities in 2022 can be found in the

U.S. Geological Survey's Mineral Commodity Summaries 2024 (Apodaca, 2024; Bray, 2024; Cordier, 2024; Flanagan, 2024; Gambogi, 2024; Hatfield, 2024; Jaskula, 2024; Londono, 2024; McRae, 2024; Merrill, 2024a, b; Polyak, 2024; Sagine, 2024; Schnebele, 2024; Sheaffer, 2024; Shedd, 2024; Stewart, 2024a, b; Tolcin, 2024; Tuck, 2024; U.S. Geological Survey, 2024).

In 2022, China was the world's leading producer of coal and accounted for 53% of world production (exajoule basis). The country's production of natural gas ranked fourth, accounting for 5.5% of world production; and crude petroleum, including condensate, ranked sixth, accounting for 5.1% of world production. China's petroleum refinery capacity (throughput basis) was ranked second in the world, accounting for 17% of world capacity. China was the leading consumer of primary energy in the world. In 2022, it accounted for 55% of the world's consumption of coal (exajoule basis); 15% of the world's consumption of crude petroleum; and 9.5% of the world's consumption of natural gas (Energy Institute, 2023, p. 17, 20, 25, 30, 32, 40, 42).

Minerals in the National Economy

In 2022, China's nominal GDP was \$18.2 trillion.¹ The output of the mining sector increased by 7.3% compared with a 5.3% increase in 2021. The output of the manufacturing sector increased by 3.0% compared with a 9.8% increase in 2021. In 2022, the mining sector accounted for 3.5% of the GDP compared with 3.0% in 2021 and the manufacturing sector accounted for 27% compared with 28% in 2021. In 2022, the number of people in urban nonprivate enterprises employed in the mining and manufacturing sectors was 3.41 million and 37.4 million, respectively, which accounted for 0.46% and 5.1%, respectively, of the country's total workforce. In 2022, the total investment in fixed assets, excluding assets held by rural households, increased to \$8.14 trillion, or by 4.9% compared with that in 2021. Investment in fixed assets in the mining sector increased by 4.5%, of which mining and processing of ferrous metal ores increased by 33%; mining and washing of coal, by 24%; mining and processing of nonmetallic ores, by 17%; production of petroleum and natural gas, by 16%; and mining and processing of nonferrous metal ores, by 8.4%. Investment in fixed assets in the mining of other ores decreased by 20%. In 2022, investment in fixed assets in the manufacturing sector increased by 9.1%, of which smelting and the further processing of nonferrous metals increased by 16%, and the manufacturing of metal products, by 12%. Investment in fixed assets related to the processing of mineral fuels decreased by 11%, and that related to smelting and the further processing of ferrous metals, by 0.1% (National Bureau of Statistics of China, 2022b; 2023c, sec. 3–1, 3–3, 3–4, 3–6, 4–5, 10–1, 10–12; 2023d; 2024, sec. 3–6; Huld, 2023).

¹Where necessary, values have been converted from Chinese yuan renminbi (CNY) to U.S. dollars (US\$) at the annual average exchange rates of CNY6.667=\$1.00 for 2022 and CNY6.461=\$1.00 for 2021.

In 2022, the foreign direct investment (FDI), which refers to the investments in China by entities based in other countries, was \$189 billion compared with \$181 billion in 2021. Excluding Hong Kong and Macao, Singapore was the leading source of FDI in China and accounted for 5.6% of the total FDI, followed by the British Virgin Islands and the Republic of Korea (3.5% each), Japan and the Netherlands (2.4% each), and Germany (1.4%). About 0.8% of the FDI was directed to the mining sector and resulted in 28 new enterprises being established compared with 1.5% of the FDI and 25 new enterprises being established in 2021. In total, 743 mining enterprises supported by FDI were registered as of yearend 2022. In 2022, outward direct investment (ODI), which refers to the investment by Chinese entities in foreign countries, was \$163 billion compared with \$179 billion in 2021. The ODI in the mining sector increased by 80% to \$15.1 billion from \$8.41 billion in 2021. As of yearend 2022, the total accumulated value of China's ODI decreased by 1.0% to \$2.75 trillion compared with that in 2021, and accumulated ODI in the mining sector accounted for 7.6% of the accumulated total ODI. The ODI for the mining sector was distributed mainly to petroleum and natural gas production, nonferrous metal mining and processing, ferrous metal mining and processing, and coal mining and washing. The total number of foreign enterprises supported by ODI was 46,563 in 2022, of which mining enterprises accounted for 1,296, or 2.8% of the total (Ministry of Commerce, 2023, p. 12, 14, 18, 24, 45; National Bureau of Statistics of China, 2022a, sec. 11–15; 2023c, sec. 11–14, 11–15, 11–16).

Government Policies and Programs

The principal law in China that regulates the mineral industry is the Mineral Resources Law which governs the prospecting for minerals, the registration of mining rights, and the extraction of minerals from mines. The law was enacted in March 1986 and amended in 1996 and 2009. The mineral industry is administered by complementary rules, regulations, and guidelines issued by the State Council (for example, the Administration of Transfer of Mineral Exploration Rights and Mining Rights), local congresses (for example, the Administration Regulation on Mineral Resources in Beijing), and central-level ministries, commissions, and agencies under the direct supervision of the State Council (for example, Administrative Rules on Shanghai Mining Right Market). All mineral resources belong to the state, and mining rights are assigned by the Government through a public bidding or tender process except for key construction projects or rare earths and radioactive mineral projects. Mining rights for Government-designated strategic mineral resources, including aluminum, antimony, chrome, coal, cobalt, copper, fluorspar, gold, graphite, iron, lithium, molybdenum, natural gas, nickel, petroleum, phosphorous, potash, rare earths, tin, tungsten, uranium, and zirconium, are assigned by the Ministry of Natural Resources (MNR). Mining rights for other minerals can be registered with Provincial governments or lower levels of government, such as at the municipal level and the county level. In 2019, Natural Resources Regulation [2019] No. 7 ordered the natural resource authorities of Provinces, municipalities, and Autonomous Regions to work directly with the central Government and

reorganize into a four-level mining administration management system (China Internet Information Center, 2021; Hui, 2021; Wang 2022; Wu and Li, 2023).

In 2022, the MNR continued to work with the Ministry of Justice to further revise the Mineral Resources Law (Revised Draft), which was created in 2021. In April, the MNR and the National Administration of State Secret Protection jointly issued the Rules on the Management of Confidential Geological Information. The rules were aimed at improving the management of classified geologic information, refining the qualification of users of classified geologic information and the scope of use, and strengthening the confidentiality of information-use management. In November, the Notice of the Ministry of Natural Resources on the Guarantee of Mining Land was issued to clarify issues related to new land made available for mining projects and the reclamation and restoration of existing mining land (Ministry of Natural Resources, 2022, p. 27, 28; 2023c, p. 28).

In December, the Government published a draft version of the export control catalog for 24 prohibited and 115 restricted technologies. This draft version was published to solicit public opinion and was an update of previous catalogs published in 2008 and 2020. The revised catalog included some prohibited rare-earth technologies, such as that for rare-earth extraction and separation; rare-earth metal and alloy material production; samarium cobalt, neodymium iron boron, and cerium magnet production; and rare-earth calcium oxyborate production. Other mineral-commodity-related technologies in the catalog included those for steel-based heat-resistant super alloy and stealth material, cyanide-free heap leaching, gallium extraction in the production of aluminum, and high-temperature superconducting materials (BNN Bloomberg, 2021; Ministry of Commerce, 2022).

Production

Metal commodities for which output increased by 10% or more in 2022 compared with that in 2021 included nickel chemicals (Ni content), which increased by 180%; gallium, by 43%; rare earths (rare-earth-oxide equivalent), by 25%; titanium sponge, by 25% (estimated); silicon (metal), by 20%; primary magnesium, by 15%; ferrochromium, by 15% (estimated); primary indium, by 14% (estimated); refined cobalt (metal), by 13%; mined gold (Au content), by 13%; refined cobalt (other, including powder, oxide, and salts), by 13% (estimated); refined gold, by 12%; and ilmenite and leucoxene concentrate (TiO_2 content), by 10%. Metal commodities for which output decreased by 10% or more in 2022 compared with output in 2021 included refined manganese (electrolytic), for which production decreased by 44%; mercury (Hg content), by 22% (estimated); mined manganese (Mn content), by 19%; and ferronickel (nickel pig iron), by 10% (estimated). Data on mineral production are in table 1.

In 2022, among industrial minerals, the output of lithium ore and concentrate (lithium carbonate equivalent) increased by 76%; lithium brine, by 65%; asbestos, by 51%; boron (B_2O_3 content), by 46%; lithium carbonate, by 33%; zeolites, by 33% (estimated); lithium hydroxide, by 30%; kaolin, by 22%; diatomite, by 16%; and potash (K_2O content), by 13% (estimated). The output of

lithium chloride decreased by 27%; barite, by 10% (estimated); and cement, by 10% (table 1).

In 2022, among the mineral fuels and related materials, the output of liquefied natural gas increased by 14%; lignite coal, by 11% (estimated); anthracite coal, by 10% (estimated); bituminous coal, by 10% (estimated); coalbed gas, by 10%; and metallurgical coal, by 10% (estimated) (table 1).

Structure of the Mineral Industry

Most of the mining and mineral-processing activities in China were conducted by state-owned or state-holding enterprises. The share of state ownership was high in the energy sector and in the mining and mineral-processing sector. The Government owned 99.7% of the assets and 87% of the enterprises engaged in the extraction of petroleum and natural gas; 87% of the assets and 25% of the enterprises engaged in the mining and washing of coal; 74% of the assets and 10% of the enterprises engaged in the mining and processing of ferrous metal ores; 72% of the assets and 28% of the enterprises engaged in the mining and processing of nonferrous metal ores; 65% of the assets and 14% of the enterprises engaged in the processing of petroleum, coal, and other fuels; and 62% of the assets and 15% of the enterprises engaged in the mining and processing of nonmetal ores. The share of state ownership was relatively smaller in the downstream smelting, rolling, and metal product manufacturing sectors: for the smelting and rolling of ferrous metals, the Government owned 55% of the assets and 6% of the enterprises; the smelting and rolling of nonferrous metals, 55% and 8%, respectively; the manufacturing of nonmetallic mineral products, 31% and 6%, respectively; and the manufacturing of metal mineral products, 20% and 2%, respectively. Table 2 is a list of major mineral industry facilities (National Bureau of Statistics of China, 2023c, sec. 13–4, 13–6).

Mineral Trade

In 2022, the total value of China's goods exports increased to \$3.56 trillion, or by 7.4% compared with that in 2021. The export value of base metals and articles of base metal accounted for 8.3% of total goods exports compared with 8.0% in 2021, and the export value of mineral products accounted for 2.0% of total goods exports compared with 1.5% in 2021. In 2022, the total value of goods imports increased by 1.1% to \$2.71 trillion compared with the value in 2021. The value of mineral products imports accounted for 29% of total goods imports compared with 26% in 2021, of which mineral fuels, mineral oils, and their products accounted for 20% of total goods imports, and base metals and articles thereof, 5.9%. Detailed information on mineral trade can be found in tables 3 and 4, and in the "Commodity Review" section of this report (National Bureau of Statistics of China, 2022a, sec. 11–4; 2023c, sec. 11–2, 11–4).

The mineral commodities for which the export value increased by 10% or more compared with that in 2021 included unwrought zinc, for which the value increased by 15 times; lithium carbonate, by 587%; lithium oxide and hydroxide, by 411%; alumina, by 380%; steel scrap, by 336%; unwrought aluminum, by 215%; pig iron and cast iron, by 207%; coal, by 144%; fluorspar, by 142%; unwrought cobalt, by 110%; coke,

by 70%; rare-earth ore, metals, and compounds, by 63%; steel shapes and sections, by 56%; synthesized graphite, by 51%; petroleum refinery products, by 49%; zinc oxide and peroxide, by 47%; steel tube and pipe, by 44%; crude petroleum, by 42%; ferroalloys, by 35%; aluminum semimanufactures, by 34%; wire of steel or iron, by 31%; unwrought antimony, by 27%; tungstate salts and natural graphite, by 18% each; cement and clinker, by 16%; steel bars and rods, by 14%; fused magnesia, by 12%; and steel sheets and plates, by 10%. The export value of unwrought tin and unwrought copper decreased by 22% and 10%, respectively (table 3).

The mineral commodities for which the import value increased by 10% or more compared with that in 2021 included lithium carbonate, for which the value increased by 12 times; potassium chloride, by 116%; unwrought aluminum, by 86%; lithium oxide and hydroxide, by 72%; gold, by 62%; aluminum scrap, by 61%; tin ore and concentrate, by 54%; natural gas, by 53%; bauxite, by 44%; crude petroleum, by 42%; chromite, by 34%; polycrystalline silicon, by 30%; cobalt (matte and unwrought), by 26%; steel scrap, by 24%; zinc ore and concentrate, by 23%; coal, by 19%; liquefied natural gas, by 18%; and manganese ore and concentrate and petroleum refinery products, by 17% each. The mineral commodities for which the import value decreased by 10% or more compared with that in 2021 included urea, for which the import value decreased by 88%; steel bars and rods, by 61%; aluminum semimanufactures, by 39%; iron ore, by 31%; alumina, by 26%; lead ore and concentrate and titanium dioxide, by 22% each; compound fertilizers, by 20%; diamond, by 14%; and steel shapes and sections, by 13% (table 4).

Commodity Review

Metals

Cobalt.—In 2022, China's production of mined cobalt (Co content in polymetallic ore) was stable at 2,000 metric tons (t) (estimated), the same as that in 2021, and production of refined cobalt metal and chemical products increased by 13% to 145,000 t, which accounted for approximately 88% of global production. Of the refined cobalt, China accounted for 91% of the world's production of cobalt chemical products and 76% of the world's production of refined cobalt metal (table 1; Cobalt Institute, 2023, p. 26, 27).

In 2022, exports of cobalt tetroxide decreased by 25% to 4,843 t, of which 65% went to the Republic of Korea. Exports of unwrought cobalt metal increased by 163% to 3,123 t, of which 32% went to the Netherlands. In 2022, imports of cobalt ore and concentrate increased by 39% to 26,237 t, of which more than 99% was imported from Congo (Kinshasa). This increase was despite a halt in imports of cobalt from the Tenke Fungurume copper-cobalt mine starting in July because the Government of Congo (Kinshasa) had placed a suspension on exports from the mine owing to a royalty dispute. Tenke Fungurume had 3.34 Mt of cobalt resources grading 0.25% cobalt and, in terms of its resources, was the world's second-largest cobalt mine. CMOC Group Ltd. of China (formerly China Molybdenum Co. Ltd.) had an 80% share in the Tenke Fungurume Mine, and Congo (Kinshasa)'s state-owned La Générale des Carrières

et des Mines (Gécamines) held the remaining 20% share. China accounted for approximately 80% of the ownership of all the cobalt mines in Congo (Kinshasa) and received 84% of Congo (Kinshasa)'s total cobalt exports in 2022. Imports of hydrometallurgical cobalt intermediate products into China increased by 14% to about 361,000 t, of which more than 98% was from Congo (Kinshasa) (Andrade, 2022; Rolley and Reid, 2022; Zen Innovations AG, 2023; CMOC Group Ltd., 2025).

Copper.—In 2022, Zijin Mining Group Co. Ltd., which was the sixth-ranked copper producer in the world, had 73 Mt of copper resources at the end of 2022. Zijin Mining's global production of mined copper increased by 48.7% to 877,000 t, owing partly to the commencement of the first phase of production at three new mines in 2022—the Kamoak-Kakula copper mine in Congo (Kinshasa), which produced 150,013 t of copper; the Cukaru Peki copper mine in Serbia, 111,021 t; and the Julong copper project, which included the Qulong Mine and the Rongmucuola Mine mining the same copper orebody in Lhasa, Xizang Autonomous Region (Tibet), 57,603 t. The existing Duobaoshan Mine in Heilongjiang Province and the Zijinshan copper-gold mine in Fujian Province produced 110,568 t and 86,012 t, respectively, in 2022 (Daly, 2021; Zijin Mining Group Co. Ltd., 2023, p. 9, 32–34).

In April, Yanggu C&D Copper Co. Ltd. (a subsidiary of Xiamen C&D Group) signed a trusteeship agreement with Yanggu Xiangguang Copper Co. Ltd. in Liaocheng, Shandong Province, which suspended production in March owing to a liquidity crisis. Yanggu C&D restored metal production in April using Xiangguang Copper's assets, including its site, equipment, and labor force; the facility had an production capacity of 500,000 metric tons per year (t/yr) of smelted copper and 400,000 t/yr of copper cathodes (S&P Global, 2022; Yang and others, 2022, p. 11; Xiamen C&D Inc., 2024).

Germanium.—In 2022, Yunnan Chihong Germanium Industry Co. Ltd. had a production capacity of 60 t/yr of germanium-containing products (gross weight); its output increased to 55.9 t, or by 20% compared with that in 2021, and accounted for 44% of China's total production. Yunnan Chihong completed a production line for 30 t/yr of optical fiber-grade ultra-high-purity germanium tetrachloride in June. As of December 2022, Yunnan Chihong had 443 t of germanium resources and 186 t of germanium reserves (Ge content) associated with lead-zinc ore from the Chihong Huize Mine and the Yiliang Chihong Mine in Yunnan Province (Yunnan Chihong Zinc and Germanium Co. Ltd., 2023, p. 7, 8, 18, 20).

Gold.—Production of mined gold increased by 13% to 372,048 kilograms (kg) in 2022, of which 295,423 kg was from gold mines and 76,626 kg was produced from nonferrous byproducts. In 2022, China's gold consumption was 1,002 t, which was a decrease of 11% compared with that in 2021. The consumption sectors included gold jewelry, which accounted for 654,320 kg of gold consumption; gold bars and gold coins, 258,940 kg; and industrial and other uses, 88,480 kg (China Gold Association, 2023).

Tongling Nonferrous Metal Group Co. Ltd. produced 29,820 kg of gold from the Shaxi copper mine in Anhui Province, which accounted for 8% of the total gold production of China, followed by the Jiaojia, Sanshandao, and Xicheng

gold mines in Shandong, which were owned by Shandong Gold Mining Co. Ltd. and produced 10,036 kg, 5,460 kg, and 5,691 kg, respectively; the Changshan gold mine in Nei Mongol, which was owned by China Gold International Resources Corp. Ltd. of Canada and produced 4,608 kg; and the Dexing gold mine in Jiangxi Province, which was owned by Jiangxi Copper Co. Ltd. and produced 3,710 kg (estimated) (China Gold International Resources Corp. Ltd., 2023, p. 43; Jiangxi Copper Co. Ltd., 2023, p. 39; Mining Technology, 2023; Shandong Gold Mining Co. Ltd., 2023, p. 16).

In 2022, Zijin Mining acquired the following domestic and overseas assets: 20% equity interest in Zhaojin Mining Industry Co. Ltd. and an additional 22% share (totaling 44%) in Zhaojin's Haiyu gold mine, which was under construction and had 562 t of gold resources, making it the largest stand-alone gold mine in China in terms of resources; 45.7% interest in the Kharmagtii copper-gold mine in Mongolia, which had 242 t of gold resources; 95% interest in the Rosebel gold mine in Suriname, which had 217 t of gold resources and 10 t/yr of gold production capacity; and 100% interest in Xinjiang Weifu Mining Co. Ltd. and its 70% share of the Sawayaerdun gold deposit in Wuqia, Xinjiang Uyghur, which had 60 t of gold resources. In 2022, Zijin Mining produced 56.3 t of mined gold and 259 t of refined gold, and held 1,191 t of reserves and 3,117 t of resources on an equity basis, including in overseas operations (Zijin Mining Group Co. Ltd., 2022, p. 1; 2023, p. 13, 23–25, 28, 36).

Indium.—China's production of primary indium increased by 14% to 670 t (estimated) in 2022. Indium metal was produced mainly by zinc smelting enterprises or recycling enterprises using smelted slag, ash, and steel plant soot. In 2022, byproduct output of indium from primary lead and zinc smelters and recycled indium output from waste materials increased by 3% and 36%, respectively (table 1; Zuojun, 2023, p. 2, 3).

Iron and Steel.—In July, state-owned China Mineral Resources Group Co. Ltd. (CMRG) was established to centralize iron ore purchases for approximately 20 major steelmakers in China and to negotiate prices with the leading iron ore suppliers, such as BHP Group Ltd. and Fortescue Ltd. of Australia, Rio Tinto Group of the United Kingdom, and Vale S.A. of Brazil. Prior to this iron ore purchase system, China had applied a similar system to the copper industry for copper concentrate imports to China (Bhowmik and Liu, 2022; Crowe and others, 2022).

Rare Earths.—China's rare-earth industry continued to be regulated by production quotas determined jointly by the MNR and the Ministry of Industry and Information Technology. The quotas for four Government-designated companies were 210,000 t/yr for rare-earth mining (an increase of 25% from the quotas in 2021) and 202,000 t/yr for smelting and separation (an increase of 24.7%). The mining quota for light rare earths (LREs) increased by 28% to 190,850 t; that of heavy rare earths (HREs), which had a significant pollutive manufacturing process but had critical applications for the defense and medical industries, remained at 19,150 t (China Nonferrous Metals News, 2021; Chen and Erickson, 2022; Mysteel, 2022; SMM News, 2022b).

In 2022, the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) continued to promote consolidation of the rare-earth industry. In June, China Northern Rare Earth (Group) High-Tech Co. Ltd., the leading rare-earth producer in the country, announced the merger of its subsidiaries Baotou Huaxing Rare Earth Technology Co. Ltd. and Baotou Keri Rare Earth Materials Co. Ltd. Based on China's 2022 quotas, China Northern Rare Earth accounted for 74% of LRE mining, 67% of rare-earth mining, and 64% of rare-earth smelting in China. On September 21, China Rare Earth Group Co. Ltd. signed a cooperation agreement with Jiangxi Copper Corp. Ltd. for integration of rare-earth resources, production, operations, and research. Minmetals Rare Earth Co. Ltd. in Yuncheng, Shanxi Province, which was part of China Rare Earth Group, was renamed China Rare Earth Resources and Technology Co. Ltd. (SMM News, 2021; China Nonferrous Metals News, 2022; van Wyk, 2022; China Rare Earth Resources and Technology Co. Ltd., 2023, p. 14).

China's exports of rare earths including rare-earth ore, metal, and compounds totaled 48,728 t in 2022 compared with 48,918 t in 2021. In 2022, China imported 45,852 t of HRE raw materials, of which 53% was exported by Burma compared with 76% in 2021; the United States, 18% compared with less than 0.1%; Malaysia (by processing ore from Australia), 16% compared with 11%; and Vietnam, 8% compared with 7%. China imported 45,917 t of LRE raw materials in 2022, of which Madagascar accounted for 54% of the imports compared with 69% in 2021; Thailand, 22% compared with 27%; and Vietnam, 14% compared with 1% (tables 1, 3; United Nations, 2023).

In 2022, Chinese enterprises continued to acquire overseas rare-earth assets. Shenghe Resources Holdings Co. Ltd. acquired a 19.9% stake in Peak Rare Earths Ltd. of Australia, which operated the Ngualla rare-earth project in Tanzania; this project had an expected production capacity of 16,740 t/yr of concentrate (rare-earth-oxide equivalent). In 2021, the Aluminum Corporation of China (Chinalco) signed a nonbinding memorandum of understanding with Ionic Rare Earths Ltd. of Australia to hold exclusive discussions on strategic cooperation to accelerate the development and production of rare earths. Ionic Rare Earths owned the Makuutu project in Uganda, which is an ionic adsorption clay deposit rarely found outside of China and Burma. In May, it was announced that the mineral resources at Makuutu were 532 Mt at a grade of 640 parts per million rare-earth oxides. The project was expected to start up by 2024 (Chen and Erickson, 2022; Innovation News Network, 2022; Lin, 2022).

Silicon.—In 2022, production of silicon metal increased by 20% to 3.50 Mt. As of November, China's silicon metal production capacity had increased to 6.29 million metric tons per year (Mt/yr), or by 19% compared with that in 2021. Companies that increased their capacity in 2022 included Xinjiang East Hoshine Silicon Industry Co. Ltd., by 300,000 t/yr; Inner Mongolia Xinyuan Silicon Material Technology Co. Ltd., by 150,000 t/yr; Xinjiang GCL Silicon Technology Co. Ltd., by 100,000 t/yr; Xinjiang Jingheyuan New Materials Co. Ltd., by 60,000 t/yr; Xinjiang Xintao Silicon Industry Co. Ltd., by 30,000 t/yr; and Xinjiang Yugui Technology Co. Ltd., by 15,000 t/yr. Silicon metal smelting is energy intensive, and

China's production capacity was concentrated in Xinjiang Uyghur (34%), Yunnan (22%), and Sichuan (16%) Provinces owing to the low energy prices in those areas. Polysilicon output increased by 67% to 812,500 t in 2022, and the production capacity almost doubled to 2.4 Mt/yr owing to the strong demand for photovoltaic panel production (tables 1, 2; China Nonferrous Metals News, 2022; SMM News, 2022a, 2023a, b; Schnebele, 2023; Sina Finance, 2023; Zhou, 2023).

Titanium.—China's titanium ore mining and processing facilities were concentrated mainly in Panzhihua and Xichang, Sichuan Province, together accounting for 87% of titanium ore production in the country. Titanium dioxide production was concentrated in Anhui, Guangxi, Henan, Shandong, and Sichuan Provinces, together accounting for 78% of the total production. Titanium sponge production was concentrated in Liaoning, Xinjiang Uyghur, and Yunnan Provinces, together accounting for 59% of the total production. In 2022, production of titanium mineral concentrates (TiO_2 content) increased by 10% to 3.14 Mt, accounting for 36% of global production. Production of titanium dioxide increased by 4.3% to 3.86 Mt. Production of titanium sponge increased by 25% to 175,000 t (estimated), accounting for 63% of global production. Production of titanium ingot increased by 20% to 145,000 t comprising 81,000 t of pure titanium ingot and 63,000 t of alloy ingot. Imports of titanium mineral concentrates (TiO_2 content) decreased by 9.4% to 1.55 Mt (table 1; An and others, 2023, p. 1–3).

Industrial Minerals

Graphite.—China's production of natural graphite in 2022 increased by 2% to 1.21 Mt comprising 1.03 Mt of crystalline flake graphite and 182,000 t of amorphous graphite. China accounted for approximately 65% of global production of natural graphite, 69% of synthetic graphite, and 100% of processed spherical graphite. Exports of natural graphite decreased by 14% to 245,000 t; the leading destinations for China's graphite exports were Japan (which received 35% of the graphite exports), the Republic of Korea (22%), and the United States (13%). Synthetic graphite exports increased by 13% to 802,000 t; major destinations for these exports were Indonesia (which accounted for 21% of the synthetic graphite exports), the United States (14%), Japan (9.4%), and the Republic of Korea (9.2%) (tables 1, 3; Nouveau Monde Graphite, 2023, p. 18; United Nations, 2023).

In 2022, Heilongjiang Hegang Graphite Industry Co. Ltd., which was a subsidiary of China Minmetals Corp., was constructing several production facilities at the Yunshan Mine in Luobei, Heilongjiang Province. These facilities included a mining site with a production capacity of 6 Mt/yr of graphite flake ore; a graphite refining plant with the capacity to produce 200,000 t/yr of graphite powder; and a processing facility with the capacity to produce 50,000 t/yr of spherical graphite, 50,000 t/yr of high purity graphite, and 50,000 t/yr of flake anode. The mine was the biggest graphite mine in Asia, containing more than 1 billion metric tons of resources (Gt) (Daly, 2019; Argus, 2022).

BTR New Material Group Co. Ltd. was constructing a 600,000-t/yr integrated production facility that would have the capacity to produce 400,000 t/yr of graphite flake and

200,000 t/yr of spherical graphite and anode materials in three phases. The first phase was to include the production of 200,000 t/yr of graphite flake and 50,000 t/yr of spherical graphite and anode materials, and operations were expected to start up in 2023. Jixi Northeast Asia Mineral Resources Co. Ltd. was constructing a 100,000-t/yr flake graphite processing plant, which was expected to begin operating in 2023 (Argus, 2022).

Lithium.—In 2022, China's production of lithium carbonate and lithium hydroxide increased by 33% and 30%, respectively, despite such challenging circumstances as hydropower rationing owing to a drought in Sichuan Province in August and suspended production of lithium carbonate because of environmental investigations and infrastructure upgrades in Yichun, Jiangxi Province, in November. These increases were attributed to the continued development of electric vehicle and energy storage industries in the country. In 2022, the output value of the lithium-ion battery industry was \$180 billion and the total value of lithium-ion battery exports was \$51.4 billion. Zijin Mining produced less than 1 t of lithium in 2022; however, the company owned more than 12.2 Mt of lithium carbonate equivalent (LCE) resources, including 4.3 Mt of LCE reserves at the 3Q salt lake lithium project in Argentina, 2.16 Mt of resources (LCE) at the Lakkor Tso Salar lithium project in Xizang, and 840,000 t of resources (LCE) at the Xiangyuan lithium project in Hunan (table 1; Global Times, 2022; Liu and Xu, 2022; Ministry of Natural Resources, 2023b; Zhang, 2023; Zijin Mining Group Co. Ltd., 2023, p. 12, 24, 25).

In 2022, exports of lithium carbonate increased to 10,430 t, or by 33% compared with those in 2021, and exports of lithium oxide and hydroxide increased to 93,450 t, or by 27%. Imports of lithium carbonate increased by 68% to 136,000 t and those of lithium oxide and hydroxide decreased by 14% to 3,100 t. The changing trade trends in 2022 were attributed mainly to the shift of the industry from lithium nickel-manganese-cobalt oxide (NMC) batteries to lithium iron phosphate batteries in China, which use lithium carbonate rather than lithium hydroxide and oxide (tables 3, 4; Chen and others, 2022).

In May, Ganfeng Lithium Group Co. Ltd. commenced the Fengcheng project in Yichun, Jiangxi Province, which was designed to produce 50,000 t/yr of lithium-ion energy materials (LCE equivalent) from spodumene concentrate. In December, Sunwoda Electronic Co. Ltd., a leading battery maker, announced a \$2.4 billion investment to build a 50,000-t/yr lithium carbonate plant in Yichun, Jiangxi Province. Sunwoda Electronic would subsequently set up a joint venture with Yichun Mining Co. Ltd. to implement vertical production flow comprising lepidolite ore, lithium salts, and cathode materials. In December, Hainan Xingzihai New Materials Co. Ltd. (a wholly owned subsidiary of Hainan Mining Co. Ltd.) started the construction of a 20,000-t/yr battery-grade lithium hydroxide plant in Danzhou, Hunan Province, which was expected to be completed in the first quarter of 2024 (Ganfeng Lithium Group Co. Ltd., 2022; Hainan Mining Co. Ltd., 2022; Leech, 2022).

Until 2021, China accounted for approximately 65% of the global lithium processing and refining capacity; however, the country had only 25% of the global lithium resources. In 2022, Chinese companies continued to acquire overseas lithium assets to expand their access to global resources, and

they increased domestic acquisition activities as well. Ganfeng Lithium acquired Lithea Inc., which owned the Pozuelos and Pastos Grandes lithium salt flats in Salta, Argentina, targeting 30,000 t/yr of LCE in the first phase. Ganfeng Lithium also acquired the Songshugang tantalum-niobium project in Hengfeng, Jiangxi Province, which had 604,000 t of resources (Li₂O content). In May, Zhejiang Huayou Cobalt Co. Ltd. acquired the \$422 million Arcadia project, which had a designed capacity of 4.5 Mt/yr of ore from a spodumene mine and 400,000 t/yr of concentrate from a processing plant in Harare, Zimbabwe. In October, Zijin Mining successfully produced 20 kg of lithium carbonate products at the 3Q lithium salt lake project in Catamarca, Argentina. The project had a designed capacity of 20,000 t/yr of LCE and 1.67 Mt of reserves. In November, Tianqi Lithium Energy Australia, a joint venture between Tianqi Lithium Corp. of China (51% share) and IGO Lithium Holdings Pty. Ltd. of Australia (49%), commenced commercial production of 24,000 t/yr of lithium hydroxide in Kwinana, Australia (Chen, 2022a; Chen and Duqian, 2022; Go, 2022; He, 2022; Leech, 2022; Nelson, 2022; NS Energy, 2022; Shu, 2022; Ganfeng Lithium Co. Ltd., 2023, p. 5).

In 2022, China faced challenges acquiring overseas lithium assets owing to countries maintaining control of their natural resources. In April, Australia blocked Yibin Tianyi Lithium Industry Co. Ltd. from taking a stake in AVZ Minerals Ltd., which owned the Manono lithium-tin-tantalum project in Congo (Kinshasa). In August, the Inflation Reduction Act was enacted in the United States, which, by leveraging tax credits, was intended in part to reduce use of critical minerals and battery components manufactured or assembled by foreign entities of concern. In October, Canada updated the Investment Canada Act regarding its foreign investment policy in the mineral sector, which restricted investment or takeovers in critical minerals by foreign state-owned enterprises by applying special requirements to such activities. In November, Canada ordered three Chinese companies to divest from the following Canadian lithium mining companies: Sinomine (Hong Kong) Rare Metals Resources Co.'s investment in Power Metals Corp. (5.7% share), which owned cesium, lithium, and tantalum assets in Ontario; Chengze Lithium International Ltd.'s investment in Lithium Chile Inc. (19% share) based in Alberta; and Zangge Mining Investment (Chengdu) Co. Ltd.'s investment in Ultra Lithium Inc. based in British Columbia and its lithium project in Argentina (Home, 2022; White House, The, 2022, p. 2, 48; Lu and others, 2023; Nuccitelli, 2023).

Reserves and Resources

In 2022, the investment in geologic exploration for nonfuel minerals and coal increased by 7.2% to \$2.80 billion, of which the exploration investment in coal was \$248 million; uranium, \$175 million; gold, \$161 million; copper, \$99 million; lead-zinc, \$86 million; iron ore, \$64 million; phosphate rock, \$43 million; bauxite, \$38 million; tungsten, \$22 million; and graphite, \$21 million. Exploration investment in mineral resources in Inner Mongolia Province was \$316 million, followed by Xinjiang Uyghur, \$190 million; Gansu, \$161 million; Guangdong, \$142 million; and Hebei, \$140 million. The investment in phosphate rock exploration increased by 97%

in 2022, followed by uranium, 64%; tin, 45%; molybdenum, 33%; and coal, 23%. The exploration investment in rare earths decreased by 33% in 2022; graphite, 21%; potash, 18%; and bauxite, 16%. The number of newly discovered mineral deposits in 2022 was 132. In 2022, China's investment in geologic exploration for petroleum and natural gas increased by 3.1% from 2021 to \$12.4 billion. Table 5 shows China's reserves of selected mineral commodities as of 2022 (Ministry of Natural Resources, 2023a, p. 2; 2023c, p. 1, 10, 11, 13; National Bureau of Statistics of China, 2023b).

Outlook

According to International Monetary Fund, China's real GDP is forecast to increase at moderate rates of about 5% or less in the next few years as the economy continues to recover from the COVID-19 pandemic. In the short term, China's mineral industry may face challenges, such as supply chain disruptions resulting from the conflicts in Europe and the Middle East, the high cost of mineral fuels and raw mineral materials, increasing resource protectionism, and critical mineral resource competition. In the medium to long term, the Government is expected to continue to drive the consolidation of domestic mineral enterprises to improve operation efficiency, enhance international competitiveness, and reduce management costs. The output of China's mineral industry is expected to increase steadily as investments, capacities, and acquisition of overseas assets and deposits continue to increase. The mineral-processing sector is expected to continue to rely on imports for raw mineral materials, particularly for some battery-related mineral commodities such as cobalt, copper, lithium, nickel, and uranium. China is expected to remain a leading producer and consumer of some minerals and mineral products used in the manufacturing of electric vehicle batteries, solar panels, and wind turbines, and to play an important role in the global supply chain. China is expected to continue to control more than 50% of the global downstream capacities of cobalt, graphite, lithium, and nickel, at least in the short term. In addition to increased efforts in domestic resource exploration and development, China will likely continue to seek access to and ownership of overseas mineral resources, particularly critical minerals, for its supply chain security and international competitiveness (Asian Development Bank, 2023, p. 116; International Monetary Fund, 2023; Lu and others, 2023; Nedopil, 2023, p. 3, 10, 11; Xia and Han, 2024).

References Cited

Akama, Kenya, and Nitta, Yuji, 2023, U.S. and China butt heads over investment in Southeast Asia: Nikkei Asia [Tokyo, Japan], December 2. (Accessed January 2, 2024, via <https://asia.nikkei.com/Spotlight/Datawatch/U.S.-and-China-butt-heads-over-investment-in-Southeast-Asia>.)

Andrade, T.K., 2022, Chinese in Beijing run cobalt mines in Africa via modern technologies: Tech Times [New York, New York], December 7. (Accessed January 3, 2024, at <https://www.techtimes.com/articles/284549/20221207/chinese-beijing-run-cobalt-mines-africa-via-modern-technologies.htm>.)

Apodaca, L.E., 2024, Lime: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 108–109.

An, Z., Chen, Y., and Zhao W., 2023, 2022 China titanium industry development report: Iron Steel Vanadium Titanium, v. 44, no. 3, p. 1–8. (Accessed January 3, 2024, at <http://www.gftt.cn/cn/article/doi/10.7513/j.issn.1004-7638.2023.03.001>.) [In Chinese.]

Argus, 2022, Tight supply to underpin China graphite market in 2023: Argus [London, United Kingdom], December 23. (Accessed November 29, 2023, at <https://www.argusmedia.com/en/news/2403887-tight-supply-to-underpin-china-graphite-market-in-2023>.)

Asian Development Bank, 2023, People's Republic of China, *in* Asian development outlook April 2023: Manila, Philippines, Asian Development Bank, April, 317 p. (December 4, 2023, at <https://www.adb.org/sites/default/files/publication/863591/asiatic-development-outlook-april-2023.pdf>.)

Bazilian, M.D., 2022, The Inflation Reduction Act is the start of reclaiming critical mineral chains: Foreign Policy [Washington, DC], September 16. (Accessed December 29, 2023, at <https://foreignpolicy.com/2022/09/16/inflation-reduction-act-critical-mineral-chains-congress-biden/>.)

Bhowmik, Sneha, and Liu, Siyi, 2022, China's new state-run agency to start iron ore purchases—Bloomberg News: Thomson Reuters, December 16. (Accessed January 2, 2024, at <https://www.reuters.com/markets/commodities/chinas-new-state-run-agency-start-iron-ore-purchases-bloomberg-news-2022-12-16/>.)

BNN Bloomberg, 2021, China may ban rare earth technology exports on security concerns: BNN Bloomberg [Toronto, Ontario, Canada], February 19. (Accessed December 5, 2023, at <https://www.bnbnloomberg.ca/china-may-ban-rare-earth-technology-exports-on-security-concerns-1.1565765>.)

Bray, E.L., 2024, Magnesium metal: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 114–115.

Chen, Avery, 2022a, Ganfeng Lithium goes on \$1.80B lithium M&A spree in self-sufficiency bid: New York, New York, S&P Global, July 18. (Accessed November 8, 2023, at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/ganfeng-lithium-goes-on-1-80b-lithium-m-a-spree-in-self-sufficiency-bid-71148444>.)

Chen, Avery, 2022b, Zijin Mining sees supply disruption, exchange rate risks from Russian war: New York, New York, S&P Global, March 21. (Accessed December 22, 2023, at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/zijin-mining-sees-supply-disruption-exchange-rate-risks-from-russian-war-69437499>.)

Chen, Avery, and Duquiatan, Anna, 2022, Geopolitical fears, soaring prices spur lithium M&A frenzy in China: New York, New York, S&P Global, June 9. (Accessed November 8, 2023, at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/geopolitical-fears-soaring-prices-spur-lithium-m-a-frenzy-in-china-70642094>.)

Chen, Avery, and Erickson, Camille, 2022, Clean energy transition to fuel growth for China's rare earths sector in 2022: New York, New York, S&P Global, February 3. (Accessed November 23, 2023, at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/clean-energy-transition-to-fuel-growth-for-china-s-rare-earths-sector-in-2022-68604096>.)

Chen, L., Tang, J., and Lee, G., 2022, Commodities 2022—China's lithium markets to face supply squeeze: New York, New York, S&P Global, January 25. (Accessed April 17, 2024, at <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/012522-commodities-2022-chinas-lithium-markets-to-face-supply-squeeze>.)

China Gold Association, 2023, In 2022, China's gold output will be 372.048 tons, a year-on-year increase of 13.09%, and gold consumption will be 1,001.74 tons, a year-on-year decrease of 10.63%: Beijing, China, China Gold Association, January 19. (Accessed January 5, 2024, at <https://www.cngold.org.cn/news/show-3920.html>.) [In Chinese.]

China Gold International Resources Corp. Ltd., 2023, 2022 annual report: Vancouver, British Columbia, Canada, China Gold International Resources Corp. Ltd., March 30, 154 p. (Accessed April 16, 2024, at https://www.chinagoldintl.com/_resources/financials/2023/China-Gold-Annual-Report-2022-ENG.pdf?v=0325.)

China Internet Information Center, 2021, Mineral Resources Law of the People's Republic of China: Beijing, China, China Internet Information Center. (Accessed January 25, 2024, at <http://www.china.org.cn/english/environment/34342.htm>.)

China Nonferrous Metals News, 2021, Two departments—Mining, smelting and separating rare earths without quotas: China Nonferrous Metals News [Beijing, China], October 14. (Accessed April 16, 2024, at <https://www.cnmn.com.cn/ShowNews1.aspx?id=430945>.) [In Chinese.]

China Nonferrous Metals News, 2022, State-owned Assets Supervision and Administration Commission—Promote rare earth integration and strengthen listing platform: China Nonferrous Metals News [Beijing, China], September 22. (Accessed November 22, 2023, at <https://www.cnmn.com.cn/ShowNews1.aspx?id=439913>.) [In Chinese.]

China Rare Earth Resources and Technology Co. Ltd., 2023, 2022 annual report: Zhanggong, Ganzhou, China, China Rare Earth Resources and Technology Co. Ltd., April, 179 p. (Accessed June 11, 2024, at <http://www.cmretd.com/n1074151/n1074324/c1094475/part/1094483.pdf>.)

CMOC Group Ltd., 2025, The DRC - copper and cobalt: Luoyang, Henan, China, CMOC Group Ltd. webpage. (Accessed February 3, 2025, at <https://en.cmoc.com/html/Business/Congo-Cu-Co/>.)

Cobalt Institute, 2023, Cobalt market report 2022: Guildford, United Kingdom, Cobalt Institute, May, 45 p. (Accessed January 3, 2024, at https://www.cobaltinstitute.org/wp-content/uploads/2023/05/Cobalt-Market-Report-2022_final.pdf.)

Cordier, D.J., 2024, Rare earths: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 144–145.

Crowe, D., Azzo, M., Mansour, S., MacGregor, S., and Cohen, B., 2022, China establishes mineral resources group to centralise iron ore purchasing: Sidney, New South Wales, Australia, Clayton Utz, August 4. (Accessed June 11, 2024, at <https://www.claytonutz.com/insights/2022/august/china-establishes-mineral-resources-group-to-centralise-iron-ore-purchasing>.)

Daly, Tom, 2019, China Minmetals sets up graphite unit in battery material push: Thomson Reuters, December 9. (Accessed November 9, 2023, at <https://www.reuters.com/article/us-china-minmetals-graphite-idUSKBN1YN0IW>.)

Daly, Tom, 2021, China's Zijin starts production at giant Tibet copper mine: Thomson Reuters, December 27. (Accessed January 4, 2024, at <https://www.reuters.com/markets/commodities/chinas-zijin-starts-production-giant-tibet-copper-mine-2021-12-27/>.)

Energy Institute, 2023, Statistical review of world energy 2023 (72d ed.): London, United Kingdom, Energy Institute, 64 p. (Accessed January 2, 2023, at https://www.energiinst.org/_data/assets/pdf_file/0004/1055542/EI_Stat_Review_PDF_single_3.pdf.)

Flanagan, D.M., 2024, Tellurium: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 178–179.

Gambogi, Joseph, 2024, Titanium and titanium dioxide: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 186–187.

Ganfeng Lithium Group Co. Ltd., 2022, Fengcheng project officially started: Jiangxi, China, Ganfeng Lithium Group Co. Ltd., news, July 2. (Accessed November 20, 2023, at https://www.ganfenglithium.com/new_detail_en/id/47.html.)

Ganfeng Lithium Group Co. Ltd., 2023, Overseas regulatory announcement: Jiangxi, China, Ganfeng Lithium Group Co. Ltd., 9 p. (Accessed January 3, 2024, at <https://www1.hkexnews.hk/listedco/listconews/sehk/2022/0325/2022032501697.pdf>.)

Global Times, 2022, Enterprises suspend lithium production due to environmental issue in Yichun: Global Times [Beijing, China], December 6. (Accessed November 21, 2023, at <https://www.globaltimes.cn/page/202212/1281271.shtml>.)

Go, Jiyeong, 2022, Chinese companies expanding footprints in global lithium mines: fDi Intelligence [London, United Kingdom], August 29. (Accessed November 20, 2023, at <https://www.fdiintelligence.com/content/feature/chinese-companies-expanding-footprint-in-global-lithium-mines-81261>.)

Hainan Mining Co. Ltd., 2022, Hainan Mining's lithium hydroxide project officially started construction and is expected to be completed and put into production in the first quarter of 2024: Hainan, China, Hainan Mining Co. Ltd., December 15. (Accessed November 9, 2023, at <https://mp.weixin.qq.com/s/xPfe8QsQ90CeRAKVHJp0UA>.) [In Chinese.]

Hatfield, A.K., 2024, Cement: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 54–55.

He, Yuting, 2022: Zijin Mining's 3Q lithium salt lake project officially started: Seetao [Beijing, China], March 24. (Accessed November 20, 2023, at <https://www.seetao.com/details/146593.html>.)

Home, Andy, 2022, Canada slams the door on China in critical minerals race: Thomson Reuters, November 7. (Accessed January 8, 2024, at <https://www.reuters.com/markets/commodities/canada-slams-door-china-critical-minerals-race-2022-11-07/>.)

Hui, Mary, 2021, What are critical minerals?: Quartz [New York, New York], September 13. (Accessed November 29, 2021, at <https://qz.com/2056365/what-are-critical-and-strategic-minerals/>.)

Huld, Arendse, 2023, China's changing labor market—Trends and future outlook: China Briefing, April 19. (Accessed April 12, 2024, at <https://www.china-briefing.com/news/chinas-labor-force-data-trends-and-future-outlook/>.)

Innovation News Network, 2022, Examining the potential of magnet rare earths at the Makuutu rare earth project: Innovation News Network, July 18. (Accessed June 12, 2024, at <https://www.innovationnewsnetwork.com/magnet-rare-earths-makuutu-rare-earth-project/23050/>.)

International Monetary Fund, 2023, World economic outlook database—China: Washington, DC, International Monetary Fund, October. (Accessed January 15, 2024, at https://www.imf.org/en/Publications/WEO/weo-database/2023/October/weo-report?c=924,&s=NGDP_RPCH,&sy=2021&ey=2028&ssm=0&scsm=1&scc=0&ssc=0&sic=0&sort=country&ds=&br=1.)

Jaskula, B.W., 2024, Gallium: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 74–75.

Jiangxi Copper Co. Ltd., 2023, 2022 annual report: Nanchang, Jiangxi, China, Jiangxi Copper Co. Ltd., May 4, 383 p. (Accessed January 7, 2024, at <http://en.jxcc.com/uploadFiles/file/20230504/8da3e5deb89242178bc971ab81cc589e.pdf>.)

Kawate, Iori, 2023, Real estate and job worries slow China's economy: Nikkei Asia [Tokyo, Japan], July 18. (Accessed December 4, 2023, at <https://asia.nikkei.com/Economy/Real-estate-and-job-worries-slow-China-s-economy>.)

Leech, James, 2022, China's leading battery maker Sunwoda invests \$2.4 bill in upstream lithium projects: New York, New York, S&P Global, December 8. (Accessed November 20, 2023, at <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/120822-chinas-leading-battery-maker-sunwoda-invests-24-bil-in-upstream-lithium-projects>.)

Lin, Qiu, 2022, Chinese enterprises' overseas rare earth mergers and acquisitions can achieve a win-win situation: China Nonferrous Metals News [Beijing, China], February 22. (Accessed November 22, 2023, at <https://www.cnmm.com.cn>ShowNews1.aspx?id=433851>.) [In Chinese.]

Liu, Siyi, and Xu, Muyu, 2022, China lithium hub Sichuan cuts power supply to industry amid heatwave: Thompson Reuters, August 15. (Accessed January 23, 2024, at <https://www.reuters.com/article/idUSKBN2PL018>.)

Londono, Vanessa, 2024, Magnesium compounds: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 112–113.

Lu, Y., Luo, G., Shi, Y., and Jia, D., 2023, China's hunt for strategic new energy minerals: Nikkei Asia [Tokyo, Japan], February 14. (Accessed November 21, 2023, at <https://web.archive.org/web/20231121171734/https://asia.nikkei.com/Spotlight/Caixin/China-s-hunt-for-strategic-new-energy-minerals>.)

McRae, M.E., 2024, Fluorspar: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 72–73.

Merrill, Adam, 2024a, Aluminum: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 32–33.

Merrill, Adam, 2024b, Bauxite and alumina: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 42–43.

Mining Technology, 2023, The five largest gold mines in operation in China: Mining Technology [New York, New York], July 21. (Accessed January 7, 2024, at <https://www.mining-technology.com/marketdata/five-largest-gold-mines-china/?cf-view>.)

Ministry of Commerce, 2022, Notice on the revision of China's catalog of technologies prohibited and restricted from export and public comments: Beijing, China, Ministry of Commerce, December 30. (Accessed December 5, 2023, at <http://fms.mofcom.gov.cn/article/tongjiliao/202212/20221203376696.shtml>.) [In Chinese.]

Ministry of Commerce, 2023, 2022 statistical bulletin of China's outward foreign direct investment: Beijing, China, Ministry of Commerce, October 9, 49 p. (Accessed January 22, 2024, at https://cif.mofcom.gov.cn/cif/html/upload/20231009140131502_2022%E5%B9%B4%E5%BA%A6%E4%B8%AD%E5%9B%BD%E5%AF%B9%E5%A4%96%E7%9B%B4%E6%8E%A5%E6%8A%95%E8%B5%84%E7%BB%9F%E8%AE%A1%E5%85%AC%E6%8A%A5.pdf.) [In Chinese.]

Ministry of Natural Resources, 2022, 2022 China mineral resources: Beijing, China, Ministry of Natural Resources, September, 55 p. (Accessed August 15, 2023, at https://www.mnr.gov.cn/sj/sjfw/kc_19263/zgkczybg/202209/P020220921322252399161.pdf.)

Ministry of Natural Resources, 2023a, 2022 national non-oil and gas geologic exploration statistical annual report: Beijing, China, Ministry of Natural Resources, May 31, 18 p. (Accessed October 6, 2023, at <http://gi.mnr.gov.cn/202306/P020230606613494406971.doc>.) [In Chinese.]

Ministry of Natural Resources, 2023b, 2022 top 10 news releases of China's mining industry: Beijing, China, Ministry of Natural Resources, January 1. (Accessed January 2, 2024, at https://www.mnr.gov.cn/dt/kc/202301/t20230101_2771919.html.) [In Chinese.]

Ministry of Natural Resources, 2023c, 2023 China mineral resources: Beijing, China, Ministry of Natural Resources, October, 58 p. (Accessed December 4, 2023, at https://m.mnr.gov.cn/sj/sjfw/kc_19263/zgkczybg/202310/P020231030522367682661.pdf.)

Mysteel, 2022, The two departments issued the second batch of total control targets for rare earth mining, smelting and separation in 2022: Mysteel [Shanghai, China], August 17. (Accessed November 21, 2023, at https://m.mysteel.com/22/0817/17/58682E7B25DBABF3_abc.html.) [In Chinese.]

National Bureau of Statistics of China, 2022a, China statistical yearbook 2021: Beijing, China, National Bureau of Statistics of China. (Accessed December 27, 2023, via <https://www.stats.gov.cn/sj/ndsj/2022/indexeh.htm>.)

National Bureau of Statistics of China, 2022b, Industrial production operation in December 2021: Beijing, China, National Bureau of Statistics of China, January 18. (Accessed January 27, 2023, at http://www.stats.gov.cn/english/PressRelease/202201/20220118_1826495.html.)

National Bureau of Statistics of China, 2023a, 2022 China nonferrous metals industry economic operation report: Beijing, China, National Bureau of Statistics of China, 13 p. (Accessed December 4, 2023, at <http://lwzb.stats.gov.cn/pub/lwzb/bztt/202306/W020230605413586355947.pdf>.) [In Chinese.]

National Bureau of Statistics of China, 2023b, 2022 China petroleum and chemical industry economic operation report: Beijing, China, National Bureau of Statistics of China, 8 p. (Accessed October 6, 2023, at <http://lwzb.stats.gov.cn/pub/lwzb/bztt/202306/W020230605413585895677.pdf>.) [In Chinese.]

National Bureau of Statistics of China, 2023c, China statistical yearbook 2023: Beijing, China, National Bureau of Statistics of China. (Accessed December 27, 2023, via <http://www.stats.gov.cn/sj/ndsj/2023/indexeh.htm>.)

National Bureau of Statistics of China, 2023d, Industrial production operation in December 2022: Beijing, China, National Bureau of Statistics of China. (Accessed January 11, 2024, at http://www.stats.gov.cn/english/PressRelease/202301/20230118_1892296.html.)

National Bureau of Statistics of China, 2024, China statistical yearbook 2024: Beijing, China, National Bureau of Statistics of China. (Accessed February 4, 2025, via <https://www.stats.gov.cn/sj/ndsj/2024/indexeh.htm>.)

Nedopil, Christoph, 2023, China belt and road initiative (BRI) investment report 2023 H1: Shanghai, China, Green Finance & Development Center, July, 26 p. (Accessed January 25, 2024, at https://greendc.org/wp-content/uploads/2023/07/Nedopil-2023_China-Belt-and-Road-Initiative-BRI-Investment-Report-2023-H1-1.pdf.)

Nelson, Banya, 2022, China's Huayou Cobalt to invest \$400 million in Zimbabwe lithium mine: Thomson Reuters, May 24. (Accessed January 3, 2024, at <https://www.reuters.com/article/zimbabwe-lithium-idUSKCN2NA0XE/>.)

Nouveau Monde Graphite, 2023, Graphite 101—Powering the clean energy transition: Saint-Michel-des-Saints, Quebec, Canada, Nouveau Monde Graphite, 32 p. (Accessed November 13, 2023, at <https://nmg.com/wp-content/uploads/2023/06/NMG-Graphite-101.pdf>.)

NS Energy, 2022, IGO, Tianqi Lithium achieve commercial production at Kwinana refinery: NS Energy [London, United Kingdom], December 5. (Accessed January 25, 2024, at <https://www.nsenergybusiness.com/news/kwinana-lithium-hydroxide-refinery-commercial-production/>.)

Nuccitelli, Dana, 2023, The Inflation Reduction Act is reducing U.S. reliance on China: Yale Climate Connections, September 20. (Accessed April 17, 2024, at <https://yaleclimateconnections.org/2023/09/the-inflation-reduction-act-is-reducing-u-s-reliance-on-china/>.)

Polyak, D.E., 2024, Vanadium: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 192–193.

Rolley, Sonia, and Reid, Helen, 2022, China's CMOC threatens legal action over Congo cobalt mine export block: Thomson Reuters, December 5. (Accessed January 3, 2024, at <https://www.reuters.com/article/idUSKBN2SP0PZ/>.)

S&P Global, 2022, Xiangguang Copper to resume production under trusteeship of China's Xiamen C&D: New York, New York, S&P Global, April 28. (Accessed January 4, 2024, at <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/042822-xiangguang-copper-to-resume-production-under-trusteeship-of-chinas-xiamen-c-d>.)

Sangine, E.S., 2024, Wollastonite: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 196–197.

Schnebele, E.K., 2023, Silicon—Advanced data release of the 2022 annual tables: U.S. Geological Survey, November 27. (Accessed November 28, 2023, at <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/media/files/myb1-2022-simet-ert.xlsx>.)

Schnebele, E.K., 2024, Silicon: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 160–161.

Shandong Gold Mining Co. Ltd., 2023, 2022 annual report: Shandong, China, Shandong Gold Mining Co. Ltd., April 26, 238 p. (Accessed January 7, 2024, at <https://www1.hkexnews.hk/listedco/listconews/sehk/2023/0426/2023042601316.pdf>.)

Sheaffer, K.N., 2024, Mercury: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 118–119.

Shedd, K.B., 2024, Tungsten: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 190–191.

Shu, Bo, 2022, Zijin Lithium Cosi produced the first batch of lithium carbonate pilot products: China Nonferrous Metal News [Beijing China], October 25. (Accessed November 20, 2023, at <https://www.cnmn.com.cn>ShowNews1.aspx?id=440397>.) [In Chinese.]

Sina Finance, 2023, 2023 outlook—Industrial silicon—The industry is riding the wave, and supply and demand continue to be strong: Sina Finance [Beijing, China], January 2. (Accessed April 17, 2024, at <https://finance.sina.cn/2023-01-02/detail-imxyuiei2196533.d.html>.) [In Chinese.]

SMM News, 2021, Northern rare earth—An increase of 82,496 million yuan to Huaxing rare earths: SMM News [Shanghai, China], January 28. (Accessed January 23, 2024, at <https://news.metal.com/newscontent/101385557/northern-rare-earths-an-increase-of-824961-million-yuan-to-huaxing-rare-earths>.)

SMM News, 2022a, Review of China silicon metal producing areas and capacity commissioning progress in 2022: SMM News [Shanghai, China], September 28. (Accessed January 11, 2023, at <https://news.metal.com/newscontent/101961599/review-of-china-silicon-metal-producing-areas-and-capacity-commissioning-progress-in-2022>.)

SMM News, 2022b, The Ministry of Industry and Information Technology and the Ministry of Natural Resources issued the first batch of rare earth total target control plan in 2022: SMM News [Shanghai, China], February 7. (Accessed November 21, 2023, at <https://news.metal.com/newscontent/101741948/the-ministry-of-industry-and-information-technology-and-the-ministry-of-natural-resources-issued-the-first-batch-of-rare-earth-total-target-control-plan-in-2022>.)

SMM News, 2023a, Everything you need to know about China's industrial silicon market: SMM News [Shanghai, China], February 6. (Accessed April 17, 2024, at <https://news.metal.com/newscontent/102084821/Everything-You-Need-to-Know-about-China%20%80%99s-Industrial-Silicon-Market/>.)

SMM News, 2023b, Exclusive—China's metals output in December: SMM News [Shanghai, China], January 9. (Accessed January 11, 2024, at <https://news.metal.com/newscontent/102061269/exclusive-chinas-metal-output-in-december>.)

State Council, The, 2024, China's non-ferrous metal sector reports stable growth in 2022: Beijing, China, The State Council, February 26. (Accessed April 11, 2024, at https://english.www.gov.cn/archive/statistics/202302/26/content_WS63fa9791c6d0a757729e73bd.html.)

Stewart, A.A., 2024a, Graphite (natural): U.S. Geological Survey Mineral Commodity Summaries 2024, p. 84–85.

Stewart, A.A., 2024b, Indium: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 90–91.

Tolcin, A.C., 2024, Bismuth: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 46–47.

Tuck, C.C., 2024, Iron and steel: U.S. Geological Survey Mineral Commodity Summaries 2024, p. 94–95.

United Nations, 2023, United Nations Comtrade database 2023: New York, New York, United Nations, Department of Economic and Social Affairs. (Accessed November 28, 2023, via <http://comtrade.un.org/data/>.)

U.S. Geological Survey, 2024, Mineral commodity summaries 2024: U.S. Geological Survey, 216 p.

van Wyk, Barry, 2022, More consolidation for China's rare earths industry as Beijing seeks geopolitical leverage: The China Project [New York, New York], June 6. (Accessed November 22, 2023, at <https://thechinaproject.com/2022/06/06/more-consolidation-for-chinas-rare-earths-industry-as-beijing-seeks-geopolitical-leverage/>.)

Wang, Zhenhua, 2022, The distance that can be reached—Feel the sincerity and surprise of the reform of the mining administration management system from the 25 local version No 7 documents of the country (part 1): Beijing, China, Zhong Lun Law Firm, March 29. (Accessed January 22, 2024, at <https://www.lexology.com/library/detail.aspx?g=4f53aeb7-8dde-40cb-ab42-83907b01e589>.) [In Chinese.]

White House, The, 2022, Building a clean energy economy—A guidebook to the Inflation Reduction Act's investments in clean energy and climate action: Washington, DC, The White House, December, 182 p. (Accessed November 21, 2023, at <https://int.nyt.com/data/documenttools/inflation-reduction-act-guidebook/778d1d7ffd51c454/full.pdf>.)

Wu, Guohua, and Li, Yingnan, 2023, China—Mining law and regulations 2024: International Comparative Legal Guides [London, United Kingdom]. (Accessed December 5, 2023, at <https://iclg.com/practice-areas/mining-laws-and-regulations/china>.)

Xia, Yining, and Han, Wei, 2024, China's debt-to-GDP ratio climbs to record 287.8% in 2023: Nikkei Asia [Tokyo, Japan], January 30. (Accessed January 28, 2025, at <https://asia.nikkei.com/Spotlight/Caixin/China-s-debt-to-GDP-ratio-climbs-to-record-287.8-in-2023>.)

Xiamen C&D Inc., 2024, Industrial investment: Xiamen, Fujian, Xiamen C&D Inc. (Accessed June 10, 2024, at <https://www.chinacnd.com/en/industries.html>.)

Yang, C., Zhang, H., and He X., 2022, Copper and copper fabrication monthly, June 2022, No. 305: Beijing, China, Antaike Information Development Co. Ltd. [or Antaike], June, 15 p.

Yunnan Chihong Zinc and Germanium Co. Ltd., 2023, Annual report 2022: Beijing, China, Yunnan Chihong Zinc and Germanium Co. Ltd., April 21, 252 p. (Accessed January 4, 2024, at <https://chxz.chinalco.com.cn/tzzx/dqbg/202304/P020230421558341320009.pdf>) [In Chinese.]

Zen Innovations AG, 2023, Global trade tracker: Bern-Kehrsatz, Switzerland, Zen Innovations AG database. (Accessed September 18, 2023, via https://www.globaltradetracker.com/?gad_source=1&gclid=CjwKCAiA74G9BhAEEiwA8kNfpSY2Ruzc7bOvjZAmz-30Qba2JR7VdEXRFh26qFsAhGSkzOC_IVbz7hoCUdoQAvD_BwE.)

Zhang, Ellen, and Yao, Kevin, 2023, China's property sector shrinks 5.1% in 2022—NBS: Thomson Reuters, January 17. (Accessed April 11, 2024, at <https://www.reuters.com/markets/asia/chinas-property-sector-shrinks-51-2022-nbs-2023-01-18/>.)

Zhang, Xuehui, 2023, The output value of China's lithium-ion battery industry will exceed 1.2 trillion yuan in 2022: China Nonferrous Metals News [Beijing, China], March 9. (Accessed November 20, 2023, at <https://www.cnmm.com.cn>ShowNews1.aspx?id=443131>) [In Chinese.]

Zhou, Furong, 2023, Why did the price of silicon material surge by 30%, and how will it trend in the second half?: China Nonferrous Metals News [Beijing, China], January 30. (Accessed November 29, 2023, at <https://www.cnmm.com.cn>ShowNews1.aspx?id=442143>) [In Chinese.]

Zijin Mining Group Co. Ltd., 2022, Announcement in relation to the acquisition of the Sawayaedun gold mine in Wuqia county, Xinjiang: Fujian, China, Zijin Mining Group Co. Ltd., July 14, 4 p. (Accessed January 8, 2024, at <https://www.zijinmining.com/upload/file/2022/07/14/9a852cd47c674d6192679349592cb8ac.pdf>.)

Zijin Mining Group Co. Ltd., 2023, Annual report 2022: Fujian, China, Zijin Mining Group Co. Ltd., April 28, 463 p. (Accessed January 8, 2024, at <https://www.zijinmining.com/upload/file/2023/04/28/f37618ac59554a0d84a5f89bb99e476a.pdf>.)

Zuoju, Feng, 2023, 2022 indium market review and outlook: Beijing, China, Antaike Information Development Co. Ltd. [or Antaike], January, 8 p. [In Chinese.]

TABLE 1
CHINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2018	2019	2020	2021	2022
METALS					
Aluminum:					
Bauxite	77,170	73,320	62,800 ^e	86,000 ^e	90,000 ^e
Alumina	72,531	72,474	73,786	77,475	81,862
Metal:					
Primary	35,802	35,044	36,740	38,503	40,214
Secondary	6,950	7,250	7,250	8,300 ^r	8,380 ^e
Total	42,800	42,300	44,000	46,800 ^r	48,600 ^e
Metal products	51,756	52,522	56,845	61,052	62,216
Antimony:					
Mine, Sb content	95,300	79,900	61,000	38,100 ^e	40,000 ^e
Refinery, metal	191,600	222,609	218,400	170,500 ^r	174,200
Beryllium, mine, beryl:					
Gross weight	1,725	1,750	1,750 ^e	1,740 ^{r, e}	1,880 ^e
Be content	69	69	69 ^e	68 ^{r, e}	74 ^e
Bismuth:					
Mine, Bi content	1,804	1,800	1,800	1,800	1,800 ^e
Refinery	15,537	15,450	15,500 ^e	16,000 ^e	15,500 ^e
Cadmium, refinery, primary	10,349	8,689	8,700 ^e	8,700 ^e	8,700 ^e
Chromium, mine, chromite	71,100	84,400	128,000 ^r	130,000 ^e	130,000 ^e
Cobalt, Co content:					
Mine, concentrate, byproduct from polymetallic ore	2,241	1,742	2,000 ^{r, e}	2,000 ^{r, e}	2,000 ^e
Refinery:					
Metal	8,180	8,752	11,500	7,200 ^r	8,100
Other, including powder, oxide, salts ^e	74,900	86,200	94,500	121,000 ^r	137,000
Total ^e	83,100	95,000	106,000	128,000 ^r	145,000
Copper:					
Mine, Cu content:					
Concentrates	1,569,900	1,628,000	1,673,000	1,758,000 ^r	1,874,000
Solvent extraction ³	55,000	55,700	50,100	60,000 ^r	64,200
Total	1,620,000	1,680,000	1,720,000	1,820,000 ^r	1,940,000
Smelter:					
Primary	7,035,600	7,400,000	7,907,000	8,200,000	8,390,000
Secondary	1,561,800	1,688,400	1,749,800	1,850,000	2,000,000
Total	8,600,000	9,090,000	9,660,000	10,100,000	10,400,000
Refinery:					
Primary:					
Leaching, electrowon	55,000	55,700	50,100	60,000 ^r	64,200
Other	7,001,800	7,556,400	7,999,800	8,149,000 ^r	8,651,800
Total	7,060,000	7,610,000	8,050,000	8,200,000 ^r	8,720,000
Secondary	2,234,600	2,170,800	1,975,500	2,257,000	2,346,000
Grand total	9,290,000	9,780,000	10,000,000	10,500,000	11,100,000
Products, manufactured copper	17,155,000	20,172,000	21,433,000	21,632,000 ^r	22,865,000
Ferroalloys:					
Ferrochromium	5,280,000	6,030,000	6,230,000 ^r	6,410,000 ^r	7,340,000 ^e
Ferromanganese: ^e					
Blast furnace	270,000	290,000	281,000 ^r	294,000 ^r	295,000
Electric furnace	1,660,000	1,770,000	1,730,000 ^r	1,810,000 ^r	1,810,000
Ferromolybdenum	144,000	144,000	166,000	194,400 ^r	201,340
Ferronickel, nickel pig iron ^e	12,200,000 ^r	15,400,000 ^r	12,900,000 ^r	11,000,000 ^r	9,950,000
Ferrosilicon	5,450,000	5,490,000	5,320,000	5,860,000	5,940,000
Ferrovanadium	40,500	43,600	40,900	41,000 ^e	40,000 ^e
Silicomanganese	9,450,000	12,600,000	11,380,000	10,650,000	10,010,000
Gallium	404	338	336	423	606

See footnotes at end of table.

TABLE 1—Continued
CHINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²		2018	2019	2020	2021	2022
METALS—Continued						
Germanium, Ge content		95	119	120 ^r	125 ^r	127
Gold:						
Mine, Au content	kilograms	401,119	380,230	365,340	328,980	372,048
Refinery, primary	do.	513,902	500,420	479,500	443,600	497,800
Indium, refinery, primary	do.	483,000	534,000 ^e	540,000 ^e	590,000 ^{r,e}	670,000 ^e
Iron ore, mine:						
Crude ore	thousand metric tons	763,000	844,000	898,000	978,000 ^r	968,000
Usable ore:						
Gross weight	do.	226,262 ^r	252,649 ^r	284,151 ^r	274,817 ^r	272,069
Fe content	do.	141,187 ^r	157,653 ^r	177,310 ^r	171,486 ^r	169,771
Iron and steel:						
Pig iron	do.	779,880	808,494	907,597	868,568	865,683
Steel:						
Raw steel	do.	920,027	995,419	1,064,730	1,032,788	1,013,003
Products, rolled	do.	1,132,870	1,204,569	1,328,716	1,336,668	1,340,335
Lead:						
Mine, Pb content	do.	1,976	2,006	1,942	1,964	1,946
Smelter, primary	do.	2,695	2,882	3,010	3,484 ^r	3,585
Refinery:						
Primary	do.	2,691	2,734	2,800 ^e	2,750	2,806
Secondary	do.	2,252	2,225	2,200 ^e	2,450	2,420
Total	do.	4,940	4,960	5,000 ^e	5,200	5,230
Magnesium, primary, metal and alloy		848,100	930,600	779,000	828,700	950,000
Manganese:						
Mine, ore:						
Gross weight	thousand metric tons	10,403	10,325	12,856 ^r	8,000 ^r	6,500
Mn content	do.	1,560	1,311	1,670 ^r	880 ^r	715
Refinery, metal, electrolytic	do.	1,390	1,530	1,370	1,230 ^r	685
Mercury, Hg content		2,317	2,232	1,993	1,280	1,000 ^e
Molybdenum, mine, Mo content		113,000	116,000	107,000 ^e	106,000 ^e	106,000 ^e
Nickel, Ni content:						
Mine, concentrate		108,200	108,700	109,000 ^e	109,000 ^e	114,000 ^e
Intermediate, matte		159,300	159,300	149,000 ^e	135,000 ^{r,e}	147,000 ^e
Chemicals		45,200	41,300	64,000	84,000	235,000
Ferronickel, nickel pig iron		476,040	600,340	504,000	432,000 ^r	392,000
Refinery, metal, electrolytic		191,100	188,600	176,000	159,000 ^r	173,000
Niobium, mine, mineral concentrate, Nb content		45	45 ^e	44	45 ^e	45 ^e
Platinum-group metals, mine:						
Palladium, Pd content	kilograms	1,300	1,300	1,300 ^e	1,300 ^{r,e}	1,300 ^e
Platinum, Pt content	do.	2,500	2,500	2,500 ^e	2,800 ^{r,e}	2,800 ^e
Rare earths, mineral concentrate, rare-earth-oxide equivalent		120,000	132,000	140,000	168,000	210,000
Rhenium, Re content, in NH ₄ ReO ₅ ^e	kilograms	2,500	2,500	2,500	2,500	2,500
Selenium, Se content ^e		1,050	1,130 ^r	1,200	1,220 ^r	1,290
Silicon, metal	thousand metric tons	2,405	2,249	2,100	2,910 ^r	3,503
Silver, mine, Ag content		3,422	3,443	3,405	3,511	3,477
Tantalum, mine, mineral concentrate, Ta content		90	76 ^e	74 ^e	76 ^e	78 ^e
Tellurium, refinery ^e		310 ^r	330 ^r	350 ^r	360 ^r	380
Tin:						
Mine, Sn content		94,800	91,100	94,500	76,000 ^{r,e}	71,000 ^e
Smelter, primary		177,400	181,200	203,000	180,000 ^e	181,800

See footnotes at end of table.

TABLE 1—Continued
CHINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2018	2019	2020	2021	2022
METALS—Continued					
Titanium:					
Ilmenite and leucoxene, concentrate:					
Gross weight	4,200,000	4,600,000	5,442,000	5,714,000	6,288,000
TiO ₂ content	2,090,000	2,290,000	2,721,000	2,857,000	3,144,000
Sponge	71,119	88,101	122,958	139,929	175,000 ^c
Tungsten, mine, concentrate, W content	65,000	69,000 ^c	71,000 ^c	71,000 ^c	66,000 ^c
Vanadium, V content	59,500	60,000	70,200	70,300	66,900
Zinc:					
Mine, Zn content	thousand metric tons	4,172	4,213	4,058	4,136
Smelter:					
Primary	do.	5,057	5,372	5,462	5,558
Secondary, remelt	do.	550	790	880	850
Total	do.	5,610	6,160	6,340	6,410
Zirconium, mine, zircon ^c		140,000	140,000	133,000	140,000
INDUSTRIAL MINERALS					
Arsenic trioxide ^c		24,000	24,000	24,000	24,000
Asbestos		120,000 ^c	140,000 ^c	130,000 ^c	130,000 ^c
Barite ^c		2,400,000	2,300,000	1,700,000	2,100,000
Boron, B ₂ O ₃ content		168,000	383,000	12,700	205,000 ^c
Bromine		68,300	69,600	70,000 ^c	70,000 ^c
Celestite		61,600	83,600	83,500	80,000 ^c
Cement, hydraulic	thousand metric tons	2,236,000	2,340,000	2,377,000	2,363,000
Clay:					
Bentonite	do.	1,909	2,475	2,086	2,100 ^c
Kaolin	do.	4,507	6,867	6,500 ^r	6,400 ^r
Diamond:					
Gem, unspecified	thousand carats	99	51	21	--
Synthetic, industrial	do.	14,200,000 ^c	15,400,000	15,000,000 ^c	16,235,000 ^r
Diatomite		144,100	141,400	273,700	317,000 ^r
Dolomite	thousand metric tons	13,450	15,000 ^c	15,000 ^c	15,000 ^c
Feldspar	do.	2,386	2,626	2,386	2,790 ^r
Fluorspar	do.	4,980	5,447	5,651	5,900 ^{r,c}
Garnet, industrial		290,000 ^r	310,000 ^r	310,000 ^r	310,000 ^r
Graphite:					
Amorphous, aphanitic		469,600	473,600	170,000 ^r	179,000 ^r
Crystalline flake		694,400	711,400	920,000 ^r	1,010,000 ^r
Total		1,160,000	1,190,000	1,090,000 ^r	1,190,000 ^r
Gypsum:					
Mine	thousand metric tons	11,900	12,640	11,839	12,000 ^c
Synthetic, industrial byproduct	do.	199,000	196,000	196,000 ^c	196,000 ^c
Kyanite and related materials, andalusite ^c		86,600 ^r	153,000	348,000	100,000
Lime ^c	thousand metric tons	300,000	310,000	310,000	310,000
Lithium:					
Mine, lithium carbonate equivalent:					
Ore and concentrate		14,800 ^c	24,500 ^c	30,900 ^c	30,100 ^r
Brine		23,000 ^c	33,000 ^c	39,700 ^c	40,500 ^r
Total		37,800	57,500	70,600	70,600
Refinery:					
Compounds:					
Lithium carbonate		109,000	159,000	171,000	298,000 ^r
Lithium chloride		18,000	28,000	28,000 ^c	30,500 ^r
Lithium hydroxide		42,000	91,000	92,800	190,000 ^r

See footnotes at end of table.

TABLE 1—Continued
CHINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²		2018	2019	2020	2021	2022
INDUSTRIAL MINERALS—Continued						
Lithium:—Continued						
Refinery:—Continued						
Metal		3,200	2,903	3,000 ^e	3,000 ^e	3,000 ^e
Magnesite	thousand metric tons	18,500 ^e	10,917	14,044	14,000 ^e	13,000 ^e
Mica		86,400	98,000	80,000	84,000 ^e	80,000 ^e
Nitrogen, N content:						
Compounds:						
Ammonia	thousand metric tons	37,907	38,922	42,063	42,657 ^r	45,000
Urea	do.	23,940	24,660	25,900	25,300	26,500
Fertilizer	do.	34,570	35,560	37,020	40,260 ^r	41,350
Perlite		935,600	1,472,100	1,422,200	1,500,000 ^e	1,500,000 ^e
Phosphate:						
Mine, phosphate rock:						
Gross weight	thousand metric tons	96,310	93,320	90,000 ^r	104,107 ^r	104,745
P ₂ O ₅ content	do.	28,900	28,000	27,000 ^r	31,200 ^r	31,400
Fertilizers, P ₂ O ₅ content	do.	12,960	13,080	10,570	11,390 ^r	11,500 ^e
Potash, marketable, K ₂ O content	do.	5,450	5,900	5,570 ^e	5,190 ^{r, e}	5,890 ^e
Salt	do.	63,640	67,014	58,527	57,065 ^r	53,599
Sand and gravel, industrial	do.	82,550	85,240	87,650	95,000 ^{r, e}	91,500 ^e
Sodium, compounds:						
Caustic soda	do.	34,760	34,579	36,739 ^r	38,913	39,805
Mirabilite	do.	4,850	4,430	4,020	4,130 ^{r, e}	4,120 ^e
Soda ash, natural and synthetic	do.	26,480	29,865	28,124	29,133	29,202
Sulfur, S content:						
Byproduct:						
Metallurgy ^e	do.	5,700	5,700	5,700	5,700	5,700
Natural gas and petroleum	do.	6,380	7,660	7,910	8,490 ^r	8,500 ^e
Pyrites	do.	5,610	5,700	5,240	5,200 ^e	5,200 ^e
Total ^e	do.	17,700	19,100	18,900	19,400 ^r	19,400
Sulfur, compounds, sulfuric acid	do.	86,364	91,192	92,382	93,827 ^r	95,046
Talc	do.	1,503	1,357	1,100	1,100 ^e	1,100 ^e
Vermiculite ^e		33,000	31,000	35,000	39,000	39,000
Wollastonite ^e	thousand metric tons	1,100	970	1,200	1,200	1,200
Zeolites		106,200	51,800	149,500	150,000 ^e	200,000 ^e
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Anthracite ^e	thousand metric tons	394,000	411,000	423,000	448,000	495,000
Bituminous ^e	do.	2,430,000	2,540,000	2,540,000	2,650,000	2,920,000
Lignite ^e	do.	248,000	259,000	269,000	285,000	315,000
Metallurgical ^e	do.	611,000	637,000	653,000	692,000	764,000
Total	do.	3,680,000	3,850,000	3,890,000	4,080,000	4,490,000
Coke, metallurgical	do.	448,300	471,300	471,160	464,458	473,436
Liquefied natural gas	do.	9,002	11,650	13,329	15,251 ^r	17,427
Natural gas:						
All forms	million cubic meters	160,000	176,000	190,000	205,000	218,000
Coalbed gas, only	do.	7,260	8,880	9,940	10,500	11,500
Petroleum:						
Crude, including from oil shale	million 42-gallon barrels	1,390	1,400	1,420	1,460	1,500
Refinery, throughput	do.	4,540	4,910	5,080	5,300	5,090
Uranium, mine, U content ^e		1,890	1,890	1,890	1,600 ^r	1,700

See footnotes at end of table.

TABLE 1—Continued
CHINA: PRODUCTION OF MINERAL COMMODITIES¹

²Estimated. ³Revised. ⁴do. Ditto. -- Zero.

¹Table includes data available through January 4, 2024. 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.

²In addition to the commodities listed, iodine and a variety of construction stone, sand, and gravel may have been produced, but available information was inadequate to make reliable estimates of output.

³The 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 was typically reported only at the refinery level.

TABLE 2
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Aluminum:			
Bauxite	Aluminum Corporation of China (Chinalco)	Mines in multiple Provinces	26,300
Do.	Guangxi Tiandong Jinxin Chemical Co. Ltd.	Guangxi, Tiandong	1,000
Do.	Huayang New Material Technology Group Co. Ltd.	Shanxi, Yangquan, Pingan	2,200
Do.	Luoyang Xiangjiang Wanji Aluminum Industry Co. Ltd.	Henan, Xin'an	2,000
Do.	Yunnan Aluminium Co. Ltd.	Yunnan, Kunming	2,500
Do.	Yunnan Wenshan Aluminum Co. Ltd.	Yunnan, Wenshan	3,000
Alumina	Aluminum Corporation of China (Chinalco)	Plants in multiple Provinces	21,900
Do.	East Hope Group Co. Ltd.:		
	Oriental Hope Aluminum Co. Ltd.	Shanxi, Jinzhong, Zuoquan	2,400
	Oriental Hope (Sanmenxia) Aluminum Co. Ltd.	Henan, Sanmenxia, Mianchi	2,200
Do.	Guangxi Huayin Aluminum Industry Co. Ltd.	Guangxi, Baise, Debao	2,200
Do.	Guangxi Tiandong Jinsheng Chemical Co. Ltd. (Hangzhou Jinjiang Group Co. Ltd., 100%)	Guangxi, Baise, Tiandong	1,000
Do.	Huayang New Material Technology Group Co. Ltd.	Shanxi, Yangquan	1,100
Do.	Jingxi Tiangui Aluminum Co. Ltd. (Tianshan Aluminum Co. Ltd., 100%)	Guangxi, Baise, Jingxi	800
Do.	Longkou Donghai Alumina Co. Ltd. (Shandong Nanshan Group Co. Ltd., 100%)	Shandong, Yantai, Longkou	1,400
Do.	Luoyang Xiangjiang Wanji Aluminum Industry Co. Ltd.	Henan, Luoyang, Xin'an	1,400
Do.	Nanchuan Pioneer Alumina Refinery Co. Ltd. (Bosai Minerals Group Co. Ltd., 100%)	Chongqing, Nanchuan, Wenfeng	800
Do.	Shandong Weiqiao Aluminum and Power Co. Ltd. (China Hongqiao Group, 100%)	Shandong, Binzhou, Zouping	15,000
Do.	SPIC Shanxi Aluminum Co. Ltd.	Shanxi, Xinzhou, Yuaping	2,900
Do.	Xinfa Aluminium Group Co. Ltd.	Plants in multiple Provinces	15,800
Do.	Yunnan Wenshan Aluminum Co. Ltd. [Aluminum Corporation of China (Chinalco), 100%]	Yunnan, Wenshan	1,400
Metal	Aluminum Corporation of China (Chinalco)	Plants in multiple Provinces	6,900
Do.	Bosai Minerals Group Co. Ltd.	Sichuan, Xuankou, Wenchuan	200
Do.	China Hongqiao Group Ltd.:		
	Shandong Weiqiao Aluminum and Power Co. Ltd.	Shandong, Binzhou, Zouping	6,500
	Yunnan Hongtai New Material Co. Ltd.	Yunnan, Wenshan	1,000
Do.	East Hope Group Co. Ltd., of which:	Locations:	
	Baotou Rare Earth Aluminum Industry Co. Ltd.	Nei Mongol, Baotou	860
Do.	Baotou Xinhengfeng Energy Co. Ltd.	do.	500
Do.	Oriental Hope Aluminum Co. Ltd.	Xinjiang Uyghur, Urumchi	800
Do.	Gansu Dongxing Aluminum Co. Ltd. [Jiuquan Iron and Steel (Group) Co. Ltd., 100%]	Gansu, Lanzhou, Anning	1,350
Do.	Gansu Zhongrui Aluminum Co. Ltd.	Gansu, Baiyin, Lichuan	100
Do.	Henan Yugang Longquan Aluminium Co. Ltd.	Henan, Luoyang, Yichuan	600
Do.	Henan Zhongfu Industry Co. Ltd. (Vimetco N.V., 100%)	Henan, Zhengzhou, Gongyi	490
Do.	do.	Henan, Anyang, Linzhou	250
Do.	Huayang New Material Technology Group Co. Ltd.	Shanxi, Yangquan	230
Do.	Jiaozuo Wanfang Aluminum Co. Ltd.	Henan, Jiaozuo, Macun	420
Do.	Luoyang Xiangjiang Wanji Aluminum Industry Co. Ltd.	Henan, Luoyang, Xin'an	580
Do.	Ningxia Power Investment Corp.	Ningxia, Wuzhong, Qingtongxia	990
Do.	Shandong Nanshan Aluminum Co. Ltd.	Shandong, Yantai, Longkou	820
Do.	State Power Investment Corp. Ltd.	Plants in multiple Provinces	3,200
Do.	Tianshan Aluminum Co. Ltd.	Xinjiang Uyghur, Shihezi	1,200
Do.	Xinfa Aluminium Group Co. Ltd.	Plants in multiple Provinces	3,480
Do.	Yidian Holding Group Co. Ltd.	Plants in multiple Provinces	2,010
Do.	Yunnan Hongtai New Material Co. Ltd.	Yunnan, Wenshan, Yanshan	2,030
Do.	Yunnan Shenhuo Aluminium Co. Ltd.	Yunnan, Wenshan	900
Do.	Yunnan Wenshan Aluminium Co. Ltd.	do.	500

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹		Location of main facilities ^{2,3}	Annual capacity ^c
Antimony:				
Mine:				
Ore	Hsikwangshan Twinkling Star Antimony Co. Ltd. (China Minmetals Corp., 100%)		Hunan, Lengshuijiang	600
Concentrate	Hunan Gold Corp. Ltd.		Hunan, Yuanling	8
Metal, including intermediate	Hsikwangshan Twinkling Star Antimony Co. Ltd. (China Minmetals Corp., 100%)		Hunan, Lengshuijiang	40
Do.	Huaxi Group Industrial Co. Ltd.		Guangxi, Hechi	40
Do.	Hunan Chenzhou Mining Group Co. Ltd.		Hunan, Yuanling	20
Do.	Hunan Yuteng Nonferrous Metals Co. Ltd.		Hunan, Chenzhou	5
Do.	Jiyuan Wangyang Smeltery Group Co. Ltd.		Henan, Jiaozuo	10
Arsenic	Chenzhou Chenxi Metal Co. Ltd.		Hunan, Chenzhou	6
Do.	China Arsenic Industries Co. Ltd.		Guangdong, Zhuhai	NA
Do.	Jianghua Jinhui Arsenic Co. Ltd.		Hunan, Chenzhou	3
Do.	Shandong Humon Smelting Co. Ltd.		Shandong, Yantai	NA
Do.	Yangtao Chemical Industry Co. Ltd.		Hunan, Chenzhou	3
Asbestos	China National Nonmetallic Industry Corp.		Nei Mongol, Baotou; Shanxi, Lai Yuan, and Lu Liang	130
Barite	9X Minerals LLC		Guizhou, Dejiang	60
Do.	China National Nonmetallic Industry Corp.		Guizhou, Xiangshou	NA
Do.	Guizhou Saboman Import & Export Co. Ltd.		Guizhou, Guiding	1,000
Beryllium:				
Metal	metric tons	Fuyun Hengsheng Beryllium Industry Co. Ltd. [Xinjiang Nonferrous Metal Industry (Group) Co. Ltd.]	Xinjiang Uyghur, Fuyun	2
Do.	do.	Hunan Shuikoushan Nonferrous Metals Group Co. Ltd.	Hunan, Hengyang, Changning	5
Oxide	do.	Fuyun Hengsheng Beryllium Industry Co. Ltd. [Xinjiang Nonferrous Metal Industry (Group) Co. Ltd.]	Xinjiang Uyghur, Fuyun	100
Do.	do.	Hunan Shuikoushan Nonferrous Metals Group Co. Ltd.	Hunan, Hengyang, Changning	150
Do.	do.	Northwest Rare Metal Materials Research Institute Ningxia Co. Ltd.	Ningxia, Shizuishan, Dawukou [CNMC (Ningxia) Oriental Group Co. Ltd.]	NA
Bismuth, metal	do.	Chinalco Yunnan Copper Group Co. Ltd.	Nei Mongol, Chifeng	300
Do.	do.	Guangzhou Smelter Co. Ltd. (China Great Wall Aluminium Industry Co. Ltd.)	Guangdong, Guangzhou	300
Do.	do.	Hunan Bismuth Industry Co. Ltd.	Hunan, Chenzhou	3,500
Do.	do.	Hunan Jinwang Bismuth Industry Co. Ltd.	do.	8,000
Do.	do.	Jiyuan Wangyang smelter (Jiquan Wangyang Smeltery Group Co. Ltd.)	Henan, Jiaozuo	200
Do.	do.	Shizhuyuan Nonferrous Metals Co. Ltd.	Hunan, Shizhuyuan	1,200
Do.	do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	300
Do.	do.	Zhuzhou Smelter Group Co. Ltd.	Hunan, Zhuzhou	350
Boron, ore		Liaoning Dashiqiao Maolong Boron Industry Co. Ltd.	Liaoning, Dashiqiao	70
Do.		Liaoning Jinma (Kuandian) Boron Mine Co. Ltd.	Liaoning, Dandong	40
Do.		Qinghai Zhongtian Boron-Lithium Mining Co. Ltd.	Qinghai, Haixi	300
Cadmium, refinery, primary	metric tons	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	800
Do.	do.	Zhuzhou smelter (Zhuye Torch Metals Co. Ltd.)	Hunan, Zhuzhou	1,000
Cement		Anhui Conch Cement Co. Ltd.	Anhui, Wuhu	388,000
Do.		Asia Cement (China) Holding Corp.	Jiangxi, Ruichang	37,200
Do.		BBMG Corp.	Beijing	180,000
Do.		China Building Materials Group Co. Ltd.	do.	500,000
Do.		China Resources Cement Holdings Ltd.	Southern China	90,100
Do.		China Shanshui Cement Group Ltd. (Sunnsy Group)	Shandong, Jinan, Changqing	103,000
Do.		Gezhouba Group Cement Co. Ltd. (GGCC)	Hubei, Wuhan	17,500
Do.		Henan Tongli Cement Co. Ltd.	Henan, Zhengzhou	12,000
Do.		Hongshi Holding Group Co. Ltd.	Zhejiang, Jinhua	100,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴	
Cement—Continued	Huaxin Cement Co. Ltd. (Holcim Group, 41.8%, and others, 58.2%)	Hubei, Huangshi	118,000	
Do.	Jiangsu Jinfeng Cement Group Co. Ltd.	Jiangsu, Changzhou, Liyang	31,000	
Do.	Jiangxi Wannianqing Cement Co. Ltd.	Jiangxi, Shangra, Wannin	26,000	
Do.	Jilin Yatai Group Co. Ltd.	Jilin, Changchun	20,000	
Do.	Shandong Shanshui Cement Group Co. Ltd.	Shandong, Jinan	100,000	
Do.	Sichuan Esheng Cement Co. Ltd.	Sichuan, Emeishan, Jiuli	25,000	
Do.	Taiwan Cement Corp.	Zhejiang, Hangzhou	67,500	
Do.	Tangshan Jidong Cement Co. Ltd.	Hebei, Tangshan	176,000	
Do.	Tianrui Group Cement Co. Ltd.	Henan, Ruzhou	56,400	
Do.	Xinjiang Qingsong Building Material Chemical Co. Ltd.	Xinjiang Uyghur, Aksu	16,000	
Do.	Yaobai Special Cement Group Co. Ltd.	Shaanxi, Xi'an	20,000	
Do.	Yunnan Cement Building Materials Group Co. Ltd.	Yunnan, Kunming	16,000	
Do.	West China Cement Ltd.	Shaanxi, Xi'an, Chang'an	19,600	
Chromium, chromite	Tibet Mineral Development Co. Ltd. (Baowu Group, 100%)	Xizang, Qusong	130	
Clay, Kaolin	Longyan Kaolin Co. Ltd.	Fujian, Longyan	600	
Do.	Yankuang Beihai Kaolin Co. Ltd.	Guangxi, Beihai	300	
Do.	Yunnan Xishuangbanna Wanxiang Mining Co. Ltd.	Yunnan, Jinghong	50	
Coal	China Coal Energy Co. Ltd. (China National Coal Group)	Mines in Nei Mongol, Shanxi, Jiangsu, and other Provinces	115,000	
Do.	Datong Coal Mine Group Co. Ltd.	Shanxi, Datong	180,000	
Do.	Henan Energy and Chemical Industry Group Co. Ltd.	Henan, Zhengzhou	80,700	
Do.	Jinneng Group Co. Ltd.	Shanxi, Datong	92,200	
Do.	Jizhong Energy Group Co. Ltd.	Hebei, Handan	75,400	
Do.	Kailuan (Group) Co. Ltd.	Hebei, Tangshan	24,800	
Do.	National Energy Investment Group Co. Ltd.	Mines in Nei Mongol, Xinjiang, and other Provinces	515,000	
Do.	Shaanxi Coal and Chemical Industry Group Co. Ltd.	Shaanxi, Chengcheng	178,000	
Do.	Shandong Energy Group Co. Ltd.	Shandong, Jinan	111,000	
Do.	Shanxi Coking Coal Energy Group Co. Ltd.	Shanxi, Taiyuan	105,000	
Do.	Shanxi Lu'an Mining Group Co. Ltd.	Shanxi, Changzhi	83,500	
Do.	Yangquan Coal Industry Group Co. Ltd.	Shanxi, Yangquan	83,800	
Do.	Yanzhou Coal Mining Co. Ltd.	Shandong, Jining	166,000	
Cobalt, Co content:				
Mine	metric tons	Hainan Mining Co. Ltd.	Hainan, Changjiang	110
Do.	do.	Jinchuan Group Co. Ltd.	Gansu, Jinchang, Jinchuan	6,000
Do.	do.	Shandong Jinling Mining Co. Ltd.	Shandong, Yantai, Zhaoyuan	110
Do.	do.	Xinjiang Xinxin Mining Industry Co. Ltd.	Xinjiang Uyghur, Fuyun	100
Do.	do.	Yuanjiang Nickel Industry Co. Ltd. (Yunnan Tin Industry Group Co. Ltd.)	Yunnan, Yuxi, Yuanjiang	80
Refined:				
Primary	do.	Anhui Hanrui New Materials Co. Ltd. (Nanjing Hanrui Cobalt Co. Ltd., 100%)	Anhui, Chuzhou, Langya	3,000
Do.	do.	Dalian Aote Cobalt Nickel New Materials Co. Ltd.	Liaoning, Dalian, Puwan New District	1,600
Do.	do.	Ganzhou Tengyuan Cobalt New Material Co. Ltd.	Jiangxi, Ganzhou, Ganxian	6,500
Do.	do.	Ganzhou YiHao Umicore Industries Co. Ltd.	Jiangxi, Ganzhou, Zhanggong, Xihe	6,000
Do.	do.	Greatpower Nickel and Cobalt Materials Co. Ltd. (Greatpower Jinchuan Advanced Battery Materials Corp.)	Zhejiang, Shaoxing, Shangyu	7,000
Do.	do.	Guangdong Jiana Energy Technology Co. Ltd.	Guangdong, Qingyuan, Yingde	10,000
Do.	do.	Hefei Rongjie Metal Technology Co. Ltd.	Anhui, Hefei	4,500
Do.	do.	Hunan Yacheng New Materials Co. Ltd.	Hunan, Changsha, Ningxiang	2,800
Do.	do.	Jiangsu Huayou Energy Technology Co. Ltd.	Jiangsu, Nanjing, Jiangning	38,000
Do.	do.	Jiangsu Jiangwu Cobalt Industry Co. Ltd. [Jiangxi Tungsten Group (JXTC)]	Jiangsu, Ganzhou	2,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Cobalt, Co content:—Continued				
Refined:—Continued				
Primary—Continued	metric tons	Jiangsu Xiongfeng Technology Co. Ltd.	Jiangsu, Nantong, Haimen	1,200
Do.	do.	Lanzhou Jinchuan Advanced Materials Technology Co. Ltd. (Jinchuan Group Co. Ltd.)	Gansu, Lanzhou, Heping	12,000
Do.	do.	Nantong Xinwei Nickel and Cobalt Hightech Development Co. Ltd.	Jiangsu, Nantong, Haimen	2,000
Do.	do.	Quzhou Huayou Cobalt New Material Co. Ltd.	Zhejiang, Quzhou, Kecheng	39,000
Do.	do.	Sichuan Wanbang Shenghui New Energy Technology Co. Ltd.	Sichuan, Meishan, Shishu	1,300
Do.	do.	Tianjin Maolian Technology Co. Ltd. (Beijing Hezong Science & Technology Co. Ltd., 100%)	Tianjin, Binhai, Nangang	4,800
Do.	do.	Yantai Kaishi Industrial Co. Ltd.	Shandong, Yantai, Zhifu	4,000
Do.	do.	Zhejiang Huayou Cobalt Co. Ltd.	Zhejiang, Tongxiang	39,000
Do.	do.	Zhongwei New Materials Co. Ltd.	Hunan, Changsha, Ningxiang	6,000
Do.	do.	Zhuhai Kelixin Metal Material Co. Ltd. (Chengtun Mining Group Co. Ltd., 100%)	Guangdong, Zhuhai, Jinwan	4,000
Secondary	do.	Chizhou Xian New material Technology Co. Ltd.	Anhui, Chizhou, Guichi	600
Do.	do.	CNGR Advanced Materials Co. Ltd.	Guizhou, Tongren	17,000
Do.	do.	GEM (Jiangsu) Cobalt Industry Co. Ltd. (GEM Co. Ltd.)	Jiangsu, Taizhou, Taixing	35,000
Do.	do.	GEM (Wuxi) Energy Materials Co. Ltd. (GEM Co. Ltd., 100%)	Jiangsu, Wuxi, Xinwu	15,000
Do.	do.	Hunan Jinyuan New Material Ltd.	Hunan, Yiyang, Anhua	4,000
Do.	do.	Zhejiang New Era Zhongneng Recycling Technology Co. Ltd.	Zhejiang, Shaoxing, Shangyu	10,000
Coke, metallurgical				
Do.		China Risun Coal Chemicals Group Ltd.	Beijing, Fengtai	5,680
Do.		Hebei Kailuan Energy Chemical Co. Ltd.	Hebei, Tangshan	4,270
Do.		Heilongjiang Baotailong New Material Co. Ltd.	Heilongjiang, Qitaihe	1,580
Do.		Shaanxi Heimao Coking Co. Ltd.	Shaanxi, Hancheng	3,240
Do.		Shandong Jinneng Technology Co. Ltd.	Shandong, Qihe	2,300
Do.		Shanxi Antai Group Co. Ltd.	Shanxi, Jinzhong	1,800
Do.		Shanxi Coking Co. Ltd.	Shanxi, Taiyuan	3,600
Do.		Shanxi Meijin Energy Co. Ltd.	do.	5,040
Do.		Yunnan Coal Energy Co. Ltd.	Yunnan, Kunming	1,980
Copper:				
Mine, Cu content		Anhui Tongling Nonferrous Metals Group Co. Ltd.	Anhui, Anqing	47
Do.		Baiyin Nonferrous Metals Group Co. Ltd.	Gansu, Baiyin	30
Do.		China Daye Non-Ferrous Metals Mining Ltd.	Hubei, Huangshi	26
Do.		China Gold International Resources Corp. Ltd.	Central Xizang	87
Do.		China National Gold Group Corp.	Xinjiang Uyghur, Wunuketushan	61
Do.		China Nonferrous Metal Mining (Group) Co. Ltd.	Liaoning, Manchu	10
Do.		Chinalco Yunnan Copper Group Co. Ltd.	Yunnan, Kunming	113
Do.		Gansu Yangba Copper Industry Co. Ltd.	Gansu, Yangba	20
Do.		Heilongjiang Liujiu Mining Co. Ltd.	Heilongjiang, Longjiang	22
Do.		Hubei Jiuzhou Mining Co. Ltd.	Hubei, Daye	10
Do.		Hubei Sanxin Gold and Copper Co. Ltd.	do.	14
Do.		Jiangxi Copper Co. Ltd.	Jiangxi, Dexing	190
Do.		Jinchuan Group Co. Ltd.	Gansu, Jinchang	100
Do.		Shanxi Zhongtiaoshan Nonferrous Metal Group Co. Ltd.	Shanxi, Zhongtiaoshan	30
Do.		Tibet Julong Copper Co. Ltd. (Zijin Mining Group Co. Ltd.)	Xizang, Julong	58
Do.		Tongling Nonferrous Metals Group Holding Co. Ltd.	Anhui, Tongling	52
Do.		Western Mining Co. Ltd.	Qinghai, Xining	13
Do.		Western Mining Co. Ltd., 58%, and Zijin Copper Co. Ltd., 22%	Xizang, Chamdo, Jiangda	150
Do.		Xinjiang Ashele Copper Co. Ltd. (Zijin Mining Group Co. Ltd.)	Xinjiang Uyghur, Habahe	50
Do.		Xinjiang Xinxin Mining Industry Co. Ltd.	Xinjiang Uyghur, Urumqi	10
Do.		Xinjiang Yakesi Resources Co. Ltd.	Xinjiang Uyghur, Huangshan	10
Do.		Yunnan Copper Co. Ltd., 51%, and Shanghai Oriental Pearl Group, 49%	Xinjiang Uyghur, Hami, Yizhou	16

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴	
Copper:—Continued				
Mine, Cu content—Continued	Yunnan Diqing Nonferrous Metals Co. Ltd.	Yunnan, Diqing	98	
Do.	Yuxi Resources Corp.	Yunnan, Yuxi	10	
Do.	Zijin Mining Group Co. Ltd.	Heilongjiang, Heihe	110	
Do.	do.	Fujian, Longyan	86	
Do.	do.	Jilin, Hunchun	12	
Refined	Baiyin Nonferrous Metals Group Co. Ltd.	Gansu, Baiyin	400	
Do.	Chifeng Fubang Copper Industry Co. Ltd.	Nei Mongol, Chifeng, Linxi	100	
Do.	Chifeng Jinfeng Copper Co. Ltd.	Yunnan, Kunming, Wuhua	400	
Do.	Chifeng Yunnan Copper Nonferrous Metals Co. Ltd.	Nei Mongol, Chifeng, Harqin	400	
Do.	Chinalco Luoyang Copper Processing Co. Ltd.	Henan, Luoyang, Jianxi	400	
Do.	Daye Nonferrous Metals Co. Ltd.	Hubei, Huangshi, Xialu	600	
Do.	Guangxi Nanguo Copper Industry Co. Ltd.	Guangxi, Chongzuo, Fusui	700	
Do.	Guangxi Non-Ferrous Metal Group	Guangxi, Wuzhou, Longxu	150	
Do.	Heilongjiang Zijin Copper Smelter Co. Ltd.	Heilongjiang, Qiqihar, Hulan-Ergi	170	
Do.	Henan Yuguang Gold & Lead Co. Ltd.	Henan, Jiyuan, Kejing	100	
Do.	Huili Kunpeng Co. Ltd.	Sichuan, Huili	100	
Do.	Huludao Dongfang Copper Industry Co. Ltd. (Huludao Nonferrous Metals Group Co. Ltd.)	Liaoning, Huludao, Longgang	100	
Do.	Jiangxi Copper Co. Ltd.	Jiangxi, Yingtan, Guixi	1,800	
Do.	Jilin Zijin Copper Smelter Co. Ltd. (Zijin Mining Group Co. Ltd.)	Jilin, Hunchun	140	
Do.	Jinchuan Group Co. Ltd.	Gansu, Jinchang, Jinchuan	600	
Do.	do.	Guangxi, Fangchenggang	400	
Do.	Linyi Jinsheng Non-Ferrous Metal Industry Co. Ltd.	Shandong, Linyi	200	
Do.	Ningbo Jintian Copper Corp.	Zhejiang, Ningbo, Jiangbei	150	
Do.	Shandong Dongying Fangyuan Nonferrous Metals Co. Ltd.	Shandong, Dongying, Dongying	700	
Do.	Tianjin Datong Copper Co. Ltd.	Tianjin	200	
Do.	Tongling Nonferrous Metals Group Holding Co. Ltd.	Anhui, Tongling, Tongguang	1,600	
Do.	do.	Anhui, Tongling, Yi'an	200	
Do.	Yanggu Xiangguang Copper Co. Ltd. (Shandong Fengxiang Group Co. Ltd.)	Shandong, Liaocheng, Yanggu	400	
Do.	Yunnan Copper Co. Ltd. (Chialeco)	Yunnan, Honghe, Gejiu	500	
Do.	do.	Yunnan, Kunming, Wuhua	500	
Do.	Zhangjiagang United Copper Co. (Tongling Nonferrous Metals Group Holding Co. Ltd.)	Jiangsu, Zhangjiagang	300	
Do.	Zhongjin Gold Corp. Ltd. (China National Gold Group Co. Ltd.)	Henan, Sanmenxia, Hubin	350	
Do.	Zhongtiaoshan Nonferrous Metals Group Co. Ltd.	Shanxi, Yuncheng, Yuanqu	185	
Do.	Zijin Copper Co. Ltd. (Zijin Mining Group Co. Ltd.)	Fujian, Shanghang	400	
Do.	do.	Jilin, Yanbian, Hunchun	150	
Do.	Zijin Mining Group Co. Ltd.	Xinjiang Uyghur, Changji Hui, Fukang	600	
Diamond, synthetic	million carats	Henan Huanghe Whirlwind Co. Ltd.	Henan, Zhengzhou	2,520
Do.	do.	Zhengzhou Sino-Crystal Diamond Co. Ltd.	Henan, Zhengzhou, Zhongyuan	2,500
Do.	do.	Zhongnan Diamond Co. Ltd.	Henan, Nanyang	6,570
Ferroalloys:				
Ferrochromium	Anyang Hongyan Ferroalloys Co. Ltd.	Henan, Anyang, Long'an	100	
Do.	Fengzhen Xintai New Material Technology Co. Ltd. (Xinganglian Metallurgical Co. Ltd.)	Nei Mongol, Ulanqab, Fengzhen	1,300	
Do.	Hebei Taiheng Special Steel Co. Ltd.	Hebei, Cangzhou	430	
Do.	Huade County Zhongtai Ferronickel Co. Ltd.	Nei Mongol, Huade	600	
Do.	Inner Mongolia Kehan Metallurgy Co. Ltd.	Nei Mongol, Ulanqab, Fengzhen	120	
Do.	Inner Mongolia Ulanqab Xufeng Xinchuang Industrial Co. Ltd. (Henan Xibao Metallurgical Materials Group Co. Ltd.)	Nei Mongol, Ulanqab	550	
Do.	Inner Mongolia Xintaiyuan New Material Co. Ltd.	Nei Mongol, Ulanqab, Fengzhen	500	
Do.	Jiangxian Mingmaite Co. Ltd.	Shanxi, Yuncheng, Jiangxian	170	
Do.	Mintal Group Cleantech Decelopment Co. Ltd.	Nei Mongol, Baotou	650	

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴
Ferroalloys—Continued			
Ferrochromium—Continued	Ningxia Tianjing Manganese Industry Group Co. Ltd.	Ningxia, Zhongwei, Zhongning	300
Do.	Qinghai Tianyi Metallurgy Co. Ltd.	Qinghai, Xining, Huangzhong	290
Do.	Shanxi Jiang County Minmetal Co. Ltd.	Shanxi, Yuncheng, Jiangxian	350
Do.	Shanxi Taigang Wanbang Furnace Charge Co. Ltd.	Shanxi, Jinzhong, Yuci	300
Do.	Sichuan Ehui Group	Nei Mongol, Fengzhen	170
Do.	Sichuan Leshan Xinhe Electric Power Comprehensive Development Co. Ltd.	Sichuan, Leshan, Jinkouhe	150
Do.	Sichuan Mingda Ebian Alloy Co. Ltd.	Sichuan, Leshan, Ebian Yi	110
Do.	Sichuan Yingjing Yiming Special Alloy Co. Ltd.	Sichuan, Ya'an, Yingjing	100
Do.	Sichuan Yuanda Juhua Industrial Co. Ltd.	Sichuan, Chengdu	310
Do.	Ulanqab Xiongwei Guangda New Material Co. Ltd.	Nei Mongol, Ulanqab, Huade	200
Do.	Yihui Group Co. Ltd.	Sichuan, Chengdu	220
Ferromanganese	CITIC Dameng Mining Co. Ltd.	Guangxi, Chongzuo, Daxin	300
Do.	CITIC Jinzhou Metal Co. Ltd. (CITIC United Asia Investments Ltd., 82.82%, and others, 17.18%)	Liaoning, Jinzhou, Taihe	150
Do.	Guangxi Ferroalloy Co. Ltd.	Guangxi, Laibin	60
Do.	Guangxi Guikang New Materials Co. Ltd.	Guangxi, Guilin, Lingchuan	120
Do.	Guangxi Qinzhou Hengxing Manganese Industry Co. Ltd.	Guangxi, Qinzhou	70
Do.	Henan Xibao Metallurgical Materials Group Co. Ltd.	Henan, Nanyang, Xixia	150
Do.	Inner Mongolia Chayouqianqi Mengfa Ferroalloy Co. Ltd.	Nei Mongol, Ulanqab	310
Do.	Inner Mongolia Erdos Resources Co. Ltd.	Nei Mongol, Erdos, Dongsheng	25
Do.	Inner Mongolia Ulanqab Xufeng Xinchuang Industrial Co. Ltd. (Henan Xibao Metallurgical Materials Group Co. Ltd.)	Nei Mongol, Ulanqab	240
Do.	Jiaocheng Yiwang Ferroalloy Co. Ltd.	Shanxi, Jiaocheng	220
Do.	Lingqiu County Jinyu Ferroalloy Co. Ltd.	Shanxi, Datong, Lingqiu	80
Do.	Minmetal Hunan Ferroalloy Co. Ltd.	Hunan, Xiangxiang	110
Do.	Ningxia Shengyan Industrial Group Fuhua Metallurgical Co. Ltd.	Ningxia, Yinchuan	240
Do.	Qinzhou City Jincheng Manganese Industry Co. Ltd.	Guangxi, Qinzhou	50
Do.	Shandong Shengrong New Material Co. Ltd.	Shandong, Heze	80
Do.	Shanxi Dongfang Resources Development Co. Ltd.	Shanxi, Yuncheng, Jishan	600
Do.	Sichuan Chuantou Emei Ferroalloy (Group) Co. Ltd.	Sichuan, Leshan, Emeishan	240
Do.	Ulanqab Xiongwei Guangda New Materials Co. Ltd.	Nei Mongol, Ulanqab	120
Do.	Yunnan Wenshan Dounan Manganese Industry Co. Ltd.	Yunnan, Yanshan	210
Fermolybdenum	Beipiao Wanhong Molybdenum Industry Co. Ltd.	Liaoning, Chaoyang, Beipiao	15
Do.	Chaoyang Jinda Molybdenum Industry Co. Ltd.	Liaoning, Chaoyang	20
Do.	China Molybdenum Co. Ltd.	Henan, Luoyang, Luanchuan	25
Do.	Deyang Yuanjian Ferroalloy Co. Ltd.	Sichuan, Deyang	19
Do.	Huludao Wanfeng Metal Co. Ltd.	do.	12
Do.	Jinduicheng Molybdenum Industry Co. Ltd.	Shaanxi, Weinan, Huazhou	32
Do.	Jinzhou Xinghe Metal Co. Ltd.	Liaoning, Jinzhou	9
Do.	Liaoning Xinhualong Dayou Molybdenum Industry Co. Ltd.	Liaoning, Jinzhou, Linghai	15
Do.	Liaoning Xintai Molybdenum Industry Co. Ltd.	Liaoning, Jinzhou, Yixian	20
Do.	Linghai Hengtai Molybdenum Industry Co. Ltd.	Liaoning, Linghai, Shuangyang	15
Do.	Luoyang Bohua Industrial Co. Ltd.	Henan, Luoyang	6
Do.	Luoyang Duohua Molybdenum Industry Co. Ltd.	do.	5
Ferronickel, nickel pig iron	Baosteel Desheng Stainless Steel Co. Ltd. (Baowu Group)	Fujian, Fuzhou, Luoyuan	1,200
Do.	Fujian Dingxin Nickel Industry Co. Ltd.	Fujian, Fu'an, Wuwan	1,120
Do.	Guangdong Century Qingshan Nickel Industry Co. Ltd.	Guangdong, Yangjiang	210
Do.	Guangdong Guangqing Metal Technology Co. Ltd.	do.	2,300
Do.	Guangxi Beigang New Material Co. Ltd. (Guangxi Chengde Group Co. Ltd.)	Guangxi, Beihai, Tieshangang	1,500
Do.	Huaxiao Stainless Steel Corp. Ltd., including: Fujian Dingxin Nickel Industry Co. Ltd.	Locations: Fujian, Fu'an	1,120
Do.	Henan Jinhui Stainless Steel Co. Ltd.	Henan, Xuchang, Changge	570

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Ferroalloys:—Continued			
Ferronickel, nickel pig iron, —Continued	Inner Mongolia Heyi Nickel-Chrome Composite Co. Ltd.	Nei Mongol, Tongliao, Naiman	210
Do.	Inner Mongolia Huade Wuzhou Steel Co. Ltd.	Nei Mongol, Ulanqab, Huade	120
Do.	Inner Mongolia Jinma Group Corp.	Nei Mongol, Hohhot, Xincheng	80
Do.	Inner Mongolia Shuofeng Industry Co. Ltd.	Nei Mongol, Ulanqab, Fengzhen	120
Do.	Inner Mongolia Xinyang Metallurgy Chemical Co. Ltd.	Nei Mongol, Ulanqab, Tugui	60
Do.	Jiangsu Delong Nickel Industry Co. Ltd.	Jiangsu, Yangcheng, Xiangshui	1,050
Do.	Jiangsu Suqian Huiran Industrial Co. Ltd. (Ningbo Lygend Group)	Jiangsu, Suqian	180
Do.	Liaoning Guorun Metal Group Co. Ltd.	Liaoning, Yingkou, Shagang	140
Do.	Liaoning Shengyun Industry Development Co. Ltd.	Liaoning, Yingkou, Dashiqiao	150
Do.	Liaoning Treasure Platinum Technology Co. Ltd.	Liaoning, Liaoyang, Liuerbao	140
Do.	Shandong Xinhai Technology Co. Ltd.	Shandong, Linyi	1,900
Do.	Suqian Xiangxiang Industrial Co. Ltd. (Ningbo Lygend Group)	Jiangsu, Suqian	120
Do.	Yangjiang Yichuan Metal Science and Technology Co. Ltd.	Guangdong, Yangjiang, Gangkou	150
Do.	Yangzhou Yichuan Nickel Industry Co. Ltd.	Jiangsu, Yangzhou, Lidian	210
Ferrosilicon	Blue Star Silicon Materials Co. Ltd. [China National Chemical Corp. Ltd. (ChemChina), 79.5%]	Gansu, Lanzhou, Zhongbao	NA
Do.	Gansu Hongyu Ferroalloy Co. Ltd.	Gansu, Baiyin, Jingtai	100
Do.	Inner Mongolia Erdos Resources Co. Ltd.	Nei Mongol, Erdos, Otog	1,600
Do.	Inner Mongolia Junzheng Energy & Chemical Co. Ltd.	Nei Mongol, Wuhai	300
Do.	Ningxia Darshan Silicon Industry Co. Ltd.	Ningxia, Wuzhong	36
Do.	Ningxia Rongsheng Ferroalloy Group Co. Ltd.	Ningxia, Rongsheng	90
Do.	Ningxia Sanyuan Zhongtai Metallurgical Co. Ltd.	Ningxia, Zhongwei, Shapotou	214
Do.	Ningxia Tianjing Manganese Industry Group Co. Ltd.	Ningxia, Zhongwei, Zhongning	440
Do.	Ningxia Xinhua Industrial Group Co. Ltd.	Ningxia, Zhongwei	110
Do.	Ningxia Zhongwei Maoye Metallurgical Co. Ltd.	Ningxia, Zhongwei, Shapotou	113
Do.	Ningxia Zhongwei Yinhe Smelting Co. Ltd.	do.	117
Do.	Qinghai Belden High Purity Materials Development Co. Ltd.	Qinghai, Xining	150
Do.	Qinghai Huadian Ferroalloy Co. Ltd.	Qinghai, Xining, Huangyuan	310
Do.	Qinghai Kaiyuan Metal Materials Co. Ltd.	Qinghai, Xining	96
Do.	Qinghai Tongli Ferroalloys Co. Ltd.	Qinghai, Haidong, Lebu	100
Do.	Qinghai Wutong (Group) Industry Co. Ltd.	Qinghai, Xining, Chengbei	300
Do.	Qinzhou City Jincheng Manganese Industry Co. Ltd.	Guangxi, Qinzhou	50
Do.	Sichuan Chuantou Emei Ferroalloy (Group) Co. Ltd.	Sichuan, Emeishan	100
Do.	Sichuan Leshan Xinhe Electric Power Comprehensive Development Co. Ltd.	Sichuan, Leshan, Jinhe	65
Do.	Tengda Xibei Ferroalloy Co. Ltd.	Gansu, Lanzhou, Yongdeng	250
Do.	Tengzhou Delifu Casting Materials Co. Ltd. (Feng Erda Group)	Ningxia, Shizuishan and Nei Mongol, Baotou	NA
Ferrotitanium	Hebei Jindu Ferroalloy Group Co. Ltd.	Hebei, Xingtai, Qinghe	3
Do.	Jinzhou Hengli Ferroalloy Co. Ltd.	Liaoning, Jinzhou, Guta	4
Do.	Jinzhou Hengtai Special Alloy Co. Ltd.	Liaoning, Jinzhou, Taihe	6
Ferrotungsten	Anhua Tiangong Jinyuan Alloy Materials Co. Ltd.	Hunan, Yiyang, Anhua	NA
Do.	Ganzhou Jiangwu Ferrotungsten Co. Ltd. [Jiangxi Tungsten Industry Group Co. Ltd. (JWYX)]	Jiangxi, Ganzhou, Ganxian	6
Do.	Hunan Chuangda Vanadium Tungsten Co. Ltd. (HCVT)	Hunan, Hengyang, Hengdong	14
Do.	Sinosteel Jilin Ferroalloy Co. Ltd. (Sinosteel Group Corp. Ltd.)	Jilin, Jilin	NA
Ferrovanadium	Chaoyang Boyuan Metal Industry Co. Ltd.	Liaoning, Chaoyang	3
Do.	HBIS Chengde Iron & Steel Co. (HBIS Chengsteel)	Hebei, Chengde	6
Do.	Huludao Mingxin Ferroalloy Co. Ltd.	Liaoning, Huludao	1
Do.	Jiangxi Yonsheng Mining and Metallurgy Co. Ltd.	Jiangxi, Xinyu	2
Do.	Jinzhou Guangda Ferroalloy Co. Ltd.	Liaoning, Jinzhou, Guta	3
Do.	Jinzhou Hongding Metal Co. Ltd.	Liaoning, Jinzhou, Yixian	1
Do.	Jinzhou Xinrong Vanadium Industry Co. Ltd.	Liaoning, Jinzhou	2

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^e
Ferroalloys—Continued				
Ferrovanadium—Continued		Jinzhou Xinwanbo Metal Materials Co. Ltd.	Liaoning, Jinzhou	4
Do.		Liaoning Huatai Metal Industry Co. Ltd.	Liaoning, Chaoyang	2
Do.		Pangang Group Vanadium and Titanium Resources Co. Ltd.	Sichuan, Panzhihua	18
Do.		Pangang Group Xichang Steel & Vanadium Co. Ltd.	Sichuan, Xichang, Jingjiu	18
Do.		Yingkou Shengdong Refractories Co. Ltd.	Liaoning, Yingkou	2
Silicomanganese		Chahar Right Front Banner Tengfei FerroAlloy Co. Ltd.	Nei Mongol, Ulanqab	230
Do.		Chongqing Dalang Metallurgical New Materials Co. Ltd. (Bosai Group, 78%, and Fuling Nengyuan Shiye Group, 22%)	Chongqing, Fuling, Qingxi	550
Do.		CITIC Dameng Mining Co. Ltd.	Guangxi, Chongzuo, Daxin	300
Do.		CITIC Jinzhou Metal Co. Ltd. (CITIC United Asia Investments Ltd., 82.82%, and others, 17.18%)	Liaoning, Jinzhou, Taihe	100
Do.		Dushan Hengxing Ferroalloy Co. Ltd.	Guizhou, Qiannan, Dushan	120
Do.		Guangxi Baise Bisheng Mining. Co. Ltd.	Guangxi, Baise	200
Do.		Guangxi Ferroalloy Co. Ltd.	Guangxi, Laibin	300
Do.		Guangxi Jinmeng Manganese Industry Co. Ltd., including: Cengong Jinmeng Manganese Industry Co. Ltd.	Locations: Guizhou, Cengong	130
Do.		Dushan Jinmeng Manganese Industry Co. Ltd.	Guizhou, Dushan, Mawei	500
Do.		Guangxi Yizhou Jinmeng Manganese Industry Co. Ltd.	Guangxi, Hechi, Yizhou	135
Do.		Qinzhou City Jincheng Manganese Industry Co. Ltd.	Guangxi, Qinzhou	150
Do.		Guangxi Tiandong Shengjin New Materials Co. Ltd.	Guangxi, Tiandong	340
Do.		Guizhou Jinyuan Suiyang Industry Co. Ltd.	Guizhou, Zunyi	280
Do.		Huade Tiansheng Ferroalloys Co. Ltd.	Nei Mongol, Ulanqab, Huade	200
Do.		Inner Mongolia Chayouqianqi Mengfa Ferroalloy Co. Ltd.	Nei Mongol, Ulanqab	85
Do.		Inner Mongolia Erdos Resources Co. Ltd.	Nei Mongol, Erdos, Dongsheng	500
Do.		Inner Mongolia Puyuan Ferroalloys Co. Ltd.	Nei Mongol, Ulanqab, Fengzhen	255
Do.		Inner Mongolia Ruihao New Material Technology Co. Ltd.	Nei Mongol, Xilingol, Zhurihe	300
Do.		Inner Mongolia Ulanqab Xufeng Xinchuang Industrial Co. Ltd.	Nei Mongol, Ulanqab	240
Do.		Inner Mongolia Xinchuang Metallurgical Co. Ltd.	do.	550
Do.		Jilin Ferroalloy Co. Ltd.	Jilin, Jilin, Changyi	350
Do.		Minmetal Hunan Ferroalloy Co. Ltd.	Nei Mongol	180
Do.		Ningxia Jiacheng Metallurgy & Chemical Co. Ltd.	Ningxia, Yinchuan	120
Do.		Ningxia Jiyuan Metallurgical Group Co. Ltd.	Ningxia, Shizuishan	380
Do.		Ningxia Pingluo Wanshun Metal and Chemical Co. Ltd.	Ningxia, Shizuishan, Pingluo	300
Do.		Ningxia Shengyan Industrial Group Fuhua Metallurgical Co. Ltd.	Ningxia, Yinchuan	650
Do.		Shizuishan Huiyi Metallurgical Industry and Trade Co. Ltd.	Ningxia, Shizuishan	350
Do.		Sichuan Chuantou Emei Ferroalloy (Group) Co. Ltd.	Sichuan, Leshan, Emeishan	100
Do.		Ulanqab Xiongwei Guangda New Materials Co. Ltd.	Nei Mongol, Ulanqab	120
Do.		Zhuhai SEZ Fangyuan Inc.	6 plants in Guangxi, Jingxi	130
Gallium	metric tons	Aluminum Corporation of China (Chinalco): Chalco Zunyi Aluminum Co. Ltd.	Locations: Guizhou, Zunyi	150
Do.	do.	Pingguo Aluminum Co. Ltd.	Guangxi, Pingguo	40
Do.	do.	East Hope Group Co. Ltd., including: East Hope Jinzhong Aluminum Co. Ltd.	Locations: Shanxi, Lingshi	60
Do.	do.	East Hope Mianchi Gallium Industry Co. Ltd.	Henan, Sanmenxia	80
Do.	do.	Shandong Aluminium Industry Co. Ltd.	Shandong, Zibo	20
Do.	do.	Shanxi Zhaofeng Aluminum & Power Co. Ltd.	Shanxi, Yangquan	25
Do.	do.	Xiaoyi Xing'an Gallium Industry Co. Ltd.	Shanxi, Xiaoyi	130
Do.	do.	Zhuhai SEZ Fangyuan Inc.	6 plants in multiple Provinces	130
Do.	do.	Zhuzhou Keneng New Material Co. Ltd.	Hunan, Zunyi	50
Gas, natural	million cubic meters	China National Offshore Oil Corp. (CNOOC)	Offshore fields at Bohai, East China Sea, and South China Sea	9,000
Do.	do.	China National Petroleum Corp. (CNPC) (PetroChina Ltd.)	Nei Mongol, Qinghai, Sichuan, and Xinjiang	110,000
Do.	do.	China Petroleum & Chemical Corp. (Sinopec Corp.)	Gasfields in multiple Provinces	35,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2, 3}	Annual capacity ^c
Gas, liquefied natural gas		Inner Mongolia Xingsheng Natural Gas Co. Ltd.	Nei Mongol, Erdos	500
Do.		Shaanxi Zhongyuan Green Energy Natural Gas Co. Ltd.	Shaanxi, Yulin	810
Do.		Xinjiang Guanghui New Energy Co. Ltd.	Xinjiang Uyghur, Hami	550
Germanium	metric tons	Nanjing Germanium Co. Ltd.	Jiangsu, Nanjing	30
Do.	do.	Nei Mongol Xilingol Tongli Germanium Industry Co. Ltd.	Nei Mongol, Xilinhot	20
Do.	do.	Shanghai Lontai Copper Co. Ltd.	Shanghai	10
Do.	do.	Shenzhen Nonfemet Co. Ltd.	Guangdong, Shaoguan	30
Do.	do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	60
Do.	do.	Yunnan Lincang Xinyuan Germanium Industrial Co. Ltd.	Yunnan, Lincang	50
Gold:				
Mine, Au content	kilograms	China Gold International Resources Corp.	Nei Mongol and Xizang	7,400
Do.	do.	China National Gold Group Co. Ltd.	Henan, Lingbao	20,200
Do.	do.	Hunan Gold Corp. Ltd.	Hunan, Huaihua, Yuanling	36,000
Do.	do.	Jiangxi Copper Co. Ltd.	Jiangxi, Dexing	4,000
Do.	do.	Lingbao Gold Group Co. Ltd.	Henan, Nanyang, Tongbai	1,900
Do.	do.	do.	Xinjiang Uyghur, Altay, Habahe	1,600
Do.	do.	Shandong Gold Mining Co. Ltd.	Shandong, Jinan	33,000
Do.	do.	Shandong Zhongkuang Group Co. Ltd.	Shandong, Yantai	5,000
Do.	do.	Tongling Nonferrous Metals Group Co. Ltd.	Anhui, Tongling	NA
Do.	do.	Western Mining Co. Ltd., 58%; Zijin Mining Group Co. Ltd., 22%; others, 20%	Xizang, Changdu, Jiangda	2,100
Do.	do.	Western Region Gold Co. Ltd. [Xinjiang Nonferrous Metal Industry (Group) Co. Ltd., 56.5%, and others 43.5%]	Xinjiang Uyghur, Hami, Yizhou	700
Do.	do.	do.	Xinjiang Uyghur, Yili, Ghulja	2,700
Do.	do.	do.	Xinjiang Uyghur, Tacheng, Toli	380
Do.	do.	Xinjiang Nonferrous Metal Industry (Group) Co. Ltd.	Xinjiang Uyghur, Yili, Ghulja	2,000
Do.	do.	Yintai Gold Co. Ltd.	Nei Mongol, Xilingol	5,300
Do.	do.	Zhaojin Mining Industry Co. Ltd.	Shandong, Yantai, Zhao yuan	10,400
Do.	do.	Zhongjin Gold Corp. Ltd.	Beijing	15,300
Do.	do.	Zijin Mining Group Co. Ltd.	Fujian, Shanghang	15,000
Refined	metric tons	China National Gold Group Jiapigou Mining Co. Ltd.	Jilin, Huadian	NA
Do.	do.	Daye Nonferrous Metals Co. Ltd.	Henan, Huangshi	20
Do.	do.	Dongwu Gold Group Co. Ltd.	Jiangsu, Suzhou	50
Do.	do.	Great Wall Gold Silver Refinery (China Banknote Printing and Minting Corp.)	Sichuan, Chengdu	100
Do.	do.	Guangdong Jinding Gold Co. Ltd.	Guangdong, Gao Yao	5
Do.	do.	Henan Yuguang Gold & Lead Co. Ltd.	Henan, Jiyuan	7
Do.	do.	Henan Zhongyuan Gold Smelter LLC	Henan, Sanmenxia	36
Do.	do.	Heraeus Precious Metal Technology (China) Co. Ltd.	Jiangsu, Nanjing	NA
Do.	do.	Hunan Chenzhou Mining Co. Ltd.	Hunan, Huaihua	50
Do.	do.	Inner Mongolia Qiankun Gold and Silver Refining Co. Ltd.	Nei Mongol, Hohhot	NA
Do.	do.	Jiangxi Copper Corp. Ltd.	Jiangxi, Yintan, Guixi	90
Do.	do.	Lingbao Gold Group Co. Ltd.	Henan, Luoyang	14
Do.	do.	Lingbao Jinyuan Tonghui Refinery Co. Ltd.	Henan, Lingbao	36
Do.	do.	Luoyang Zijin Yinhu Gold Refinery Co. Ltd. (Zijin Mining Group Co. Ltd.)	Henan, Luoyang	57
Do.	do.	Metalor Precious Metals (Suzhou) Co. Ltd.	Jiangsu, Suzhou	NA
Do.	do.	Shaanxi Gold Group Xi'an Qinjin Co. Ltd.	Shaanxi, Xi'an	NA
Do.	do.	Shandong Gold Smelting Co. Ltd.	Shandong, Yantai	NA
Do.	do.	Shandong Human Smelting Co. Ltd.	do.	50
Do.	do.	Shandong Zhaojin Gold & Silver Refining Co. Ltd.	Shandong, Zhao yuan	200
Do.	do.	Shanghai Tiancheng Gold Co. Ltd.	Shanghai	NA
Do.	do.	Shanghai Xinye Copper Industry Co. Ltd.	do.	NA
Do.	do.	Shenzhen Cuilu Gold Refinery Co. Ltd.	Guangdong, Shenzhen	NA
Do.	do.	Shenzhen Dianjin Precious Metal Refining Co. Ltd.	do.	NA

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^e
Gold:—Continued				
Refined—Continued	metric tons	Shenzhen Zhonghenglong Industrial Co. Ltd.	Guangdong, Shenzhen	150
Do.	do.	Sichuan Tianze Precious Metals Co. Ltd.	Sichuan, Chengdu	150
Do.	do.	Soochow Gold Group Co. Ltd.	Jiangsu, Suzhou	NA
Do.	do.	Urumqi Tianshan Star Precious Metal Smelting Co. Ltd. (Xinjiang Xinxin Mining Industry Co. Ltd.)	Xinjiang Uyghur, Urumqi	NA
Do.	do.	Yanggu Xiangguang Copper Industry Co. Ltd.	Shandong, Yanggu, Shifo	NA
Do.	do.	Yantai Guoda Precious Metal Smelting Co. Ltd.	Shandong, Zhaoyuan	10
Do.	do.	Yantai Penggang Gold Industry Co. Ltd.	Shandong, Penglai	NA
Do.	do.	Yuguang Gold & Lead Co. Ltd.	Henan, Jiyuan, Tiantan	5
Do.	do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	130
Do.	do.	Yunnan Copper Industry Co. Ltd.	Yunnan, Kunming	NA
Do.	do.	Yunnan Gold and Mining Group Co. Ltd.	Yunnan, Qujing	NA
Do.	do.	Zhaoyuan Gold Smelter Co. Ltd. (Shandong Zhaojin Group Co. Ltd.)	Shandong, Zhaoyuan	15
Do.	do.	Zhejiang Fuye Group Co. Ltd.	Zhejiang, Fuye	12
Do.	do.	Zhuzhou Smelter Group Co. Ltd.	Hunan, Zhuzhou	NA
Do.	do.	Zijin Mining Group Gold Smelting Co. Ltd.	Fujian, Longyan, Shanghang	160
Graphite		Heilongjiang Hegang Graphite Industry Co. Ltd.	Heilongjiang, Luobei	NA
Do.		Hensen Graphite Co. Ltd.	Heilongjiang, Jiangsu and Nei Mongol	30
Do.		Jixi Aoyu Graphite Co. Ltd.	Heilongjiang, Jixi	100
Do.		Jixi Liumao Graphite Resources Co. Ltd.	do.	80
Do.		Luobei Haida Graphite Co. Ltd.	Heilongjiang, Hegang	NA
Do.		Nei Mongol Xinghe Jingxin Graphite Co. Ltd.	Nei Mongol, Xinghe	10
Do.		Qingdao Haida Graphite Co. Ltd.	Shandong, Qingdao, Pingdu	60
Do.		Qingdao Yanxin Graphite Products Co. Ltd.	Shandong, Qingdao	28
Gypsum, mine		Hebei Xingtai Shuanghua Gypsum Products Co. Ltd.	Hebei, Xingtai	NA
Do.		Henan Yongtai Gypsum Co. Ltd.	Henan, Sanmenxia	850
Do.		Hubei Jingmen Yulian Gypsum Co. Ltd.	Hubei, Jingmeng	500
Do.		Hubei Shuangxing Gypsum Co. Ltd.	do.	NA
Do.		Ningxia Jinruiyuan Industry and Trade Co. Ltd.	Ningxia, Yanchi	NA
Do.		Ningxia Qingshan Sanyuan Mining Co. Ltd.	do.	NA
Do.		Ningxia Yanchi Qianyuan Gypsum Mining Co. Ltd.	do.	200
Do.		Ningxia Yanchi Yulian Gypsum Co. Ltd.	do.	NA
Do.		Ninhxia Yanchi Shunning Gypsum Co. Ltd.	do.	NA
Do.		Pizhou Huanyu Gypsum Co. Ltd.	Jiangsu, Pizhou	NA
Do.		Shanxi Taiyuan Xishan Gypsum Mine Co. Ltd.	Shanxi, Taiyuan	NA
Indium, refinery	metric tons	Guangxi Debang Technology Co. Ltd.	Guangxi, Liuzhou	120
Do.	do.	Guangxi Tanghan Zinc & Indium Co. Ltd.	Guangxi, Hechi	30
Do.	do.	Hsikwangshan Twinkling Star Antimony Co. Ltd. (China Minmetals Corp.)	Hunan, Lengshuijiang	7
Do.	do.	Huludao Nonferrous Metals Group Co. Ltd.	Liaoning, Huludao	50
Do.	do.	Jinshan Indium and Germanium Metallurgical Chemical Co.	Guangxi, Hechi, Nandan	NA
Do.	do.	Laibin smelter (Liuzhou Huaxi Group Co.)	Guangxi, Laibin	60
Do.	do.	Liuzhou Zinc Products Co. Ltd.	Guangxi, Liuzhou	20
Do.	do.	Nanjing Germanium Co. Ltd.	Jiangsu, Nanjing	150
Do.	do.	Nanjing Sanyou Electronic Material Co. Ltd.	do.	50
Do.	do.	Shenzhen Nonfemet Co. Ltd.	Guangdong, Shaoguan	25
Do.	do.	Xiangtan Zhengtan Nonferrous Metal Co. Ltd.	Hunan, Xiangtan	75
Do.	do.	Yintai Technology Co. Ltd.	Guangxi, Liuzhou	40
Do.	do.	Yuguang Gold-Lead Co. Ltd.	Henan, Jiyuan	10
Do.	do.	Yunnan Chengfeng Nonferrous Metals Co. Ltd.	Yunnan, Gejiu	10
Do.	do.	Yunnan Mengzi Mining and Smelting Co. Ltd.	Yunnan, Honghe	30
Do.	do.	Zhuzhou Smelter Group Co. Ltd.	Hunan, Zhuzhou	60

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴
Iron ore, mine, concentrate	Add New Energy Investment Holdings Group Ltd.	Shandong, Yangzhuang	2,300
Do.	Anshan Mining Co. Ltd.	Liaoning, Anshan	30,000
Do.	Aowei Holding Ltd.	Hebei, Laiyuan	15,800
Do.	Banshigou Iron Mine Mining Co. Ltd.	Jilin, Hunjiang	1,400
Do.	Baotou Iron and Steel Group Co. Ltd.	Nei Mongol, Baotou	10,000
Do.	Baowu Maanshan Iron and Steel Group	Anhui, Maanshan	5,000
Do.	Benxi Iron and Steel Co. Ltd.	Liaoning, Benxi	8,000
Do.	China Baowu Steel Group Corp. Ltd.	Hubei, Wuhan	6,350
Do.	China Hanking Holdings Ltd.	do.	4,000
Do.	China Minmetals Corp.	Mines in multiple Provinces	8,730
Do.	China Vanadium Titano-Magnetite Mining Co. Ltd.	Sichuan, Huili	1,890
Do.	Dabaoshan Mining Co. Ltd.	Guangdong, Qujiang	1,670
Do.	Hainan Mining Co. Ltd.	Hainan, Changjiang	4,600
Do.	Hebei Iron and Steel Group Co. Ltd.	Hebei, Tangshan	29,000
Do.	Huaxia Jianlong Mining Technology Co. Ltd.	Mines in multiple Provinces	5,500
Do.	Jiuquan Iron and Steel Co. Ltd.	Gansu, Zhangye, Sunan Yugur	4,400
Do.	Kunming Iron and Steel Co. Ltd.	Yunnan, Kunming	2,500
Do.	Meishan Metallurgical Co. Ltd.	Jiangsu, Nanjing	2,000
Do.	Metallurgical Corporation of China Ltd.	Mines in multiple Provinces	591
Do.	Nanjing Iron & Steel Co. Ltd.	Jiangsu, Nanjing	2,500
Do.	Panzhihua Mining Co. Ltd. [Panzhihua Iron and Steel Group Co. Ltd. (Pangang)]	Sichuan, Panzhihua	13,000
Do.	Shandong Iron and Steel Group Co. Ltd.	Shandong, Jinan	3,000
Do.	Shandong Jinling Mining Co. Ltd.	Shandong, Zibo	650
Do.	Shandong Taishan Sunlight Group Co. Ltd.	Shandong, Laiwu	2,000
Do.	Shoudu (Capital) Mining Co. Ltd.	Mines in multiple Provinces	5,000
Do.	Taiyuan Iron and Steel Co. Ltd.	Shanxi, Taiyuan	12,000
Do.	Tonghua Iron & Steel Group Co. Ltd.	Jilin, Changchun	782
Do.	Xinjiang Yaxing Mining Co. Ltd.	Xinjiang Uyghur, Akto	2,000
Do.	Xinyu Iron & Steel Group Co. Ltd.	Jiangxi, Xinyu	527
Do.	Yingliu Mining Co. Ltd.	Anhui, Hefei	1,250
Do.	Zijin Mining Group Co. Ltd.	Xinjiang Uyghur, Altay, Fuyun	3,100
Iron and steel, raw steel	Ansteel Group Corp. Ltd.	Liaoning, Anshan	56,000
Do.	Baotou Iron and Steel Group Co. Ltd.	Nei Mongol, Baotou	1,800
Do.	Baowu Steel Group Corp. Ltd.	Anhui, Maanshan; Hubei, Wuhan	130,000
Do.	Beijing Jianlong Heavy Industry Group Co. Ltd.	Beijing	34,000
Do.	Benxi Beiyang Iron and Steel (Group) Co. Ltd.	Liaoning, Benxi, Pingshan	9,000
Do.	Benxi Steel Plates Co. Ltd.	Liaoning, Benxi, Xihu	10,000
Do.	Chengyu Vanadium and Titanium Technology Co. Ltd.	Sichuan, Neijiang, Weiyuan	5,200
Do.	CITIC Pacific Special Steel Holdings Ltd.	Jiangsu, Jiangyin	20,000
Do.	Fujian Dadonghai Industrial Group Co. Ltd.	Fujian, Fuzhou, Changle	20,000
Do.	Fujian Sangang (Group) Co. Ltd.	Fujian, Sanming	12,000
Do.	Fangchenggang Jinxi Section Steel Technology Co. Ltd.	Guangxi, Fangchenggang	10,000
Do.	Guangxi Liuzhou Iron and Steel Group Co. Ltd.	Guangxi, Liuzhou	15,000
Do.	Hebei Iron and Steel Group Co. Ltd. (HBIS)	Hebei, Handan	57,500
Do.	Hunan Valin Iron & Steel Group Co. Ltd.	Hunan, Changsha	25,000
Do.	Inner Mongolia Baotou Steel Union Co. Ltd.	Nei Mongol, Baotou, Hexi	17,500
Do.	Jiangsu Shagang Group Co. Ltd.	Jiangsu, Suzhou, Zhangjiagang	39,000
Do.	Nanjing Iron & Steel Co. Ltd. (NISCO)	Jiangsu, Nanjing, Luhe	10,000
Do.	Rizhao Steel Holding Group Co. Ltd.	Shandong, Rizhao	15,000
Do.	Shandong Dexing Group Co. Ltd.	Shandong, Dezhou	15,000
Do.	Shandong Iron and Steel Group Co. Ltd.	Shandong, Jinan	31,000
Do.	Shougang Iron and Steel Co. Ltd.	Beijing	34,000
Do.	Taiyuan Iron and Steel (Group) Co. Ltd.	Shanxi, Yaiyuan, Jiancaoping	12,900
Do.	Tangshan Donghai Iron and Steel Group Co. Ltd.	Hebei, Tangshan, Luan	10,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^e
Iron and steel, raw steel—Continued	Tangshan Yanshan Iron and Steel Co. Ltd.	Hebei, Tangshan, Qian'an	10,000
Do.	Xinyu Iron and Steel Group Co. Ltd. (XinSteel)	Jiangxi, Xinyu, Yushui	10,000
Do.	Zhongtian Iron and Steel Group Co. Ltd.	Jiangsu, Changzhou, Wujin	12,000
Do.	do.	Jiangsu, Nantong, Haimen	8,000
Lead:			
Mine, Pb content	Baiyin Nonferrous Metal Co.	Gansu, Baiyin	15
Do.	do.	Gansu, Changba	30
Do.	do.	Gansu, Lijiaogou	5
Do.	China Gold International Resources Corp. Ltd.	Xizang, Maizhokunggar	54
Do.	China Tin Group Co. Ltd. (Guangxi Huaxi Group Co. Ltd.)	Guangxi, Dachang	30
Do.	Dongshengmiao Mining Co. Ltd. (Guocheng Mining Co. Ltd.)	Nei Mongol, Urad Houqi	6
Do.	Greenway Mining Group Ltd.	Yunnan, Dehong	1
Do.	do.	Yunnan, Yingjiang	1
Do.	Guangxi Cenxi Longwan Mining Co. Ltd. (Guangxi Nonferrous Metals Group Co. Ltd.)	Guangxi, Cenxi, Hesan	5
Do.	Guangxi Zhongjin Lingnan Mining Co. Ltd.	Guangxi, Laibin, Wuxuan	NA
Do.	Hunan Baoshan Nonferrous Metals and Mining Co. Ltd.	Hunan, Baoshan	10
Do.	Hunan Shuikoushan Nonferrous Metals Group Co. Ltd. (China Minmetal Corp.)	Hunan, Kangjiawan	17
Do.	do.	Hunan, Chaling, Shuikoushan	19
Do.	Jiangxi Dean Tianbao Mining Group Co. Ltd.	Jiangxi, De'an, Zhangshiba	10
Do.	Jinhui Mining Co. Ltd.	Gansu, Longnan, Hui	25
Do.	Shandong Gold Non-Ferrous Metal Mining Group Co. Ltd.	Nei Mongol, Xilingol, East Ujimqin	12
Do.	Shenzhen Zhongjin Lingnan Nonferrous Metals Co. Ltd.	Guangdong, Shaoguan	93
Do.	Sichuan Xinyuan Mining Industry Co. Ltd.	Sichuan, Xiacun	25
Do.	Tibet Huaxia Mineral Co. Ltd.	Xizang, Nagqu, Lhari	24
Do.	Tibet Huayu Mining Co. Ltd.	Xizang, Lhasa	14
Do.	Western Mining Co. Ltd.	Qinghai, Xitieshan	50
Do.	Xinjiang Xinxin Mining Industry Co. Ltd.	Xinjiang Uyghur, Fuyun	15
Do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Huize, Rongda	50
Do.	Yunnan Jinding Zinc Industry Co. Ltd. (Sichuan Hongda Group Co. Ltd.)	Yunnan, Lanping	5
Do.	Zijin Mining Group Co. Ltd.	Nei Mongol, Bayannur	10
Do.	do.	Xinjiang Uyghur, Wuqia	20
Refinery:			
Primary	Anhui Tongguan Chizhou Nonferrous Metals Co. Ltd.	Anhui, Chizhou	100
Do.	Anyang Minshan Nonferrous Metals Co. Ltd. (Yubei Metal Co. Ltd.)	Henan, Anyang	160
Do.	Baiyin Nonferrous Metals Group Co. Ltd.	Gansu, Baiyin	80
Do.	Bayannur Zijin Nonferrous Metals Co. Ltd.	Nei Mongol, Bayannur	100
Do.	Chenzhou Jingui Silver Industry Co. Ltd.	Hunan, Chenzhou	100
Do.	Chifeng Shanjin Silver and Lead Co. Ltd.	Nei Mongol, Chifeng	100
Do.	Guangxi Nandan Nanfang Nonferrous Metal Smelting Co. Ltd.	Guangxi, Hechi	200
Do.	Haicheng Chengxin Nonferrous Metals Co. Ltd.	Liaoning, Chengxin	100
Do.	Hanzhong Zinc Industry Co. Ltd. (Youser Group)	Shaanxi, Mainxian	80
Do.	Henan Jinli Gold and Lead Group Co. Ltd.	Henan, Jiyuan	300
Do.	Henan Yuguang Gold and Lead Co. Ltd.	do.	400
Do.	Hengyang Shuikoushan Sanli Industry & Trade Co.	Hunan, Changning	50
Do.	Hulunbuir Chihong Mining Co. Ltd. (Yunnan Chihong Zinc and Germanium Co. Ltd.)	Nei Mongol, Hulunbuir	80
Do.	Hunan Huaxin Rare Technology Co. Ltd.	Hunan, Chenzhou	100
Do.	Hunan Shuikoushan Nonferrous Metals Group Co. Ltd.	Hunan, Changning	150
Do.	Hunan Yuteng Nonferrous Metals Co. Ltd.	Hunan, Chenzhou	180
Do.	Jiangxi Copper Corp. Ltd.	Jiangxi, Jiujiang, Hukou	200
Do.	Jiangxi Jinde Lead Industry Co. Ltd.	Jiangxi, Shangrao, Dexing	80
Do.	Jinchengjiang Chengyuan Mining & Smelting Co. Ltd.	Guangxi, Hechi, Jinchengjiang	60

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Lead:—Continued			
Refinery:—Continued			
Primary—Continued	Jiquan Wangyang Smeltery Group Co. Ltd.	Henan, Jiaozuo	270
Do.	Mengzi Mining and Metallurgical Industry Co. Ltd.	Yunnan, Gejiu	60
Do.	Lingbao Xinling Refining Co. Ltd.	Henan, Lingbao	100
Do.	Lingbao Zhicheng Lead Co. Ltd.	do.	100
Do.	Luoyang Yongning Nonferrous Technology Co. Ltd.	Henan, Luoyang	80
Do.	Nanfang Nonferrous Metal Smelting Co. Ltd.	Guangxi, Hechi	80
Do.	Qinghai Xiyu Nonferrous Metal Co. Ltd.	Qinghai, Golmud	100
Do.	Shaanxi Dongling Group Co. Ltd.	Shaanxi, Baoji, Fengxiang	100
Do.	Shandong Humon Smelting Co. Ltd.	Shandong, Yantai, Mouping	100
Do.	Shenzhen Zhongjin Lingnan Nonfemet Co. Ltd.	Guangdong, Shaoguan	100
Do.	Western Mining Co. Ltd.	Qinghai, Xining	100
Do.	Xingan Silver and Lead Smelting Co. Ltd.	Nei Mongol, Hexigten	100
Do.	Xuzhou Chunxing Alloy Co. Ltd.	Jiangsu, Xuzhou	150
Do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	300
Do.	Yunnan Shadian Lead Industry Co. Ltd.	Yunnan, Honghe	100
Do.	Yunnan Xinli Nonferrous Metals Co. Ltd.	Yunnan, Kunming	100
Do.	Yunnan Zhengxing Industrial Group Co. Ltd.	Yunnan, Honghe	60
Do.	Zhuzhou Smelter Group Co. Ltd.	Hunan, Zhuzhou	120
Secondary	Anhui Huaxin Lead Industry Group Co. Ltd.	Hunan, Chenzhou	120
Do.	Anxin Chentai Nonferrous Metals Smelting	Hebei, Baoding	50
Do.	Anyang Jinpeng Lead Industry Co. Ltd.	Henan, Anyang	250
Do.	Anyang Yubei Gold and Lead Co. Ltd.	do.	250
Do.	Baoding Gangan Nonferrous Metals Co.	Hebei, Baoding	250
Do.	Guangling Juyuan Silver Ltd.	Jiangsu, Yangzhou	60
Do.	Hebei Anxin Huacheng Lead Co.	Hebei, Anxin	50
Do.	Hebei Jinyu Sheng Renewable Resources Utilization Co.	Hebei, Baoding, Xiongxian	100
Do.	Hebei Songhe Renewable Resources Co. Ltd.	Hebei, Anxin	250
Do.	Henan Asia Metal Recycling Co. Ltd.	Henan, Xinxiang	90
Do.	Henan Jinli Gold and Lead Group Co. Ltd.	Henan, Jiyuan	440
Do.	Henan Yuguang Gold and Lead Co. Ltd.	do.	200
Do.	Hubei Chukai Metallurgy Co. Ltd.	Hubei, Xiangyang	60
Do.	Jiangsu New Chunxing Resource Recycling Co. Ltd.	Jiangsu, Xuzhou, Pizhou	100
Do.	Yunnan Xiangyun Feilong Recycling Technology Co. Ltd.	Nei Mongol, Ximeng	80
Lithium, Li ₂ CO ₃ equivalent:			
Mine	Antai Mining Co. Ltd.	Chongqing	3
Do.	Fujian Zhonghe Co. Ltd.	Sichuan, Maerkang	6
Do.	Ganfeng Lithium Co. Ltd.	Jiangxi, Ganzhou, Ningdu	20
Do.	Ganzizhou Rongda Lithium Co. Ltd. (Youngy Co. Ltd.)	Sichuan, Tagong	8
Do.	Jinchuan Aoyinuo Mining Co. Ltd. (Chengxin Lithium Group)	Sichuan, Jinchuan, Yelonggou	13
Do.	Ningxia Non-Ferrous Metals Import and Export Corp. (operator), and Yichun Tantalum Co. Ltd. (owner)	Jiangxi, Yichun, Yifeng	30
Do.	Sichuan Yahua Industrial Group Co. Ltd.	Sichuan, Ya'an	8
Do.	Yichun Yinli New Energy Co. Ltd.	Jiangxi, Yichun, Yifeng	8
Do.	Youngy Investment Holding Group Co. Ltd.	Sichuan, Kangding	9
Brine	Golmud Zangge Mining Co. Ltd. (Zangge Potash Fertilizer Co. Ltd.)	Qinghai, Golmud, Qarhan Lake	10
Do.	Minmetals Salt Lake Co. Ltd. (China Minmetals Corp., 51%, and Qinghai Liangcheng Mining Co. Ltd., 49%)	Qinghai, Mangya, Yiliping Lake	10
Do.	Qinghai CITIC Guoan Lithium Industry Development Co. Ltd.	Qinghai, Xitai Ginel Salt Lake	30
Do.	Qinghai Dongtai Ginel Lithium Resources Co. Ltd. (Western Mining Group Co. Ltd.)	Qinghai, Dongtai Ginel Salt Lake	10
Do.	Qinghai Hengxinrong Lithium Technology Co. Ltd.	Qinghai, Xitai Ginel Salt Lake	20
Do.	Qinghai Jintai Lithium Industry Co. Ltd. (Jintai Potash Fertilizer)	Qinghai, Balun Mahai Lake	7
Do.	Qinghai Qaidam Xinghua Lithium Salt Co. Ltd.	Qinghai, Da Qaidam Salt Lake	10

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^e
Lithium, Li ₂ CO ₃ equivalent:—Continued			
Brine—Continued	Qinghai Salt Lake Industry Co. Ltd.	Qinghai, Golmud, Qarhan Lake	24
Do.	Tibet Guoneng Mining Development Co. Ltd. (Tibet City Development Investment Co. Ltd.)	Xizang, Lungmu Tso Salt Lake	5
Do.	Tibet Mineral Development Co. Ltd. (Baowu Steel Group Corp. Ltd.)	Xizang, Zhabuye Salt Lake	10
Refinery	Chengdu Rongjie Lithium Industry Technology Co. Ltd.	Sichuan, Chengdu	20
Do.	Guangxi Tianyuan New Energy Materials Co. Ltd. (Albemarle Lithium UK Ltd., 100%)	Guangxi, Qinzhou, Qinnan	10
Do.	Hainan Xingzihai New Material Co. Ltd. (Hainan Mining Co. Ltd.)	Hunan, Danzhou, Yanpu	18
Do.	Huludao Hongjing Technology Co. Ltd. (Liaoning Hongjing Group)	Liaoning, Hongjing, Lianshan	20
Do.	H-Zone Lithium Technology Co. Ltd.	Jiangxi, Yichun	10
Do.	Jiangsu Ronghui General Lithium Co. Ltd.	Jiangsu, Nantong, Haimen	26
Do.	Jiangxi Dongpeng New Materials Co. Ltd. (China Mining Resources Group Co. Ltd., 100%)	Jiangxi, Xinyu	33
Do.	Jiangxi Ganfeng Lithium Co. Ltd.	Jiangxi, Xinyu, Yushui	50
Do.	do.	Jiangxi, Ganzhou, Ningdu	50
Do.	Jiangxi Jinhui Lithium Industry Co. Ltd.	Jiangxi, Yichun	20
Do.	Jiangxi Nanshi Lithium New Materials Co. Ltd.	do.	60
Do.	Jiujiang Ronghui Lithium Industry Technology Co. Ltd. [General Lithium (Jiujiang) Tech Corp.]	Jiangxi, Jiujiang, Hukou	15
Do.	Qinghai CITIC Guoan Lithium Industry Development Co. Ltd.	Qinghai, Golmud	5
Do.	Qinghai Hengxinrong Lithium Technology Co. Ltd.	Qinghai, Haixi	20
Do.	Qinghai Lithium Co. Ltd. (Western Mining Group Co. Ltd., 74.54%, and others, 25.46%)	Qinghai, Xining	10
Do.	Qinghai Yanhu Fozhao Lanke Lithium Co. Ltd. (Qinghai Salt Lake Industry Co. Ltd., 51.42%, and Kodak Manufacturing, 43.58%)	Qinghai, Golmud	30
Do.	Shandong Ruifu Lithium Industry Co. Ltd.	Shandong, Feicheng	34
Do.	Sichuan Aba Guangsheng Lithium Co. Ltd.	Sichuan, Wenchuan	2
Do.	Sichuan Changhehua Lithium Technology Co. Ltd. (Rongjie Group)	Sichuan, Chengdu	6
Do.	Sichuan Energy Investment Dingsheng Lithium Technology Co. Ltd.	Sichuan, Meishan	10
Do.	Sichuan Tianqi Lithium Industry Co. Ltd.	Chongqing, Tongliang	3
Do.	do.	Jiangsu, Zhangjiagang	20
Do.	do.	Sichuan, Chengdu	26
Do.	Sichuan Tianyi Lithium Industry Co. Ltd.	Sichuan, Yibin	45
Do.	do.	Sichuan, Meishan	53
Do.	Sichuan Yahua Lithium Industrial (Ya'an) Co. Ltd.	Sichuan, Ya'an	35
Do.	Sichuan Zhiyuan Lithium Industry Co. Ltd.	Sichuan, Deyang, Mianzhu	38
Do.	Tangshan Xinfeng Lithium Industry Co. Ltd.	Hebei, Tangshan	19
Do.	Tibet Mineral Development Co. Ltd. (China Baowu Steel Group)	Xizang, Lhasa	5
Do.	Wudi Jinhaiwan Lithium Technology Co. Ltd.	Shandong, Binzhou	26
Do.	Xinjiang Haoxin Lithium Salt Development Co. Ltd.	Xinjiang Uyghur, Urumqi	5
Do.	Yichun Yinli New Energy Co. Ltd. (Jiangxi Special Electric Motor Co. Ltd.)	Jiangxi, Yichun	25
Do.	Yongxing Special Material Technology Co. Ltd.	do.	10
Magnesium:			
Mine, ore	Liaoning Magnesite Mining Co.	Liaoning, Haicheng	NA
Do.	Nanjing Yunhai Special Metal Co. Ltd.	Jiangsu, Nanjing	1,600
Magnesia	Puyang Refractory Group Co. Ltd.	Qinghai, Haidong	520
Metal, primary	Century Sunshine Group Holding Ltd.	Xinjiang Uyghur, Hami	45
Do.	do.	Jilin, Baishan	75
Do.	Fugo Xintian Magnesium Alloy Co. Ltd.	Shaanxi, Yulin, Fugu, Xintian	30
Do.	Fugu County Jinwantong Magnesium Industry Co. Ltd.	do.	42

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2, 3}	Annual capacity ^c
Magnesium:—Continued			
Metal, primary—Continued	Fugu Jingfu Coal Chemical Co. Ltd.	Shaanxi, Yulin	20
Do.	Fugu Taida Coal Chemical Co. Ltd.	do.	20
Do.	Fugu Yihe Magnesium Co. Ltd.	Shaanxi, Yulin, Fugu, Yihe	30
Do.	Huayu Enterprises (Group) Ltd.	Shanxi, Jishan	35
Do.	Nanjing Yunhai Special Metal Co. Ltd.	Jiangsu, Nanjing	100
Do.	Shaanxi Fugu Yufeng Magnesium Industry Co. Ltd.	Shaanxi, Yulin, Fugu, Yufeng	25
Do.	Shaanxi Fugu Zhongxin Pvt. Ltd.	Shaanxi, Yulin, Fugu, Zhongxin	20
Do.	Shaanxi Haotian Group Coal Power Metallurgical and Chemical Co. Ltd.	Shaanxi, Yulin, Fugu, Haotian	30
Do.	Shaanxi Sanxin Group Co. Ltd.	Shaanxi, Yulin, Fugu	30
Do.	Shaanxi Tianyu Magnesium Industry Group Co. Ltd.	Jiangsu, Nanjing	50
Do.	Shanxi Bada Magnesium Industry Co. Ltd.	Shanxi, Wenxi	50
Do.	Shanxi Wenxi Regal Magnesium Industry Co. Ltd.	do.	55
Do.	Shanxi Wenxi Yingguang Magnesium Industry Group Co. Ltd.	do.	40
Do.	Shanxi Wulong Investment Group Co. Ltd.	Shanxi, Yuncheng, Yuanqu	25
Do.	Shanxi Yingguang Huasheng Magnesium Industry Co. Ltd.	do.	65
Do.	Shenmu Xinqing Co. Ltd.	Shaanxi, Shenmu	25
Do.	Taiyuan Tongxiang Magnesium Metal Co. Ltd.	Shanxi, Taiyuan	45
Do.	Taiyuan Yiwei Magnesium Co. Ltd.	do.	21
Do.	Wenxi Biyun Magnesium Co. Ltd.	Shanxi, Wenxi	30
Do.	Yulin Tianlong Magnesium Industry Co. Ltd.	Shaanxi, Yulin, Fugu, Tianlong	25
Do.	Zunyi Titanium Co. Ltd.	Guizhou, Zunyi	24
Alloy	Magontec Xi'an Co. Ltd.	Shaanxi, Xi'an	40
Do.	Nanjing Yunhai Special Metal Co. Ltd.	Jiangsu, Nanjing	200
Do.	Shanxi Bada Magnesium Industry Co. Ltd.	Shanxi, Wenxi	50
Do.	Shanxi Wenxi Regal Magnesium Industry Co. Ltd.	do.	100
Do.	Shanxi Wenxi Zhenxin Magnesium Industry Co. Ltd.	do.	40
Manganese:			
Mine, ore, gross weight	Akto Baiyuanfeng Mining Industry Co. Ltd. (Western Gold)	Xinjiang Uyghur, Kashgar	1,200
Do.	Changyang Gucheng Manganese Industry Co. Ltd.	Hubei, Yichang, Changyang	450
Do.	Chongqing Xishuan Sanrun Mining Co. Ltd.	Chongqing, Xiushan	120
Do.	CITIC Dameng Mining Co. Ltd.	Guangxi, Chongzuo, Daxin	260
Do.	Guikang New Materials Co. Ltd.	Guangxi, Guilin, Lingchuan	200
Do.	Guizhou Wuling Manganese Industry Co. Ltd. (Chongqing Wujiang Industry Group Co. Ltd.)	Guizhou, Songtao, Wuluo	6,000
Do.	Huayuan (Huayuan County) Yufeng Manganese Industry Co. Ltd.	Hunan, Huayuan	310
Do.	Hubei Changyang Hongxin Industry Group Co. Ltd.	Hubei, Yichang	450
Do.	Hunan Dongfang Mining Co. Ltd.	Hunan, Xiangxi	200
Do.	Jingxi Xinyuan Manganese Industry Co. Ltd.	Guangxi, Baise, Hurun	500
Do.	Linze Hongxin Mineral Industry Co. Ltd.	Gansu, Zhangye, Linze	600
Do.	Nanfang Manganese Group Ltd.	Guangxi, Nanning	2,700
Do.	Ningxia Shengyan Industrial Group Fuhua Metallurgical Co. Ltd.	Ningxia, Shizuishan, Pingluo	1,000
Do.	Songtao Sanhe Manganese Industry Group Co. Ltd.	Guizhou, Tongren, Songtao	320
Do.	South Manganese Group Ltd.: Daxin Dameng Manganese Co. Ltd.	Locations: Guangxi, Chongzuo, Daxin	850
Do.	Zunyi Hui Changgou Manganese Mine Co. Ltd.	Guizhou, Zunyi, Honghuangang	250
Do.	Tiandeng branch	Guangxi, Chongzuo, Daxin	610
Do.	Xiushan County Jiayuan Mining Co. Ltd.	Chongqing, Xiushan	120
Do.	Xiushan County Tianyuan Mining Industry Co. Ltd.	do.	180
Do.	Yunnan Wenshan Dounan Manganese Industry Co. Ltd.	Yunnan, Wenshan, Yanshan	300
Do.	Zunyi Tianci Manganese Industry Group Co. Ltd.	Guizhou, Zunyi, Honghuagang	290
Metal	Akto Kebang Manganese Industry Co. Ltd. (Xinjiang Xinxin Mining Industry Co. Ltd.)	Xinjiang Uyghur, Kashgar	75
Do.	China Manganese (Hubei) Technology Development Co. Ltd.	Hubei, Changyang, Longzhouping	63

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Manganese:—Continued			
Metal—Continued	Chongqing Dalang Metallurgical New Materials Co. Ltd. [Chongqing Bosai Mining (Group) Co. Ltd.]	Chongqing, Fuling	550
Do.	Chongqing Tycoon Manganese Industry Co. Ltd.	Chongqing, Longtan, Wuyu	50
Do.	Chongqing Wujiang Industry Group Co. Ltd.: Chongqing Xiushan Wuling Manganese Industry Corp.	Locations: Chongqing	30
Do.	Guizhou Wuling Manganese Industry Co. Ltd.	Guizhou, Tongren, Songtao	80
Do.	Chongqing Xishuan Sanrun Mining Co. Ltd.	Chongqing, Xiushan	30
Do.	CITIC Dameng Mining Co. Ltd.	Guangxi, Chongzuo, Daxin	130
Do.	Dushan Jinmeng Manganese Industry Co. Ltd.	Guizhou, Dushan, Mawei	30
Do.	Guangxi Jinmeng Manganese Industry Co. Ltd.	Guangxi, Hechi, Yizhou	15
Do.	Guangxi Xinzheng Manganese Industry Group Co. Ltd.	Guangxi, Chongzuo, Daxin	60
Do.	Guizhou Tongren Jinrui Manganese Industry Co. Ltd.	Guizhou, Tongren, Songtao	30
Do.	Guizhou Wuling Manganese Industry Co. Ltd. (Chongqing Wujiang Industry Group Co. Ltd.)	Guizhou, Tongren, Songtao, Wuluo	81
Do.	Hubei Changyang Hongxin Industry Group Co. Ltd.	Hubei, Yichang, Changyang	50
Do.	Hunan Dongfang Mining Co. Ltd.	Hunan, Xiangxi, Baojing	70
Do.	Jingxi Baikuang Manganese Industry Co. Ltd.	Guangxi, Jingxi	25
Do.	Jingxi Xinyuan Manganese Industry Co. Ltd.	Guangxi, Baise, Hurun	40
Do.	Ningxia Tianyuan Manganese Industry Co. Ltd.	Ningxia, Zhongwei, Zhongning	800
Do.	Songtao Sanhe Manganese Industry Group Co. Ltd.	Guizhou, Tongren, Songtao	60
Do.	South Manganese Group Ltd.	Guangxi, Chongzuo, Daxin	200
Do.	Xiushan County Jiayuan Mining Co. Ltd.	Chongqing, Xiushan, Longchi	50
Do.	Yongzhou Xincheng Manganese Industry Co. Ltd.	Hunan, Yongzhou, Lingling	30
Do.	Yunnan Wenshan Dounan Manganese Industry Co. Ltd.	Yunnan, Wenshan, Yanshan, Pingyuan	20
Do.	Zhongmeng (Hubei) Technology Development Co. Ltd.	Hubei, Suizhou, Guangshui	40
Do.	Zunyi Tianci Manganese Industry (Group) Jinfeng Co. Ltd.	Guizhou, Zunyi	50
Mercury:			
Mine, ore	Guizhou Dalong Yinxing Mercury Co. Ltd.	Guizhou, Tongren	NA
Do.	Guizhou Hongling Mercury Co. Ltd.	do.	NA
Do.	Shaanxi Mercury and Antimony Technology Co. Ltd.	Shaanxi, Xi'an	NA
Smelter metric tons	Guizhou Hongling Mercury Co. Ltd.	Guizhou, Tongren	NA
Do. do.	Guizhou Tongren Wanshan Hongjing Mercury Tndustry Co. Ltd.	do.	350
Do. do.	Shaanxi Mercury and Antimony Technology Co. Ltd.	Shaanxi, Xi'an	NA
Chemical products	do. Guizhou Tongren Wanshan Hongjing Mercury Tndustry Co. Ltd.	Guizhou, Tongren	7,000
Do. do.	Guizhou Wanshan Minerals Co. Ltd.	do.	20,000
Molybdenum, mine, concentrate	Chifeng Aolunhua Mining Co. Ltd.	Nei Mongol, Chifeng	6
Do.	China Gold Inner Mongolia Mining Co. Ltd.	Nei Mongol, Hulunbuir, Manzhouli	14
Do.	China Molybdenum Co. Ltd.	Henan, Luoyang, Luanchuan	15
Do.	Fengning Xinyuan Mining Co. Ltd. (Jianlong Group)	Hebei, Chengde	12
Do.	Jiangxi Copper Co. Ltd.	Jiangxi, Shangrao, Dexing	8
Do.	Jilin Daheishan Molybdenum Industry Co. Ltd. (Zhongze Group)	Jilin, Jilin, Yongji	6
Do.	Jinduicheng Molybdenum Industry Co. Ltd. (Shaanxi Non-ferrous Metals Holding Group Co. Ltd.)	Shaanxi, Weinan, Hua, and Henan, Luoyang, Ruyang	39
Do.	Liaoning Xinhua Longdayou Molybdenum Industry Co. Ltd.	Nei Mongol, Bayannur	NA
Do.	Luanchuan County Jinding Mining Co. Ltd.	Henan, Luanchuan	6
Do.	Luanchuan Longyu Molybdenum Industry Co. Ltd.	do.	14
Do.	Luoyang Fuchuan Co. Ltd. (China Molybdenum Co. Ltd.)	do.	14
Do.	Yichun Luming Mining Co. Ltd. (China Railway Group Ltd.)	Heilongjiang, Yichun	23
Nickel, Ni content:			
Mine	Jilin Jien Nickel Industry Co. Ltd.	Jilin, Pangshi	6
Do.	Jinchuan Group Co. Ltd.	Gansu, Jinchuan	90
Do.	Shaanxi Hua'ao Mining Industry Co. Ltd.	Shaanxi, Lueyang	6

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹		Annual capacity ^c	
		Location of main facilities ^{2,3}		
Nickel, Ni content:—Continued				
Mine—Continued	Xinjiang Xinxin Mining Industry Co. Ltd.: Xinjiang Hami Tianlong Nickel Industry Ltd.	Locations: Xinjiang, Hami	1	
Do.	Xinjiang Yakesi Resources Ltd.	do.	17	
Do.	Yunnan Henghao Nickel Industry Group Co. Ltd.	Yunan, Kunming	2	
Do.	Yunxi Group Yuanjiang Nickel Industry Co. Ltd.	Yunnan, Yuxi	5	
Smelter, nickel pig iron	Baosteel Desheng Stainless Steel Co. Ltd. (Baowu Group)	Fujian, Fuzhou, Luoyuan	15	
Do.	Fujian Dingxin Nickel Industry Co. Ltd.	Fujian, Fu'an	40	
Do.	Guangdong Century Nickel Co. Ltd.	Guangdong, Yangjiang	20	
Do.	Guangdong Guangxin Suntec Metal Holdings Co. Ltd.	do.	20	
Do.	Guangxi Chengde Group Co. Ltd.	Guangxi, Beihai	30	
Do.	Henan Jinhui Stainless Steel Co. Ltd.	Henan, Chengde	10	
Do.	Inner Mongolia Heyi Nickel Materials Co. Ltd.	Nei Mongol, Tongliao, Naiman	20	
Do.	Inner Mongolia Huade Wuzhou Steel Co. Ltd.	Nei Mongol, Wulanchabu, Huade	11	
Do.	Inner Mongolia Jinma Group Corp.	Nei Mongol, Hohhot, Xincheng	8	
Do.	Inner Mongolia Shuofeng Industry Co. Ltd.	Nei Mongol, Fengzhen, Fuhua	11	
Do.	Inner Mongolia Xinyang Metallurgy Chemical Co. Ltd.	Nei Mongol, Ulanqab, Tugui	6	
Do.	Jiangsu Delong Nickel Industry Co. Ltd.	Jiangsu, Yangcheng, Xiangshui	100	
Do.	Liaoning Guorun Metal Group Co. Ltd.	Liaoning, Yingkou, Shagang	13	
Do.	Liaoning Shengyun Industry Development Co. Ltd.	Liaoning, Yingkou, Dashiqiao	11	
Do.	Liaoning Treasure Platinum Technology Co. Ltd.	Liaoning, Liaoyang, Luerbao	13	
Do.	Ningfen Group	Liaoning, Yingkou, Dashiqiao	12	
Do.	Shandong Xinhai Technology Co. Ltd.	Shandong, Linyi	120	
Do.	Suqian Xiangxiang Industrial Co. Ltd. (Lygend Group)	Jiangsu, Suqian	18	
Do.	Yangjiang Yichuan Metal Science and Technology Co. Ltd.	Guangdong, Yangjiang, Gangkou	12	
Do.	Yangzhou Yichuan Nickel Industry Co. Ltd.	Jiangsu, Yangzhou, Lidian	10	
Do.	Zhanhua Weiye Nickel Industrial Co. Ltd.	Shandong, Binzhou, Zhanhua	27	
Refined:				
Primary	Chengdu Electrometallurgical Co. Ltd.	Sichuan, Chengdu	5	
Do.	China Metallurgical Ramu New Energy Technology Co. Ltd.	Hebei, Tangshan, Caofeidian	9	
Do.	Guangdong Century Qingshan Nickel Industry Co. Ltd.	Guangdong, Yangjiang	50	
Do.	Guangxi Yinyi Advanced Material Co. Ltd.	Guangxi, Yulin, Longtan	10	
Do.	Jiangxi Jiangli Science and Technology Co. Ltd.	Jiangxi, Fenyi	50	
Do.	Jilin Jien Nickel Industry Co. Ltd. (Jilin Zhongze Haorong Group Co. Ltd.)	Jilin, Panshi	10	
Do.	Jinchuan Nonferrous Metals Co. Ltd.	Gansu, Jinchang, Jinchuan	150	
Do.	Tianjiang Maolian Technology Co. Ltd.	Guangxi, Bohai, Longtan	7	
Do.	Vale New Nickel Materials (Dalian) Co. Ltd. (Vale S.A.)	Liaoning, Dalian	30	
Do.	Xinjiang Xinxin Mining Industry Co. Ltd.	Xinjiang Uyghur, Fukang, Fuyun	13	
Do.	Yuanjiang Nickel Industry Co. Ltd.	Yunnan, Yuxi	5	
Secondary	Chizhou CN New Materials Technology Co. Ltd.	Anhui, Chizhou	5	
Do.	GEM Cobalt Industry Co. Ltd.	Hubei, Jingman	44	
Do.	Hunan Brupn Recycling Technology Co. Ltd.	Hunan, Changsha, Jinzhou	11	
Niobium and tantalum, concentrate, gross weight	metric tons	Jiangxi Jiangte Mining Development Co. Ltd.	Jiangxi, Yichun	35
Do.	do.	Jiangxi Jinhui Renewable Resources Co. Ltd.	do.	20
Do.	do.	Jiangxi Tungsten Industry Group Co. Ltd. (China Minmetals Corp.)	do.	500
Palladium, mine, Pd content	kilograms	Danba County Yangliuping Mining Co. Ltd.	Sichuan, Yangliuping	130
Do.	do.	Jinchuan Group Co. Ltd.	Gansu, Jinchang	1,170
Petroleum:				
Crude	thousand 42-gallon barrels	China National Offshore Oil Corp. (CNOOC): Bohai Offshore Oil Corp.	Locations: Bohai, offshore	29,300
Do.	do.	Nanhai East Corp.	South China Sea, offshore	36,700

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Petroleum:—Continued				
Crude—Continued	thousand 42-gallon barrels	China National Petroleum Corp. (CNPC): Daqing Petroleum Administration Bureau Co. Ltd.	Locations: Heilongjiang, Daqing	403,000
Do.	do.	Liaohe Petroleum Administration Bureau Co. Ltd.	Liaoning, Liaohe	110,000
Do.	do.	Shengli Petroleum Administration Co. Ltd. [China Petroleum & Chemical Corp. (Sinopec Corp.)]	Hebei, Shengli	251,000
Refinery	million 42-gallon barrels	China National Offshore Oil Corp. (CNOOC)	Plants in multiple Provinces	480
Do.	do.	China National Petroleum Corp. (CNPC)	do.	1,500
Do.	do.	China Petroleum & Chemical Corp. (Sinopec Corp.)	do.	2,200
Do.	do.	Hengli Petrochemical Co. Ltd.	Liaoning, Dalian	155
Do.	do.	Zhejiang Petrochemical Co. Ltd.	Zhejiang, Zhoushan	155
Do.	do.	Other refinery facilities	Plants in multiple Provinces	2,300
Phosphate rock		Deyang Haohua Qingping Phosphate Co. Ltd.	Sichuan, Deyang	1,000
Do.		Guizhou Kailin (Group) Co. Ltd.	Guizhou, Guiyang	10,000
Do.		Guzhou Wengfu (Group) Co. Ltd.	do.	8,500
Do.		Sichuan Jinhe Phosphorus Mining Co. Ltd.	Sichuan, Shifang	1,000
Do.		Yunnan Phosphate Chemical Group Co. Ltd.	Yunnan, Kunming	11,500
Do.		Yunnan Tanning Mining Co. Ltd.	Yunnan, Anning	12,000
Platinum, mine, Pt content	kilograms	Danba County Yangliuping Mining Co. Ltd.	Sichuan, Yangliuping	300
Do.	do.	Jinchuan Group Co. Ltd.	Gansu, Jinchang	2,700
Potash		Qinghai Salt Lake Industry Group Co. Ltd.	Qinghai, Charhan	5,000
Do.		SDIC Xinjiang Lop Nur Potash Salt Co. Ltd.	Xinjiang Uyghur, Ruoqiang	1,200
Rare earths:				
Mine, rare-earth- oxide equivalent	metric tons	China Northern Rare Earth (Group) High-Tech Co. Ltd. [Baotou Iron and Steel (Group) Co. Ltd.]	Bayan Obo Mine, Nei Mongol, Baotou	142,000
Do.		China Rare Earth Group Co. Ltd. (State-owned Assets Supervision Administration Commission of the State Council, 31.2%; China Rare Earth Resources and Technology Co. Ltd., 20.3%; China Southern Rare Earth Group Co. Ltd., 20.3%; Chinalco Rare Earth and Metals Co. Ltd., 20.3%; and others, 7.8%), including:	Ganzhou, Jiangxi	NA
Do.	metric tons	Chinalco Rare Earth and Metals Co. Ltd.: Mianning Mianly Rare Earth Mining Co. Ltd.	Sichuan, Liangshan, Mianning	300
Do.	do.	Shandong Weishanhu Rare Earth Co. Ltd.	Shandong, Weishan	6,600
Do.	do.	Xichang He Geo Mining Development Co. Ltd.	Sichuan, Liangshan, Dechang	5,400
Do.	do.	Xichang Zhineng Industry Co. Ltd.	do.	500
Do.	do.	China Rare Earth Resources and Technology Co. Ltd.	Jiangxi, Ganzhou	2,000
Do.	do.	China Southern Rare Earth Group Co. Ltd.: China Iron and Steel Research Institute Group Co. Ltd.	NA	4,300
Do.	do.	Ganzhou Rare Earth Mining Co. Ltd.	Jiangxi, Ganzhou	8,500
Do.	do.	Mianning Wankaifeng Rare Earth Mining Co. Ltd.	Sichuan, Liangshan, Mianning	600
Do.	do.	Sichuan JCC Rare Earth Co. Ltd.	Sichuan, Mianning	29,000
Do.	do.	Longyan Rare Earth Development Co. Ltd. (Xiamen Tungsten Industry Co. Ltd.)	Fujian, Longyan, Xinluo	3,400
Do.	do.	Pingyuan Huaqi Rare Earth Industry Co. Ltd. (Guangdong Rare Earth Industry Group Co. Ltd.)	Guangdong, Meizhou, Pingyuan	2,700
Smelter, rare-earth oxide equivalent	do.	China Northern Rare Earth (Group) High-Tech Co. Ltd. [Baotou Iron and Steel (Group) Co. Ltd.]	Nei Mongol, Baotou	129,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^c
Rare earths:—Continued				
Smelter, rare earth oxide equivalent—Continued		China Rare Earth Group Co. Ltd. (State-owned Assets Supervision Administration Commission of the State Council, 31.2%; China Rare Earth Resources and Technology Co. Ltd., 20.3%; China Southern Rare Earth Group Co. Ltd., 20.3%; Chinalco Rare Earth and Metals Co. Ltd., 20.3%; and others, 7.8%), including:	Ganzhou, Jiangxi	NA
Do.	metric tons	Chinalco Rare Earth and Metals Co. Ltd., of which: China Iron and Steel Research Institute Group Co. Ltd. Hunan Rare Earth Metal Material Research Institute Co. Ltd. Shandong Zhongkai Rare Earth Materials Co. Ltd. Zibo Jiahua New Material Resources Co. Ltd.	Locations: Beijing Hunan, Changsha, Zhanggongling Shandong, Zibo Shandong, Zibo, Linzi	23,900
Do.	do.	China Rare Earth Resources and Technology Co. Ltd., of which: Dingnan Dahua New Material Resources Co. Ltd. Guangzhou Jianfeng Minmetals Rare Earth Co. Ltd. Minmetals Rare Earth Jianghua Co.	Locations: Jiangxi, Ganzhou, Dingnan Guangdong, Conghua, Aotou Hunan, Yongzhou, Jianghua	5,700
Do.	do.	Ganzhou Rare Earth (Longnan) Nonferrous Metals Co. Ltd. [China Southern Rare Earth Group Co. Ltd.]	Jiangxi, Ganzhou	28,300
Do.	do.	Fujian Changting Jinlong Rare Earth Co. Ltd. (Xiamen Tungsten Industry Co. Ltd.)	Fujian, Longyan, Changting	4,000
Do.	do.	Guangdong Rare Earth Industry Group Co. Ltd.: China Nonferrous Metal Industry's Foreign Engineering and Construction Co. Ltd. (NFC)	Guangdong, Guangzhou	3,600
Do.	do.	Guangdong Fuyuan Rare Earth New Material Co. Ltd.	Guangdong, Meizhou, Pingyuan	7,000
Rhenium, rhenate	kilograms	China Molybdenum Co. Ltd.	Henan, Luanchuan	200
Do.	do.	Jiangxi Copper Co. Ltd.	Jiangxi, Guixi	3,000
Do.	do.	Jinduicheng Molybdenum Industry Group Co. Ltd.	Shaanxi, Huaxian	1,000
Do.	do.	Ligeance Aerospace Technology Co. Ltd.	Shaanxi, Xianyang	NA
Do.	do.	Western Xinxing Metal Materials Co. Ltd.	Shaanxi, Luonan	200
Salt		Hebei Changzhou Salt Chemical Co. Ltd.	Hebei, Changzhou	1,400
Do.		Jiangsu Suyan Jingshen Co. Ltd.	Jiangsu, Huai'an	9,000
Do.		Jiangxi Jinghao Salt Chemical Co. Ltd.	Jiangxi, Zhangshu	1,200
Do.		Laizhou Chengyuan Salt Chemical Co. Ltd.	Shandong, Laizhou	2,000
Do.		Lianyungang City Industrial Investment Group Co. Ltd.	Jiangsu, Lianyungang	700
Do.		Shandong Dadi Salt Chemical Group Co. Ltd.	Shandong, Weifang	800
Do.		Shandong Haihua Group Co. Ltd.	do.	1,400
Do.		Sichuan Jiuda Salt Manufacturing Co. Ltd.	Sichuan, Zigong	4,000
Do.		Sichuan Zigong Chiyu Salt Products Co. Ltd.	do.	300
Do.		Tianjin Changlu Hangu Saltworks Co. Ltd.	Tianjin	3,000
Do.		Zhongyan Dongxing Salt Chemical Co. Ltd.	Anhui, Dingyuan	1,500
Sand and gravel, for construction		Anhui Conch Cement Co. Ltd.	Anhui, Wuhu	56,000
Do.		Beijing BBMG Group Co. Ltd.	Beijing	38,000
Do.		China Building Materials Group Co. Ltd.	do.	60,000
Do.		China Power Construction Anhui Changjiu New Materials Co. Ltd.	Anhui, Chizhou	70,000
Do.		China Resources Cement Holdings Ltd.	Southern China	20,000
Do.		Huaxin Cement Co. Ltd.	Hebei, Huangshi	39,000
Do.		Richangsheng Group Co. Ltd.	Zhejiang, Hangzhou	30,000
Do.		Zhejiang Transportation Investment Group Co. Ltd.	do.	24,000
Do.		Zhoushan Jinxin Mining Investment Co. Ltd.	Zhejiang, Zhoushan	20,000
Do.		Zhoushan Seaport Development Co. Ltd.	do.	22,000
Scandium, scandium oxide		Hunan Oriental Scandium Co. Ltd. (LB Group)	Hunan, Changsha	10
Selenium:				
Primary	metric tons	Jiangxi Copper Co. Ltd.	Jiangxi, Guixi	300
Do.	do.	Jinchuan Group Co. Ltd.	Gansu, Jinchang	50
Secondary	do.	Vital Materials Co. Ltd. (Guangdong Xiandao Co. Ltd.)	Guangdong, Qingyuan	1,000

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ^e
Silica (quartz)	Jiangsu Pacific Quartz Co. Ltd.	Jiangsu, Lianyungang, Donghai	20
Do.	Gansu Sanyuan Silicon Materials Co. Ltd.	Ningxia, Nei Mongol, and Gansu	100
Silicon, metal	Aba Xilong Industrial Silicon Co. Ltd. (Zhejiang Xinan Chemical Group Co. Ltd.)	Sichuan, Wenchuan	25
Do.	Beijing Dadi Zelin Silicon Co. Ltd.	Beijing	20
Do.	Blue Star Silicon Materials Co. Ltd. [China National Chemical Corp. Ltd. (ChemChina), 79.5%]	Gansu, Lanzhou, Zhongbao	80
Do.	Changji Jisheng New Building Materials Co. Ltd. (Xinjiang East Hope Group)	Xinjiang Uyghur, Changji	370
Do.	Gansu Lanxing Silicon Materials Co. Ltd.	Gansu, Lanzhou	50
Do.	Inner Mongolia Erdos Power and Metallurgy Group Co. Ltd.	Nei Mongol, Erdos, Qipanjing	800
Do.	Inner Mongolia Xinyuan Silicon Material Technology Co.	Nei Mongol, Baotou	150
Do.	Sichuan Jingyuan Silicon Industry Co. Ltd. (Sichuan Leshan Xinhe Electric Power Comprehensive Development Co. Ltd.)	Sichuan, Leshan, Jinkouhe	35
Do.	Sichuan Maoxian Pandal Silicon Industry Co. Ltd.	Sichuan, Aba, Maoxian	60
Do.	Xinjiang China Silicon Technology Co. Ltd.	Xinjiang Uyghur, Yili	46
Do.	Xinjiang GCL Silicon Technology Co.	Xinjiang Uyghur, Changji	100
Do.	Xinjiang Guopeng Technology Co. Ltd.	Xinjiang Uyghur, Yili	NA
Do.	Xinjiang Hoshine Silicon Industry Co. Ltd., including: Hoshine Jinsong Silicon Industry Co. Ltd. Xinjiang Eastern Hoshine Silicon Industry Co. Ltd. Xinjiang Western Hoshine Silicon Industry Co. Ltd.	Locations: Xinjiang Uyghur, Karamay Xinjiang Uyghur, Turpan, Shanshan Xinjiang Uyghur, Shihezi	2,100
Do.	Xinjiang Jiagesen New Energy Materials Co. Ltd.	Xinjiang Uyghur, Yili	30
Do.	Xinjiang Jierong Silicon Industry Co. Ltd.	Xinjiang Uyghur, Shihezi	25
Do.	Xinjiang Jingheyuan New Materials Co. Ltd.	Xinjiang Uyghur, Hami	60
Do.	Xinjiang Jingweike New Energy Development Co. Ltd.	Xinjiang Uyghur, Yili, Gongliu	50
Do.	Xinjiang Jingxin Silicon Industry Co. Ltd.	Xinjiang Uyghur, Changji, Manas	100
Do.	Xinjiang Sokesi New Material Co. Ltd.	Xinjiang Uyghur, Changji	NA
Do.	Xinjiang Xintao Silicon Industry Co. Ltd.	Xinjiang Uyghur, Hami	50
Do.	Xinjiang Yugui Technology Co. Ltd.	Xinjiang Uyghur, Yili	15
Do.	Xinjiang Yusi Technology Co. Ltd.	do.	31
Do.	Yili Jingjing Silicon Industry Co. Ltd.	Xinjiang Uyghur, Yining	16
Do.	Yunnan Lushui Jinzhi Silicon Co. Ltd.	Yunnan, Lushui	60
Do.	Yunnan Lushui Kanghua Silicon Industry Co. Ltd.	do.	40
Do.	Yunnan Yongchang Silicon Industry Co. Ltd. (Yunnan Metallurgical Group Co. Ltd.)	Yunnan, Baoshan, Longling	100
Do.	Zhejiang Zhongcheng Silicon Co. Ltd.	Yunnan, Yingjiang	50
Silver:			
Mine, Ag content	metric tons	Baojin Mining Group Co. Ltd.	Nei Mongol, Hulubuir, Ergun
Do.	do.	Bay Area Gold Group Ltd.	Henan, Luoyang, Luoanchuang
Do.	do.	Chifeng Dajingzi Mining Co. Ltd.	Nei Mongol, Chifeng, Linxi
Do.	do.	China Daye Non-Ferrous Metals Mining Ltd.	Xinjiang Uyghur, Wuqia
Do.	do.	China Gold International Resources Corp.	Xizang, Lhasa, Maizhokunggar
Do.	do.	Government of Gansu, 69.37%, and China Nonferrous Metal Mining (Group) Co. Ltd., 30.53%	Nei Mongol, Chifeng, Bairin
Do.	do.	Griffin Mining Ltd., 88.8%, and Zhangjiakou Caijiaying Lead Zinc Mining Co. Ltd., 11.2%	Hebei, Zhangjiakou, Zhangbei
Do.	do.	Guocheng Mining Co. Ltd.	Nei Mongol, Chifeng, Bairin
Do.	do.	do.	42
Do.	do.	Inner Mongolia Xingye Group Co.	Nei Mongol, Xilingol, Sonid
Do.	do.	Jiangxi Copper Co. Ltd.	Nei Mongol, Xilingol
Do.	do.	Jianxin Group	Jiangxi, Guixi
Do.	do.	do.	Nei Mongol, Chifeng, Bairin
Do.	do.	do.	Nei Mongol, Xilingol, Sonid

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2, 3}	Annual capacity ^c
Silver:—Continued				
Mine, Ag content	metric tons	Jinchuan Group Co. Ltd., 55%, and Zijin Mining Group Co. Ltd., 45%	Xizang, Shigatse, Xietongment	13
—Continued				
Do.	do.	Jinhui Mining Co. Ltd.	Gansu, Baiyin, Huining	21
Do.	do.	Nanjing Yinmao Lead-Zinc Mine Co. Ltd.	Jiangsu, Nanjing, Qixia	12
Do.	do.	Shandong Gold Mining Co. Ltd.	Shandong, Jinan	20
Do.	do.	Shandong Gold Nonferrous Mining Group Co. Ltd.	Nei Mongol, Chifeng, Ujimqin	18
Do.	do.	Shanxi Diaoquan Silver & Copper Mining Co. Ltd., 54%, and Jiangxi Copper Co. Ltd., 46%	Shanxi, Datong, Lingqiu	20
Do.	do.	Shengda Resources Co. Ltd.	Nei Mongol, Chifeng, Hexigten	73
Do.	do.	Shezhen Zhongjin Lingnan Nonfemet. Co. Ltd.	Guangdong, Shaoguan, Renhua	41
Do.	do.	Silvercorp Metals Inc.	Guangdong, Yunfu, Yun'an	21
Do.	do.	Silvercorp Metals Inc., 80%, and Henan Xinhui Mining Co. Ltd., 20%	Henan, Luoyang, Luoning	163
Do.	do.	Silver Metals Inc., 77.5%, and Henan Non-ferrous Geology Bureaus, 22.5%	Henan, Luoyang, Luoning	240
Do.	do.	Tibet Baoxiang Mines Ltd.	Xizang, Shigatse, Samzhubze	10
Do.	do.	Tibet Huaxia Mineral Co. Ltd.	Xizang, Nagqu, Lhari	18
Do.	do.	Tibet Huayu Mining Co. Ltd.	Xizang, Lhasa	58
Do.	do.	Tibet Zhongkai Mining Industry Co. Ltd.	Xizang, Lhasa, Lhunzhub	11
Do.	do.	Tongling Chemical Industry Group Co. Ltd.	Anhui, Tongling, Tongguan	24
Do.	do.	Tongling Nonferrous Metal Group	Anhui, Tongling	11
Do.	do.	Wancheng Commercial Dongshengmiao Co. Ltd.	Nei Mongol, Bayannur, Urad	12
Do.	do.	Western Region Gold Co. Ltd.	Sichuan, Liangshan, Huidong	20
Do.	do.	do.	Sichuan, Garze, Baiyu	124
Do.	do.	Xingye Mining Co. Ltd. (Inner Mongolia Xingye Group Co. Ltd.)	Nei Mongol, Xilingol, West Ujimqin	437
Do.	do.	Yintai Gold Group Co. Ltd.	Xizang, Chamdo, Jomda	150
Do.	do.	Yunnan Copper Co. Ltd.	Yunnan, Diqing, Deqen	10
Do.	do.	Yuxi Resources Corp.	Yunnan, Puer, Simao	11
Do.	do.	Zhongjin Gold Corp.	Nei Mongol, Hulunbuir	46
Do.	do.	Zijin Mining Group Co. Ltd.	Fujian, Shanghang	280
Metal	do.	Chenzhou Jingui Silver Industry Co. Ltd.	Hunan, Chenzhou, Suxian	550
Do.	do.	Daye Nonferrous Metals Group Holding Co. Ltd. [China Nonferrous Metal Mining (Group) Co. Ltd., 58%]	Hubei, Huangshi, Xialu	300
Do.	do.	Great Wall Gold Silver Refinery (China Banknote Printing and Minting Corp.)	Sichuan, Chengdu, Qingyang	230
Do.	do.	Henan Jinli Gold and Lead Group Co. Ltd.	Henan, Jiyuan, Tiantan	2,000
Do.	do.	Henan Jinli Smelting Co. Ltd.	Henan, Jiyuan, Chengliu	800
Do.	do.	Henan Yuguang Gold & Lead Co. Ltd.	do.	1,000
Do.	do.	Henan Zhongyuan Gold Smelter LLC (Zhongjin Gold Corp. Ltd.)	Henan, Sanmenxia, Hubin	350
Do.	do.	Huludao Nonferrous Metals Group Co. Ltd.	Liaoning, Huludao, Longgang	80
Do.	do.	Hunan Yuteng Nonferrous Metals Co. Ltd.	Hunan, Chenzhou, Beihu	500
Do.	do.	Jiangxi Copper Co. Ltd.	Jiangxi, Yingtan, Guixi	330
Do.	do.	Jinchuan refinery (Jinchuan Group Co. Ltd.)	Gansu, Jinchang, Jinchuan	600
Do.	do.	Jiquan Wanyang Smelting (Group) Co. Ltd.	Henan, Jinyuan, Sili	1,600
Do.	do.	Shandong Zhaojin Gold and Silver Refinery Co. Ltd.	Shandong, Yantai, Zhaoyuan	1,000
Do.	do.	Tongling Nonferrous Metals Group Co. Ltd.	Anhui, Bengbu, Huayuan	510
Do.	do.	Yanggu Xiangguang Copper Co. Ltd. (Shandong Fengxiang Group Co. Ltd.)	Shandong, Liaocheng, Yanggu	600
Do.	do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing, Qilin	150
Do.	do.	Zijin Copper Co. Ltd.	Fujian, Longyan, Shanghang	125
Do.	do.	Zijin Mining Group Gold Smelting Co. Ltd.	Fujian, Longyan, Xinluo	300

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴
Strontium, carbonate	Chongqing Chonglong Strontium Co. Ltd.	Chongqing	20
Do.	Chongqing Tongliang Red Butterfly Strontium Co.	do.	40
Do.	Hebei Xinji Chemical Group	Hebei, Xinji	2
Do.	Nanjing Jinyan Strontium Co. Ltd.	Jiangsu, Lishui	2
Do.	Shijiazhuang Zhengding Xian Jinshi Chemical Co. Ltd.	Hebei, Shijiazhuang	3
Do.	Wutai Yunhai Magnesium Co. Ltd.	Shanxi, Wutai	3
Talc	China National Nonmetallic Industry Corp.	Guangxi, Longshen	130
Do.	do.	Liaoning, Haicheng	50
Tantalum, products	metric tons Changsha Nanfang Tantalum and Niobium Co. Ltd.	Hunan, Changsha	NA
Do.	do. Duoluoshan Sapphire Rare Metal Co. Ltd.	Guangdong, Zhaoqing	NA
Do.	do. F&X Electro-Materials Ltd. (Uniton Industries Ltd.)	Guangdong, Jiangmen, Xinhui	NA
Do.	do. FIR Metals & Resource Ltd.	Hunan, Zhuzhou	NA
Do.	do. Hengyang King Xing Lifeng New Materials Co. Ltd.	Hunan, Hengyang	NA
Do.	do. Jiangsu Meterinco Special Alloy Co. Ltd.	Jiangsu, Nanjing, Jiangning	NA
Do.	do. Jiangxi Dinghai Tantalum & Niobium Co. Ltd.	Jiangxi, Fengxin	NA
Do.	do. Jiangxi King-Tan Tantalum Industry Co. Ltd.	Jiangxi, Fengcheng	500
Do.	do. Jiangxi Tuohong New Material Co. Ltd.	Jiangxi, Yichun	NA
Do.	do. Jiujiang Janny New Material Co. Ltd.	Jiangxi, Jiujiang	NA
Do.	do. Jiujiang Jinxin Nonferrous Metals Co. Ltd.	do.	NA
Do.	do. Jiujiang Tanbre Co. Ltd. [Jiangxi Tungsten Industry Group Co. Ltd. (China Minmetals Corp.)]	do.	250
Do.	do. Jiujiang Zhongao Tantalum & Niobium Co. Ltd. (joint venture between Jiangxi Jiujiang Yizhong Nonferrous Metals Co. Ltd. and others)	do.	NA
Do.	do. Metalink International Co. Ltd. (affiliates: Nanjing Metalink International Co. Ltd., and Metalink Special Alloys Corp.)	Jiangsu, Nanjing	NA
Do.	do. Ningxia Orient Tantalum Industry Co. Ltd. (OTIC)	Ningxia, Shizuishan	NA
Do.	do. Taike Technology (Suzhou) Co. Ltd.	Jiangsu, Suzhou	NA
Do.	do. Ximei Resources (Guangdong) Ltd. (Ximei Resources Holding Ltd.)	Guangdong, Yingde	NA
Do.	do. Xinxing Haorong Electronic Material Co. Ltd.	Guangdong, Yunfu, Xinxing	NA
Do.	do. Yanling Jincheng Tantalum & Niobium Co. Ltd.	Hunan, Zhuzhou, Yanling	NA
Tellurium, refined:			
Primary	do. Jiangxi Copper Co. Ltd.	Jiangxi, Guixi	70
Secondary	do. Hunan Jinrun Tellurium Industry Co. Ltd.	Hunan, Chenzhou	200
Do.	do. Vital Materials Co. Ltd. (Guangdong Xiandao Co. Ltd.)	Guangdong, Qingyuan	280
Tin:			
Mine, Sn content	Guangxi Pinggui PGMA Co. Ltd.	Guangxi, Hezhou	4
Do.	Guanxi Huaxi Group Co. Ltd.	Guangxi, Hechi, Nandan	NA
Do.	Inner Mongolia Xingye Mining Co. Ltd. (Xiwuzhumuqin Yinman Mining Co. Ltd.)	Nei Mongol, Xilingol	8
Do.	Liuzhou Huaxi Group Co.	Guangxi, Laibin	11
Do.	Southern Mining Co. Ltd.	Hunan, Chenzhou	3
Do.	Yunnan Hualian Zinc Indium Co. Ltd.	Yunnan, Maguan	NA
Do.	Yunnan Tin Industry Group Co. Ltd.	Yunnan, Gejiu	33
Smelter	Chenzhou Yunxiang Mining and Metallurgy Co. Ltd. (Yunnan Tin Industry Group Co. Ltd.)	Hunan, Chenzhou	20
Do.	Chifeng Dajingzi Tin Industry Co. Ltd.	Nei Mongol, Chifeng	NA
Do.	China Nonferrous Metals Group (Guangxi) Pinggui UFO Co. Ltd. [China Nonferrous Metal Mining (Group) Co. Ltd.]	Guangxi, Hezhou, Pinggui	8
Do.	China Tin Smelter Co. Ltd.	Guangxi, Laibin	25
Do.	Gejiu Fengming Metallurgy Chemical Plant	Yunnan, Gejiu	NA
Do.	Gejiu Jinye Renewable Technology Co. Ltd.	do.	3
Do.	Gejiu Kai Meng Industry and Trade LLC	do.	8
Do.	Gejiu Nonferrous Metal Processing Co. Ltd.	do.	NA
Do.	Gejiu Yunxin Nonferrous Electrolysis Co. Ltd.	do.	NA

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴
Tin:—Continued			
Smelter—Continued	Gejiu Zili Mining and Smelting Co.	Yunnan, Huogudu	20
Do.	Guangdong Hanhe Non-Ferrous Metal Co. Ltd.	Guangdong, Chaozhou	NA
Do.	Guangxi Huaxi Nonferrous Metals Co. Ltd.	Guangxi, Laibin	25
Do.	Guanyang Guida Nonferrous Metal Smelting Plant	Guangxi, Guanyang	NA
Do.	Huichang Hill Tin Industry Co. Ltd.	Jiangxi, Ganzhou	NA
Do.	Jiangxi New Nanshan Technology Co. Ltd.	Guangdong, Chaozhou	NA
Do.	Ma'anshan Weitai Tin Co. Ltd.	Anhui, Maanshan	NA
Do.	Nanshan Tin Co. Ltd.	Jiangxi, Ganzhou	10
Do.	Yunnan Chengfeng Nonferrous Metals Co. Ltd.	Yunnan, Gejiu	20
Do.	Yunnan Tin Industry Group Co. Ltd.	do.	80
Do.	Yunnan Yunfan Nonferrous Metals Co. Ltd.	do.	4
Titanium:			
Mine, concentrate	Pangang Group Vanadium and Titanium Resources Co. Ltd. (Ansteel Group Corp. Ltd.)	Sichuan, Panzhihua	1,000
Do.	Panzhihua Longmang Mineral Products Co. Ltd. (LB Group Co. Ltd.)	Sichuan, Panzhihua, Yanbian	950
Do.	do.	Yunnan, Chuxiong, Wuding	40
Do.	Sichuan Anning Iron and Titanium Co. Ltd.	Sichuan, Panzhihua, Miyi	540
Do.	Xichang Mining Co. (Chongqing Iron and Steel Co. Ltd.)	Sichuan, Chongqing, Xichang	600
Sponge	Anshan Hailiang Nonferrous Metals Material Manufacturing Co. Ltd.	Liaoning, Anshan, Tai'an	8
Do.	Baoji Lixing Titanium Industry Co. Ltd.	Shaanxi, Baoji, Weibin	3
Do.	Baoti Huashen Titanium Industry Co. Ltd. [Baoji Titanium Industry Co. Ltd. (Baoti Group Co. Ltd.), 66.67%]	Liaoning, Jinzhou, Taihe	10
Do.	Chaoyang Baisheng Titanium Co. Ltd.	Liaoning, Chaoyang	15
Do.	Chaoyang Jinda Titanium Co. Ltd.	do.	16
Do.	CITIC Jinzhou Metal Co. Ltd.	Liaoning, Jinzhou, Taihe	2
Do.	Jinchuan Group Co. Ltd. (LB Group Co. Ltd.)	Gansu, Jinchang, Jinchuan	15
Do.	Longbai Lufeng Titanium Industry Co. Ltd. (operator, Yunnan Metallurgical Xinli Titanium Co. Ltd., and owner, LB Group)	Yunnan, Chuxiong, Lufeng	10
Do.	Luoyang Sunrui Wanji Titanium Industry Co. Ltd.	Henan, Luoyang, Xin'an	16
Do.	Ningbo Chuangrun New Materials Co. Ltd.	Zhejiang, Ningbo, Linshan	1
Do.	Panzhihua Iron and Steel Group Co. Ltd. (Pangang)	Sichuan, Panzhihua	23
Do.	Sichuan Shengfeng Titanium Industry Co. Ltd.	Sichuan, Meishan, Hongya	5
Do.	Xinjiang Xianrun New Material Technology Co. Ltd. (Wujo Group)	Xinjiang Uyghur, Hami	15
Do.	Zunbao Titanium Co. Ltd.	Guizhou, Tongzi	10
Do.	Zunyi Titanium Industry Co. Ltd.	Guizhou, Zunyi, Zhoushuiqiao	15
Tungsten:			
Mine, WO ₃ in concentrate	China Molybdenum Co. Ltd.	Henan, Luanchuan, Lengshui	8
Do.	China Tungsten High-Tech Materials Co. Ltd. (China Minmetals Corp., 100%)	Jiangxi, Jiujiang, Xiushui	4
Do.	do.	Hunan, Chenzhou, Beihu	1
Do.	Chongyi Zhangyuan Tungsten Co. Ltd.	Jiangxi, Ganzhou, Chongyi	1
Do.	Hunan Chenzhou Mining Co. Ltd. (Hunan Gold Co. Ltd.)	Hunan, Huaihua, Yuanling	2
Do.	Hunan Yaogangxian Mining Co. Ltd.	Hunan, Yizhang	3
Do.	Jiangxi Rare Earth and Rare Metals Tungsten Group Corp.	Jiangxi, Ganzhou	7
Do.	Jiangxi Tungsten and Rare Earth Co. Ltd.	do.	15
Do.	Jiangxi Tungsten Industry Holding Group Co. Ltd., including: Jiangxi Dajishan Tungsten Co. Ltd.	Locations: Jiangxi, Quannan, Dajishan	2
Do.	Jiangxi Dangping Tungsten Industry Co. Ltd.	Jiangxi, Ganzhou, Yudu, Fujian	9
Do.	Jiangxi Pangushan Tungsten Co. Ltd.	Jiangxi, Ganzhou, Yudu, Jingshi	1
Do.	Jiangxi Piaotang Tungsten Co. Ltd.	Jiangxi, Ganzhou, Dayu	1
Do.	Jiangxi Tieshanlong Tungsten Co. Ltd.	Jiangxi, Ganzhou, Yudu, Tieshanglor	1
Do.	Jiangxi Xiaolong Tungsten Co. Ltd.	Jiangxi, Ji'an, Taihe	7

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2, 3}	Annual capacity ^e
Tungsten:—Continued			
Mine, WO ₃ in concentrate—Continued	Ninghua Xingluokeng Tungsten Mine Co. Ltd. (Xiamen Tungsten Industry Co. Ltd.)	Fujian, Sanming, Ninghua	5
Do.	Shizhuyuan Nonferrous Metals Co. Ltd. (China Tungsten High-Tech and Materials Co. Ltd.)	Hunan, Chenzhou, Suxian	5
Do.	Wenshan Malipo Zijin Tungsten Co. Ltd. (Zijin Mining Group Co. Ltd.)	Yunnan, Wenshan, Malipo	2
Products	Bingkun Tungsten Co. Ltd.	Jiangxi, Jiujiang	NA
Do.	Chaling Dadi Tungsten Co. Ltd.	Hunan, Zhuzhou	NA
Do.	China Nonferrous Metals Group (Guangxi) Pinggui UFO Co. Ltd.	Guangxi, Hezhou, Zhongshan	5
Do.	China Tungsten High-tech Materials Co. Ltd., Chenzhou Tungsten Branch (China Minmetals Corp.)	Hunan, Chenzhou, Suxian	NA
Do.	Chongyi Zhangyuan Tungsten Co. Ltd.	Jiangxi, Ganzhou, Chongyi	10
Do.	CMOC Tungsten Co. Ltd.	Henan, Luoyang, Luanchuan	10
Do.	Fujian Xinlu Tungsten Industry Co. Ltd. [Xiamen Tungsten Industry Co. Ltd. (XTC), 51%, and Fujian Jinxin Tungsten Industry Co. Ltd., 49%]	Fujian, Longyan, Xinluo, Yanshi	12
Do.	Ganzhou Haichuang Tungsten Co. Ltd.	Jiangxi, Ganzhou, Dayu	5
Do.	Ganzhou Haisheng Tungsten and Molybdenum Co. Ltd.	Jiangxi, Ganzhou	3
Do.	Ganzhou Huaxing Tungsten Products Co. Ltd. [Jiangxi Tungsten Industry Group Co. Ltd. (JWYX)]	do.	NA
Do.	Guangdong Xianglu Tungsten Co. Ltd.	Guangdong, Chaozhou, Xingqiao	5
Do.	Guangxi Pinggui Feidie Co. Ltd. [China Nonferrous Metals (Guangxi) Pinggui Feidie Co. Ltd.]	Guangxi, Hezhou, Zhongshan	5
Do.	H.C. Stark Jiangwu Tungsten Specialties (Ganzhou) Co. Ltd. [Jiangxi Tungsten Industry Holdings Group Co. Ltd. (JXTC), and H.C. Starck GmbH (Masan Group Corp.)]	Jiangxi, Ganzhou, Zhanggong	6
Do.	Huichang Jinshunda Tin Co. Ltd.	Jiangxi, Ganzhou, Huichang	NA
Do.	Huihuang Tungsten and Molybdenum Product Co. Ltd.	Jiangsu, Dongtai	NA
Do.	Hunan Chenzhou Mining Co. Ltd. (Hunan Gold Corp. Ltd.)	Hunan, Huaihua	5
Do.	Hunan Jintai New Material Co. Ltd.	Hunan, Hengyang	8
Do.	Hunan Shizhuyuan Nonferrous Metals Co. Ltd. (Hunan Nonferrous Metals Corp. Ltd.)	Hunan, Chenzhou	20
Do.	Jiangxi Minmetal Gaoan Nonferrous Metals Co. Ltd.	Jiangxi, Gaoan	NA
Do.	Jiangxi Rare Metals Tungsten Holding Group Co. Ltd. (JXHC): Jiangxi Tonggu Non-ferrous Metallurgical & Chemical Co. Ltd.	Locations: Jiangxi, Yichun	NA
Do.	Jiangxi Xinsheng Tungsten Industry Co. Ltd.	Jiangxi, Ganzhou, Dingnan	12
Do.	Jiangxi Xianglu Tungsten Co. Ltd.	Jiangxi, Ganzhou, Dayu	NA
Do.	Jiangxi Yaosheng Tungsten Co. Ltd.	Jiangxi, Ganzhou, Chongyi	9
Do.	Luoyang Yongzhuo Tungsten and Molybdenum Material Co. Ltd.	Henan, Luoyang	1
Do.	Malipo Haiyu Tungsten Co. Ltd. (Xiamen Tungsten Co. Ltd.)	Yunnan, Malipo	NA
Do.	Wendeng Zhengxing Tungsten Industry Co. Ltd.	Shandong, Weihai	NA
Do.	Xiamen Jialu Metal Industry Co. Ltd. [Xiamen Tungsten Co. Ltd. (XTC)]	Fujian, Xiamen, Haicang	NA
Do.	Xiamen Tungsten Industry Co. Ltd., Haicang branch [Xiamen Tungsten Co. Ltd. (XTC)]	Fujian, Xiamen	6
Do.	Zhongxiang Tungsten Co. Ltd.	Hunan, Chenzhou	NA
Uranium, mine, U content	metric tons	China National Nuclear Corp. (CNNC), including: Fuzhou Jin'an Uranium Co. Ltd.	Locations: Jiangxi, Fuzhou
Do.	do.	Ganzhou Jinrui Uranium Co. Ltd.	Jiangxi, Chongyi
Do.	do.	North Uranium Co. Ltd.	Liaoning, Benxi
Do.	do.	do.	Liaoning, Qinglong
Do.	do.	Shaoguan Jinhong Uranium Industry Co. Ltd.	Guangdong, Shaoguan
Do.	do.	Tianshan Uranium Co. Ltd.	Xinjiang Uyghur, Yining
Do.	do.	Xi'an CNNC Lantian Uranium Co. Ltd.	Shaanxi, Lantian

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity		Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2,3}	Annual capacity ⁴
Vanadium, V ₂ O ₅ equivalent	metric tons	Chengde Jianlong Special Steel Co. Ltd.	Hebei, Chengde	6,300
Do.	do.	Chengyu Vanadium and Titanium Technology Co. Ltd.	Sichuan, Chengdu	9,300
Do.	do.	CITIC Jinzhou Metal Co. Ltd.	Liaoning, Jinzhou	12,000
Do.	do.	HBIS Chengde Vanadium Titanium New Material Co.	Hebei, Chengde	22,000
Do.	do.	Heilongjiang Jianlong Vanadium Industry Co. Ltd.	Heilongjiang, Shungyashan	5,600
Do.	do.	Liaoning Hongjing Industrial Co. Ltd.	Liaoning, Huludao, Lianshan	1,800
Do.	do.	Pangang Group Vanadium and Titanium Resources Co. Ltd.	Sichuan, Panzhihua	47,000
Do.	do.	Pangang Group Xichang Steel and Vanadium Co. Ltd.	Sichuan, Xichang, Jingjiu	19,000
Do.	do.	Sichuan Desheng Group Vanadium and Titanium Co. Ltd.	Sichuan, Chengdu, Leshan	6,700
Do.	do.	Sichuan Neijiang Tranvic Special Steel Co. Ltd. (Tranvic Group)	Sichuan, Neijiang	24,000
Vermiculite		Xinjiang Yuli Inlong Vermiculite Co. Ltd.	Xinjiang Uyghur, Korla	120
Wollastonite		Dalian Huanqiu Minerals Co. Ltd.	Liaoning, Huanqiu	NA
Zinc:				
Mine output, Zn content		Baiyin Nonferrous Metal Co.	Gansu, Baiyin	53
Do.	do.		Gansu, Changba	120
Do.		China Gold International Resources Corp. Ltd.	Xizang, Maizhokunggar	34
Do.		China Tin Group Co. Ltd. (Guangxi Huaxi Group Co. Ltd.)	Guangxi, Dachang	50
Do.		Guangdong Dabaoshan Mining Co. Ltd. (Rising Nonferrous Metals Share Co. Ltd., 40%)	Guangdong, Shaoguan	NA
Do.		Guangxi Cenxi Longwan Mining Co. Ltd. (Guangxi Nonferrous Metals Group Co. Ltd.)	Guangxi, Cenxi, Hesan	15
Do.		Guangxi Zhongjin Lingnan Mining Co. Ltd.	Guangxi, Laibin, Wuxuan	NA
Do.		Huidong Daliang Mining Co. Ltd. (Western Mining Group Co. Ltd.)	Sichuan, Huidong	43
Do.		Hunan Baoshan Nonferrous Metals and Mining Co. Ltd.	Hunan, Baoshan	20
Do.		Hunan Shukoushan Nonferrous Metals Group Co. Ltd. (China Minmetal Corp.)	Hunan, Kangjiawan	20
Do.	do.		Hunan, Chaling, Shuikoushan	21
Do.		Inner Mongolia Mining Development	Nei Mongol, Chifeng, Bairendaba	30
Do.		Inner Mongolia Yulong Mining Co. Ltd.	Nei Mongol, Bayanhugogach	NA
Do.		Jiangxi Dean Tianbao Mining Group Co. Ltd.	Jiangxi, De'an, Zhangshiba	30
Do.		Jiangxi Tianyi Mining Co. Ltd.	Jiangxi, Guixi	NA
Do.		Jinhui Mining Co. Ltd.	Gansu, Longnan, Hui	65
Do.		Shenzhen Zhongjin Lingnan Nonferrous Metals Co. Ltd.	Guangdong, Shenzhen	190
Do.		Sichuan Xinyuan Mining Industry Co. Ltd.	Sichuan, Xiacun	40
Do.		Tibet Huaxia Mineral Co. Ltd.	Xizang, Nagqu, Lhari	22
Do.		Tibet Huayu Mining Co. Ltd.	Xizang, Lhasa	20
Do.		Western Mining Co. Ltd.	Qinghai, Xining	70
Do.		Xinjiang Xinxin Mining Industry Co. Ltd.	Xinjiang Uyghur, Fuyun	40
Do.		Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Huize, Rongda	300
Do.		Yunnan Hualian Zinc Indium Co. Ltd.	Yunnan, Maguan	NA
Do.		Yunnan Jinding Zinc Industry Co. Ltd. (Sichuan Hongda Group Co. Ltd.)	Yunnan, Nujiang, Lanping	200
Do.		Zijin Mining Group Co. Ltd.	Nei Mongol, Bayannur	50
Do.	do.		Xinjiang Uyghur, Habahe	12
Do.	do.		Xinjiang Uyghur, Wuqia	140
Refinery:				
Primary		Anhui Tongguan Chizhou Non-ferrous Metals Co. Ltd.	Anhui, Chizhou	150
Do.		Baiyin Nonferrous Metal Group Co. Ltd.	Gansu, Baiyin	250
Do.		Bayannur Zijin Nonferrous Metals Co. Ltd.	Nei Mongol, Bayannur	190
Do.		Chifeng NFC Kumba Hongye Zinc Co. Ltd. (China Nonferrous Metals Mining Group Co. Ltd.)	Nei Mongol, Chifeng	210
Do.		Gansu Baohui Industrial Group Co. Ltd.	Gansu, Liulin	90
Do.		Gansu Changba Nonferrous Metals Co. Ltd.	Gansu, Chengxian	100
Do.		Guangxi China Tin Group Co. Ltd.	Guangxi, Laibin	50
Do.		Guangxi Jinhe Mining Co. Ltd.	Gansu, Huanjiang	60

See footnotes at end of table.

TABLE 2—Continued
CHINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Thousand metric tons unless otherwise specified)

Commodity	Facilities, major operating companies, and major equity owners ¹	Location of main facilities ^{2, 3}	Annual capacity ^c
Zinc:—Continued			
Refinery:—Continued			
Primary—Continued	Guangxi Nandan Nanfang Nonferrous Metal Smelting Co. Ltd.	Guangxi, Hechi	300
Do.	Hanzhong Zinc Industry Co. Ltd. (Youser Group)	Shaanxi, Mainxian	360
Do.	Huludao Zinc Smelting Co. Ltd. (Huludao Nonferrous Metals Group Co. Ltd.)	Liaoning, Huludao	390
Do.	Hulunbuir Chihong Mining Co. Ltd.	Nei Mongol, Hulunbuir	140
Do.	Hunan Shuikoushan Nonferrous Metals Group Co. Ltd.	Hunan, Changning	150
Do.	Jiangxi Copper Corp. Ltd.	Jiangxi, Guixi	200
Do.	Liuzhou Huaxi Group Co.	Yunnan, Laibin	60
Do.	Liuzhou Longcheng Chemical General Plant	Guangxi, Liuzhou	90
Do.	Liuzhou Zhongse Zinc Products Co. Ltd. (China Nonferrous Metals Mining Group Co. Ltd.)	do.	30
Do.	Qinghai Zhufeng Zinc Industry Co. Ltd.	Jiangsu, Nanjing	40
Do.	Shaanxi Dongling (Lead and Zinc) Smelting Co.	Shaanxi, Baoji	250
Do.	Shenzhen Zhongjin Lingnan Nonfemet Co. Ltd.	Guangdong, Shaoguan	100
Do.	Sichuan Hongda Group	Sichuan, Chengdu	100
Do.	Sichuan Huili Lead and Zinc Co. Ltd.	Sichuan, Huili	200
Do.	Sichuan Sihuan Zinc and Germanium Technology Co. Ltd.	Sichuan, Shimian	120
Do.	Western Mining Co. Ltd.	Qinghai, Xining	100
Do.	Xing'an Copper & Zinc Smelting Co. Ltd.	Nei Mongol, Xilinuole	125
Do.	Xinjiang Zijin Nonferrous Metals Co. Ltd. (Zijin Mining Group Co. Ltd.)	Xinjiang Uyghur, Wuqia	100
Do.	Yuguang Gold-Lead Co. Ltd.	Henan, Jiyuan	300
Do.	Yuguang Zinc Industry Co. Ltd.	do.	250
Do.	Yunnan Chihong Zinc and Germanium Co. Ltd.	Yunnan, Qujing	300
Do.	Yunnan Jinding Zinc Industry Co. Ltd. (Sichuan Hongda Group)	Yunnan, Lanping	140
Do.	Yunnan Jingcheng Group Co. Ltd.	Yunnan, Ruili	100
Do.	Yunnan Luoping Zinc and Electricity Co. Ltd.	Yunnan, Xindian	120
Do.	Yunnan Xiangyun Feilong Recycling Technology Co. Ltd.	Yunnan, Xiangyun	180
Do.	Yunnan Yountong Zinc Industry Co. Ltd.	Yunnan, Kunming	110
Do.	Yunnan Wenshan Zinc and Indium Smelting Co. Ltd.	do.	100
Do.	Zhongjin Lingnan Nonferrous Metals Co. Ltd.	Guangdong, Shaoguan	247
Do.	Zhuzhou Smelter Group Co. Ltd.	Hunan, Zhuzhou	560
Secondary	Hanyuan Junlei Technology Co. Ltd.	Sichuan, Hanyuan	100
Do.	Yuanfu Zinc Industry Co. Ltd.	do.	80
Zirconium, zircon	Various private producers	Hainan, Wenchang and Wanning	120

^cEstimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.

¹Most companies are owned by the central Government or a provincial government. Not all facilities are listed because the available information was inadequate to provide a complete list for the mineral commodity or because there were too many facilities to list.

²Listed by Province or autonomous region, followed by locality. Only headquarter locations are provided for some companies that have numerous facilities throughout the country.

³Some locations have different official translations, for example, Nei Mongol is also known as "Inner Mongolia" and Xizang is also known as "Tibet."

TABLE 3
CHINA: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2021 AND 2022

Commodity	2021		2022	
	Quantity (metric tons)	Value (thousand dollars)	Quantity (metric tons)	Value (thousand dollars)
METALS				
Aluminum:				
Alumina	119,896	118,458	1,007,380	568,690
Metal and alloys:				
Unwrought	157,764	416,916	416,916	1,312,762
Semimanufactures	5,265,288	18,074,374	6,149,896	24,309,309
Antimony, unwrought	11,480	112,370	11,183	142,473
Cobalt, matte, unwrought, and powder	2,464	122,966	4,100	258,433
Copper, metal and alloys:				
Unwrought	266,563	2,457,519	232,100	2,211,402
Semimanufactures	665,888	6,897,997	684,369	7,364,040
Ferroalloys	920,000	2,352,951	1,080,000	3,170,606
Iron and steel:				
Pig iron and cast iron	87,400	46,402	206,000	142,411
Steel:				
Bars and rods	7,770,000	7,036,584	7,650,000	8,042,162
Shapes and sections	2,570,000	2,691,562	3,640,000	4,202,680
Sheets and plates	45,090,000	50,612,456	42,980,000	55,454,577
Tube and pipe	7,530,000	11,406,937	9,094,000	16,436,678
Wire of steel or iron	2,060,000	4,609,649	2,030,000	6,055,038
Scrap	2,900	534	1,800	2,330
Manganese, unwrought	401,431	1,215,065	368,914	1,219,439
Molybdenum, ore and concentrate	20,278	334,230	15,925	336,995
Rare-earth ore, metals, and compounds	48,918	653,369	48,728	1,063,766
Silicon	726,617	2,179,295	651,293	2,339,448
Tin, metal and alloys, unwrought	14,322	422,289	10,740	327,747
Tungsten, tungstate salt	4,389	111,146	4,464	131,073
Zinc:				
Metal and alloys, unwrought	6,643 ^r	21,157 ^r	83,211	313,357
Oxide and peroxide	13,724	40,031	18,265	59,005
INDUSTRIAL MINERALS				
Barite	924,000	140,319	733,000	133,076
Cement and clinker	2,200,000	181,315	1,960,000	209,452
Fluorspar	209,000	87,585	478,000	212,278
Graphite:				
Natural	286,000	327,138	245,000	385,150
Synthesized	708,000	1,325,246	802,000	2,001,792
Lithium:				
Carbonate	7,840	99,385	10,430	682,812
Oxide and hydroxide	73,690 ^r	763,873	93,450	3,906,993
Magnesia, fused	3,220,000	943,652	3,102,000	1,055,205
Talc	727,000	170,701	668,000	156,773
MINERAL FUELS AND RELATED MATERIALS				
Coal	2,600,000	504,221	4,000,000	1,231,848
Coke, semicoke	6,640,000	2,357,839	8,930,000	4,018,721
Petroleum:				
Crude	2,610,000	1,010,394	2,052,000	1,438,104
Refinery products	60,310,000	32,414,632	53,690,000	48,301,151

Sources: General Administration of Customs of the People's Republic of China, Major Export Commodities in Quantity and Value, December 2022 and 2021; United Nations Comtrade database.

TABLE 4
CHINA: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2021 AND 2022

Commodity	2021		2022	
	Quantity (metric tons)	Value (thousand dollars)	Quantity (metric tons)	Value (thousand dollars)
METALS				
Aluminum:				
Bauxite	107,374,251	5,116,500	125,471,234	7,378,802
Alumina	3,326,851	1,323,160	1,989,747	982,787
Metal and alloys, unwrought	2,733,556	2,578,491	1,946,038	4,802,595
Semimanufactures	478,002	2,864,425	667,992	1,735,412
Scrap	1,033,367	2,038,417	1,516,050	3,290,275
Chromium, chromite	14,918,000 ^r	2,607,411	14,967,000	3,506,701
Cobalt, matte, unwrought, and powder	317,000	4,711,587	360,000	5,950,071
Copper:				
Ore and concentrate	23,400,000	56,763,642	25,270,000	56,328,467
Metal and alloys:				
Unwrought	4,009,000 ^r	36,073,461	4,237,000	37,097,581
Semimanufactures	1,520,000	16,379,965	1,633,000	17,209,010
Scrap	1,690,000	12,664,080	1,771,000	13,659,435
Gold	821	47,279,366	1,345	76,653,531
Iron ore	1,124,320,000	184,673,964	1,106,860,000	128,096,630
Iron and steel, steel:				
Bars and rods	2,671,000	1,780,036	816,000	695,286
Shapes and sections	706,000 ^r	1,499,682 ^r	496,000	1,305,965
Sheets and plates	9,949,000	12,019,073	8,590,000	11,880,581
Tube and pipe	391,000	2,317,011	281,000	2,139,808
Scrap	553,000	324,422	559,000	401,534
Lead, ore and concentrate	1,203,270	1,862,127	1,013,000	1,449,585
Manganese, ore and concentrate	29,958,000 ^r	4,904,043 ^r	29,889,000	5,752,588
Nickel, ore and concentrate	43,528,000 ^r	4,420,154 ^r	40,018,000	4,536,097
Silicon, polycrystalline	114,183	2,040,244	88,015	2,650,962
Tin, ore and concentrate	184,000	1,327,755	244,000	2,040,245
Titanium dioxide	211,000	703,059	141,000	549,112
Zinc, ore and concentrate	3,643,145	3,869,204	4,128,000	4,771,861
INDUSTRIAL MINERALS				
Diamond	kilograms	2,525	9,886,890	2,045
Lithium:				
Carbonate	81,000	562,057	136,000	6,729,763
Oxide and hydroxide	3,600	33,404	3,100	57,539
Nitrogen, phosphorus, and potassium fertilizers:				
Compound fertilizers	1,210,000	644,461	700,000	516,978
Potassium chloride	7,570,000	1,941,046	7,930,000	4,199,036
Potassium sulfate	51,500	21,813	38,600	23,739
Urea	53,700	28,392	4,800	3,433
MINERAL FUELS AND RELATED MATERIALS				
Coal	323,220,000	35,896,352	293,200,000	42,615,476
Natural gas	42,430,000	11,630,882	45,810,000	17,826,128
Liquefied natural gas	78,930,000	44,179,022	63,440,000	52,192,681
Petroleum:				
Crude	512,980,000	257,331,157	508,280,000	365,512,020
Refinery products	27,120,000	16,694,454	26,450,000	19,604,589

Sources: General Administration of Customs of the People's Republic of China, Major Import Commodities in Quantity and Value, December 2022 and 2021; United Nations Comtrade database.

TABLE 5
CHINA: RESERVES OF MAJOR MINERAL COMMODITIES IN 2022¹

(Thousand metric tons unless otherwise specified)

Commodities		Reserves ^{2,3}
Antimony, Sb content		670
Barite		110,000
Bauxite		680,000
Chromite		2,800
Clay, kaolin		690,000
Coal	million metric tons	210,000
Copper, Cu content		41,000
Fluorspar		86,000
Gold, Au content	metric tons	3,100
Graphite, mineral		81,000
Iron ore	million metric tons	16,000
Lead, Pb content		22,000
Lithium, LiO ₂ content		6,400
Magnesite		680,000
Manganese, ore		280,000
Mirabilite, Na ₂ SO ₄ content	million metric tons	1,200
Molybdenum, Mo content		5,900
Natural gas	billion cubic meters	6,600
Nickel, Ni content		4,400
Petroleum	million 42-gallon barrels	28,000
Phosphate rock	million metric tons	3,700
Potash, KCl content	do.	290
Pyrites	do.	1,100
Salt, NaCl content	do.	14,000
Silver, Ag content		70
Talc		60,000
Tin, Sn content		1,000
Titanium, TiO ₂ content		110,000
Tungsten, WO ₃ content		3,000
Vanadium, V ₂ O ₅ content		7,300
Zinc, Zn content		46,000
do., Ditto.		

¹Source: 2023 China Mineral Resources.

²Data have been rounded to no more than two significant digits.

³The National Bureau of Statistics of China categorizes these as "basic reserves."