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The Mineral Industry of India

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India's economy had grown consistently in the past decade, which resulted in an increase in India's production of and demand for mineral commodities. In 2023, India was among the world's leading producers of numerous commodities. The country was ranked first in the world in the production of barite (excluding the United States), accounting for 32% (estimated) of the world total; talc, 21% (estimated); and kaolin, 19% (estimated). The country was ranked second for bentonite and feldspar production, each accounting for 18% of the world total (estimated); fuller's earth, 17% (estimated); wollastonite (excluding the United States), 11% (estimated); ammonia and cement, 10% each (estimated for cement); raw steel, 8%; pig iron, 7%; and aluminum (smelter), 6%. The country was ranked fourth for iron ore (Fe content) production, accounting for 11% of the world total; zinc, 7%; and alumina, 5% (estimated). The country was ranked fifth for lead production, accounting for 5% of the world total. The country was ranked sixth for bauxite production, accounting for 5% of the world total. India's mineral reserves of rare earths accounted for 8% of the world total and ranked third worldwide, and those of chromium accounted for 7% and ranked fourth (Apodaca, 2025; Barry, 2025; Brioche, 2025; Cordier, 2025; Hatfield, 2025; Kim, 2025; Klochko, 2025; Merrill, 2025a, b; Sangine, 2025; Schulte, 2025; Simmons, 2025; Tolcin, 2025; Tuck, 2025a, b).

Minerals in the National Economy

In 2023, India's real gross domestic product (GDP) increased by 8.2% compared with an increase of 7.0% in 2022. The nominal GDP in 2023 was $3.57 trillion. The mining and quarrying sector accounted for 2.1% of gross value added (which decreased by 0.1 percentage points in 2023 compared to 2022), the manufacturing sector accounted for 16.8%, and the construction sector accounted for 8.8%. In 2022 (the latest year for which data were available), the construction sector accounted for 12.5% of total employment, the manufacturing sector accounted for 11.6%, and the mining and quarrying sector accounted for less than 1% (International Labour Office, 2024, p. 42; Ministry of Statistics & Programme Implementation, 2024, p. 12; World Bank, The, 2025a, b).

Government Policies and Programs

The legal and regulatory policy of the mineral industry in India classifies minerals as either major or minor minerals. The minor mineral classification primarily refers to clay, gravel, sand, and stone minerals. Concessions for both major and minor minerals are awarded by State governments, but the Federal Government has primacy with regard to the legal and regulatory framework for major minerals. Since 2015, State governments have granted concessions predominantly using auctions. The Mines and Minerals (Development and Regulations) Act, 1957 (MMDR) (most recently amended in 2023) is the primary legislation stipulating the development and regulation of mines and minerals in India, including auctions and concessions. Although the issue of ownership of mineral and subsoil rights is constitutionally unclear, the MMDR clearly stipulates that no mining operations may be undertaken without a mining concession. Therefore, either State or Federal Government approval is required for all mining operations in the country. All mining leases are granted for a period of 50 years. State governments are allowed to terminate licenses early, as they deem appropriate, including for the preservation of the natural environment. Various clearances, such as forest or environmental clearances, are required and set capacity limits for the extraction of minerals. Leases also lapse if no production occurs for at least 2 years (Times of India, The, 2016; Press Information Bureau Delhi, 2023; PRS Legislative Research, 2023; Sudarsan and others, 2024).

In May, the United States launched the Indo-Pacific Economic Framework for Prosperity (IPEF), which was composed of 14 member countries, including India. The IPEF is an economic initiative that focuses on four pillars: fair and resilient trade; supply chain resilience; infrastructure, clean energy, and decarbonization; and taxation and anti-corruption. India opted out of the trade pillar, partly because of concerns about retaining regulatory autonomy (White House, The, 2022; Pandit, 2023; Nandi, 2023).

Production

In 2023, the production of fluorspar (metallurgical grade) increased by 537%; graphite (crystalline flake), by 47%; garnet, by 42%; gold ore (gross weight), by 31%; ferromolybdenum and refined gold bullion, by 28% each; ferromanganese, by 20%; manganese ore (gross weight), by 18%; direct-reduced iron (DRI), by 17%; finished steel products and refined secondary zinc (remelt), by 14% each (estimated for refined secondary zinc); refined silver, semimanufactured steel products, and smelter silver, by 13% each; ammonia, bituminous coal, natural gas (gross), and raw steel, by 12% each; cement, iron ore (gross weight), and wollastonite, by 11% each (estimated for cement); and iron ore (Fe content), by 10%. The production of kyanite decreased by 52%; sillimanite, by 50%; mined tin (concentrate), by 35%; pyrophyllite, by 33% (estimated); vermiculite, by 26%; ferrovanadium and primary aluminum metal, by 12% each; and lignite coal, by 11%. Data on mineral production are in table 1.

Structure of the Mineral Industry

The Federal Government accounts for a small proportion of ownership in the mineral industry. Major mineral-industry-related state-owned enterprises (SOEs) included those operating in the crude petroleum sector, which accounted for 17% of all SOEs; the coal sector, 15%; and the petroleum refinery and marketing sector, 8%. In 2020, as part of an amendment

to the MMDR, the Federal Government allowed private non-coal companies to invest in the coal industry. An August 2023 amendment to MMDR introduced several reforms to the mining industry in order to promote the mining and exploration of critical minerals. One of these reforms removed the classification of "atomic minerals" from 6 of 12 minerals: beryllium, lithium, niobium, tantalum, titanium, and zirconium. Only Federal Government-owned entities are allowed to mine and explore these minerals. Other reforms granted the Federal Government, as opposed to State governments, to auction mineral leases for certain critical minerals and introduced a new exploration license for deep-seated and critical minerals, which are minerals deep underground and require large investments for exploration and mining (Agarwal and others, 2022, p. 8; Krishna, 2022; World Bank, The, 2022, p. 10; Press Information Bureau Delhi, 2023). Table 2 is a list of major mineral industry facilities.

Mineral Trade

In 2023, India's total exports were valued at $432 billion. Exports of mineral products were valued at $162 billion. Of this amount, exports of mineral fuels and products were valued at $89.7 billion; precious and semiprecious stones and metals, $33.4 billion; ferrous metals and articles thereof, $21.6 billion; nonferrous metals and articles thereof, $11.5 billion; and ores and concentrate, $3.98 billion. Of the exports of mineral fuels and products, those of refined petroleum were valued at $85.3 billion, and petroleum gas and hydrocarbons, $388 million. Major exported nonferrous metals and articles thereof included those of aluminum, which had an export value of $7.34 billion; copper, $2.26 billion; zinc, $890 million; and lead, $719 million. Exported quantities of the unwrought metals were 1.96 million metric tons (Mt), 53,800 metric tons (t), 273,000 t, and 307,000 t, respectively. Exports of ferrous metals and articles thereof included 426,000 t of pig iron valued at $201 million and 1.34 Mt of DRI valued at $509 million. Exports of precious and semiprecious stones and metals included 37.6 million carats of diamonds valued at $18.2 billion (table 3; Directorate General of Commercial Intelligence and Statistics, 2024).

In 2023, India's total imports were valued at $669 billion. Imports of mineral products were valued at $348 billion. Of this amount, imports of mineral fuels and products were valued at $221 billion; ferrous metals and articles thereof, $23.9 billion; nonferrous metals and articles thereof, $20.2 billion; and ores and concentrate, $5.90 billion. Of the imports of mineral fuels and products, those of crude petroleum were valued at $140 billion; coal, $37.1 billion; petroleum gas and hydrocarbons, $24.9 billion; and refined petroleum, $11.9 billion. Major imported nonferrous metals and articles thereof included those of copper, which had an import value of $9.08 billion; aluminum, $6.87 billion; nickel, $1.39 billion; lead, $990 million; and zinc, $853 million. Imported quantities of the unwrought metals were 366,000 t; 361,000 t; 32,300 t; 350,000 t; and 230,000 t, respectively. Imports of precious and semiprecious stones and metals were valued at $72.6 billion, of which unwrought gold exports accounted for $42.5 billion (or 744,000 kg of gold) (table 4; Directorate General of Commercial Intelligence and Statistics, 2024).

In 2023, there were some notable changes in exports of selected commodities. Among metals, exports of chromium ores and concentrate increased by about 17 times to 33,582 t; cobalt hydroxides, by about 7 times to 49,565 kg; and iron ore, by 2.7 times to 43.8 Mt. Exports of ferronickel increased by about four orders of magnitude, from 738 kg to 23,077 t, 95% of which was sent to China. In 2023, India was assumed to have not produced significant quantities of ferronickel, and the country imported 100,000 t of ferronickel (68% of which was from Indonesia), so the majority of this exported ferronickel was assumed to consist of reexports of imported ferronickel. Among industrial minerals, exports of graphite decreased by 52% to 984 t (tables 1, 3, 4; Directorate General of Commercial Intelligence and Statistics, 2024).

In 2023, there were some notable changes in imports of selected commodities. Among metals, imports of silicochromium increased by 130 times to 2,629 t, over 99% of which came from China. Other notable increases in metal imports included that of DRI, by 6.2 times to 618,000 t; gold ores and concentrates, by 2.7 times to 3.91 Mt; and iron ores, by 2.2 times to 4.70 Mt. Imports of nickel ores and concentrate decreased to zero in 2023 (table 4; Directorate General of Commercial Intelligence and Statistics, 2024).

Commodity Review

Metals

Aluminum and Alumina.—In March, Kalinga Alumina Ltd. (KAL), a wholly owned subsidiary of the Adani Group formerly known as Mundra Aluminium Ltd., was selected as the preferred bidder for the Ballada and Kutrumali bauxite concessions, located in Odisha. It was also acquiring the necessary forest and environmental clearances and other regulatory approvals for commencing bauxite mining and refining. The Ballada bauxite concession was in Koraput District and had bauxite reserves of 11.5 Mt. The Kutrumali bauxite concession was in Kalahandi and Rayagada Districts and had bauxite reserves of 128 Mt. These projects would mark the entry of the Adani Group into the bauxite sector. KAL was established in December 2021 to oversee the Adani Group's bauxite operations in Odisha, especially the planned 4-million-metric-ton-per-year (Mt/yr)-capacity alumina refinery in Rayagada District (Bisoyi, 2022; AL Circle, 2023; Pragativadi, 2023; Adani Enterprises Ltd., 2024, p. 279, 519).

In April, Hindalco Industries Ltd. outlined its 5-year plan for fiscal years (FY) 2024 (which began on April 1, 2023, and ended on March 31, 2024) through FY 2028. The company planned to invest a total of $2.48 billion in its aluminum business in India and a separate $204 million in specialty alumina projects, which were increases from the $2.43 billion and $194 million, respectively, outlined in the company's previous 5-year plan (FY 2023–27). Changes to the company's upstream aluminum business plans compared with those outlined in its previous 5-year plan were as follows. For the Odisha greenfield alumina expansion project, the planned capacity decreased to 850,000 metric tons per year (t/yr) from 1 Mt/yr, the estimated cost decreased to $590 million from $850 million, and the

expected year of completion was extended to FY 2027 from FY 2026. For the Aditya–Mahan brownfield smelter expansion project, the planned capacity remained 180,000 t/yr of aluminum, the estimated cost increased to $760 million from $685 million, and the expected year of completion was extended to FY 2027 from FY 2026 (Hindalco Industries Ltd., 2022, p. 29, 30; 2023, p. 36, 37).

Copper.—In October, the Adani Group announced that its copper refinery project, which was located in Gujarat and managed through Adani Group's wholly owned subsidiary Kutch Copper Ltd., was scheduled to start production by March 2024. The refinery was expected to have a capacity of 1 Mt/yr, which would be launched in two phases: 500,000 t/yr in March 2024 and the remaining capacity at a later, unspecified date. By yearend 2023, the Adani Group had invested $1.1 billion in this project. The facility would also produce byproducts such as gold, selenium, silver, and nickel (ETEnergyWorld, 2023).

Iron and Steel.—In 2023, India produced 49.6 Mt of DRI, which made India the world's first-ranked producer and accounted for 36% of the world total. India also produced 141 Mt of raw steel in 2023, which accounted for 7% of the world total. The raw steel production capacity of India in FY 2022, the latest fiscal year for which data were available, was 154 Mt and has increased 3.7% annually since FY 2018 when capacity was 138 Mt (table 1; Ministry of Steel, 2022; World Steel Association, 2024, p. 19).

Iron Ore.—In 2023, India produced 278 Mt of iron ore. Of this, 150 Mt of iron ore was produced in Odisha, which was the top-producing State in the country. According to the private company SteelMint, iron ore production in India was forecast to increase by 10% in 2024 compared with that in 2023, and production in Odisha was forecast to increase by 11% to 14%. The SOEs National Mineral Development Corp. Ltd. (NMDC) and Odisha Mining Corp. Ltd. (OMC) were forecast to increase production by 20% and 14%, respectively, compared with that in FY 2023. In FY 2023, the two companies contributed to 28% of the country's total production. NMDC planned to increase production to 100 Mt by FY 2030 from 41 Mt in FY 2023 by acquiring environmental clearances and expanding infrastructure. OMC planned to increase iron ore sales to 76.9 Mt by FY 2027 from 34 Mt in FY 2023 by increasing production at the Guali Mine to 30 Mt/yr (Yermolenko, 2023; Indian Bureau of Mines, 2024a, p. 13; 2024b, p. 10, 11; 2024c, p. 10).

In September, the Goa State government approved a new iron ore dump handling policy, which allowed for entities to process low-grade iron ore lying in dumps inside and outside mining leases generated between November 2007 and September 2022. This followed a Supreme Court decision in December 2022 that allowed the Goa State government to commence recovery activities at the dumps of low-grade iron ore. According to the new policy, the State government would lease the iron ore dumps in accordance with mining auction policy, and successful bidders would have to acquire all necessary approvals, including environmental clearances. Approximately 700 Mt of low-grade iron ore was present in these dumps (Basu, 2023; O Heraldo Daily, 2023; Shetye, 2023).

Lithium.—In February, the Federal Government announced the discovery of 5.9 Mt of inferred lithium resources in the Salal-Haimna areas of Reasi District, Jammu and Kashmir. The lithium resources were found in clay deposits, which have not yet been demonstrated to be economically viable. The deposit was estimated to contain approximately 20,000 t of lithium carbonate equivalent. Auctions for the rights to conduct mining operations at this lithium deposit were initiated in November 2023. The last date for bid submissions was set in January 2024 (Kumar, 2023; Nadig, 2024; Takkar, 2024).

Industrial Minerals

Cement.—In 2023, India produced an estimated 420 Mt of cement. India's installed cement capacity accounted for over 8% of the world total and was 98% privately owned. The top 20 companies accounted for approximately 70% of total cement production in India. According to the India Brand Equity Foundation, India's cement production and capacity were expected to expand by 4.9% and 4% to 5%, respectively, by FY 2028. Similarly, annual cement consumption was expected to increase to 451 Mt from the current consumption of 418 Mt by the end of FY 2027 (India Brand Equity Foundation, 2024; CemNet.com, 2025; Hatfield, 2025).

In June, the Adani Group announced its plans to expand the combined installed capacity of its subsidiaries ACC Ltd. and Ambuja Cements Ltd. to 140 Mt/yr by 2028, which would make the Adani Group the second-largest cement producer in India behind UltraTech Cement Ltd. The Adani Group planned to achieve this through a joint expansion strategy, which would include an operational merger of ACC and Ambuja Cement to be completed prior to April 2024, capital expenditures valued at $5.58 billion, and new acquisitions of existing cement companies. In March, the Adani Group announced that it was planning to construct two cement plants in Andhra Pradesh that were expected to have a combined production capacity of 10 Mt/yr; the plants would be the company's first in the State (table 2; Global Cement, 2023b–g).

In October, UltraTech Cement Ltd., which had an installed cement capacity of 127 Mt/yr in India and was the largest cement producer in the country, announced that it would invest $1.56 billion, starting from FY 2026, to expand its global capacity to 187 Mt/yr. The expansion was expected to consist of four new production plants and four upgrades to existing facilities. In December, UltraTech Cement Ltd. concluded an agreement with Kesoram Industries Ltd. to acquire its two cement plants that had a combined cement capacity of 11.5 Mt/yr for $912 million (table 2; Global Cement, 2023a, h, i; Telegraph, The, 2023).

Reserves and Resources

As of 2023, India's estimated share of world reserves of chromium was 14%; rare earths, 6%; iron ore (Fe content), 4%; and graphite, 3%. In 2023, the Federal Government announced the discovery of 5.9 Mt of inferred resources of lithium resources in the Salal-Haimna areas of Reasi District, Jammu and Kashmir (Kumar, 2023; Cordier, 2024; Schulte, 2024; Stewart, 2024; Tuck, 2024). Table 5 is a list of mineral reserves in India in 2020, which was the latest year for which data were available from the 2023 National Mineral Inventory by India (Ministry of Mines, 2023).

Outlook

According to the International Monetary Fund, India's real GDP was projected to increase between 6.5% and 8.2% per year until at least 2029, and India's mining industry will likely continue to develop alongside it. The Federal Government's involvement in the mining industry and regulation of mining operations remains high, such as the explicit approval from the Federal Government for mining rights and capacity increases, but efforts at deregulation and promotion of privatization are ongoing and are likely to continue in the future. The reclassification of critical minerals such as graphite, lithium, and titanium to facilitate private sector investment may lead to future domestic and international investment. The trend of mergers and acquisitions across mineral sectors is likely to continue in the future, particularly in the cement sector. India's entry into multilateral economic frameworks such as the IPEF indicates the country's shared interests in securing critical mineral supply chains (International Monetary Fund, 2024).

Iron ore production is likely to continue to expand in the near and medium term. The resolution of legal obstacles faced by operators in Goa with regard to the low-grade iron ore dumps that have not been utilized is likely to contribute to this expansion. The utilization of the lithium resources discovered in the country faces several obstacles, including low economic viability because of the present technical difficulty of extracting lithium from clay deposits, and production, if achieved, would likely be in the long term.

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TABLE 1
INDIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2019	2020	2021	2022	2023
METALS						
Aluminum:						
Bauxite	thousand metric tons	22,321	19,988	22,136	23,843	23,361
Alumina, Al_2O_3 content	do.	6,690	6,590	7,146	7,590	7,497
Metal, primary	do.	3,524	3,431	3,962	4,064	3,590
Chromium, mine, chromite	do.	4,139	2,402	4,249	3,470	3,334
Copper:						
Mine, concentrate, Cu content		29,200	24,000	27,800	25,200	27,200
Smelter:						
Primary		342,300	243,200	363,000	395,000 r	364,000
Secondary		2,000	--	--	--	--
Total		344,000	243,000	363,000	395,000 r	364,000
Refinery:						
Primary		424,200 r	333,542	353,086 r	482,732 r	508,902
Secondary		2,000	--	--	--	--
Total		426,000 r	334,000	353,000 r	483,000 r	509,000
Ferroalloys:						
Ferroaluminum		1,962	1,101	1,278	851	827
Ferromanganese		542,000	567,000	1,033,000 r	1,061,000 r	1,269,000
Ferromolybdenum		631	403	442	575	737
Ferrosilicomagnesium		15,445	9,652	15,537	16,789	15,712
Ferrosilicon[e]		93,000	90,000	90,000	90,000	90,000
Ferrotitanium		92	115	457	378	356
Ferrovanadium		587	662	779	917	807
Silicomanganese		322,966 r	324,748 r	347,963 r	325,337 r	322,890
Total		977,000 r	994,000 r	1,490,000 r	1,500,000 r	1,700,000
Gold:						
Mine, ore:						
Gross weight		594,858	450,611	486,377	572,009	749,863
Au content	kilograms	1,896	1,225	1,219	1,358	1,426
Refinery, bullion	do.	10,286	6,640	8,975	11,919	15,247
Iron ore, mine:						
Gross weight	thousand metric tons	232,755	203,835	249,475	250,327 r	277,529
Fe content[e]	do.	144,000	126,000	155,000	156,000	172,000
Iron and steel:						
Direct-reduced iron	do.	36,818	33,593	39,040 r	42,283	49,556
Pig iron	do.	74,156	67,782	77,627 r	79,888	86,273
Steel:						
Raw steel	do.	111,351	100,256	118,234	125,337	140,762
Products:						
Finished	do.	112,236	91,302	110,886	120,038	136,307
Semimanufactured	do.	109,631	100,122	117,714	125,078	140,762
Lead:						
Mine, Pb content		202,974	197,527	219,117	211,844	220,795
Refinery:						
Primary		184,901	200,000	202,968	205,770 r	217,275
Secondary		737,000	620,000	860,000	760,000	820,000
Total		922,000	820,000	1,060,000	966,000 r	1,040,000
Manganese, mine, ores and concentrate:						
Gross weight	thousand metric tons	2,975 r	2,316 r	2,899 r	2,525 r	2,974
Mn content	do.	962	548	495	730 r	744

See footnotes at end of table.

TABLE 1—Continued
INDIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2019	2020	2021	2022	2023
METALS—Continued						
Rare earths, monazite concentrate:[e]						
Gross weight		5,000	5,000	5,000	5,000	5,000
Rare-earth oxide equivalent		2,900	2,900	2,900	2,900	2,900
Selenium[e]	kilograms	14,000 [r]	14,000	14,000	14,000	14,000
Silver:						
Smelter	do.	703,046	708,308	749,533	718,598	812,933
Refinery		703	155	750	719	813
Tin, mine, concentrate		20	13	19	49	32
Titanium, mineral concentrate:[e]						
Ilmenite and leucoxene		310,000	350,000	380,000 [r]	380,000 [r]	380,000
Rutile		13,000	13,000	13,000	13,000	13,000
Zinc:						
Mine, Zn content[e]		720,000	731,000	785,000	832,000	854,000
Refinery:						
Primary		691,030	692,075	759,887	816,963	811,839
Secondary, remelt[e]		21,000	17,900	19,400	21,000	24,000
Total		712,000	710,000	779,000	838,000	836,000
Zirconium, zircon[e]		15,000	16,000	16,000	16,000	16,000
INDUSTRIAL MINERALS						
Abrasives, garnet	thousand metric tons	9	1	12	12	17
Barite[e]		2,100,000	1,600,000	1,600,000	2,600,000 [r]	2,600,000
Bromine, elemental		2,813	2,779	3,513	6,959	6,900 [e]
Cement, hydraulic[e]	thousand metric tons	334,000	290,000	350,000	380,000	420,000
Clay:						
Ball clay[e]	do.	4,530	4,500	4,500	4,500	4,500
Bentonite[e]	do.	3,700	3,700	3,700	3,700	3,700
Fire clay	do.	528	530 [e]	530 [e]	530 [e]	530 [e]
Fuller's earth[e]	do.	619	730	730	730	730
Kaolin:[e]						
Crude	thousand metric tons	8,300	8,300	8,300	8,300	8,300
Processed	do.	74	74	73	73	73
Diamond:						
Gem	thousand carats	10 [e]	6 [e]	--	--	--
Industrial	do.	27 [e]	16 [e]	--	--	--
Feldspar		6,173,287	4,800,000 [e]	6,400,000 [e]	6,000,000 [r, e]	6,000,000 [e]
Fluorspar, metallurgical grade		1,424	917	1,421	988	6,297
Graphite:[e]						
Amorphous		600 [r]	600	600 [r]	600 [r]	600
Crystalline flake		5,600 [r]	5,200 [r]	6,500 [r]	17,000 [r]	25,000
Gypsum, mine[e]	thousand metric tons	4,250	4,300	4,300	4,300	4,300
Iron oxide, pigments, natural, ocher		3,280,956	2,940,000	3,000,000 [e]	3,100,000 [e]	3,200,000 [e]
Kyanite and related minerals:						
Kyanite		2,681	4,941	8,586	5,507	2,652
Sillimanite		19,496	15,549	3,265	1,828	910
Lime[e]	thousand metric tons	16,000	15,000	16,000	16,000	17,000
Magnesite, mine		106,379	75,590	110,021	112,892	123,207
Mica:[e]						
Crude	thousand metric tons	1	1	1	1	1
Scrap and waste	do.	15	15	16	14	14
Total	do.	16	16	17	15	15
Nitrogen, ammonia, N content	do.	12,200	12,200	12,100	13,700	15,300

See footnotes at end of table.

TABLE 1—Continued

INDIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2019	2020	2021	2022	2023
INDUSTRIAL MINERALS—Continued						
Phosphate rock, including apatite:						
Gross weight	do.	1,484	1,407	1,363	1,778	1,647
P_2O_5 content, 25% P_2O_5	do.	370	350 e	340 e	440 e	410 e
Salt	thousand metric tons	30,033	30,000 e	26,564	26,599	27,000
Stone, crushed:						
Calcite[e]		30,000	30,000	30,000	30,000	30,000
Chalk[e]		120,000	120,000	120,000	120,000	120,000
Dolomite[e]	thousand metric tons	4,000	4,000	4,000	4,000	4,000
Limestone	do.	366,596	334,252	395,008	401,566	438,235
Sulfur, byproduct, petroleum and fertilizer, S content		875,579	762,029	840,754	926,270	981,258
Talc and related minerals:						
Pyrophyllite		30,109 r	36,799 r	119,085 r	60,000 r, e	40,000 e
Soapstone and steatite		1,595,353	1,693,376	1,350,430 r	1,400,000 r, e	1,400,000 e
Vermiculite		2,232	1,560	3,486	2,091	1,537
Wollastonite		170,401	102,209	110,778	104,294	115,458
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	523,484	720,597	766,536	863,450	968,434
Lignite	do.	40,279	37,366	44,673	47,395	42,257
Total	do.	564,000	758,000	811,000	911,000	1,010,000
Natural gas:						
Gross	million cubic meters	31,153 r	27,569 r	32,360	31,363	35,069
Marketable	do.	26,900	23,800	28,500	29,800	31,600
Petroleum:						
Crude	thousand 42-gallon barrels	297,000	226,000	219,000	215,000	213,000
Refinery[e]	do.	1,870,000	1,640,000	1,750,000	1,860,000	1,860,000
Uranium, mine, U content		308	400	615	600	600 e

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

[1]Table includes data available through December 17, 2024. All data are reported unless otherwise noted. Totals and estimated data are rounded to three significant digits; may not add to totals shown.

[2]In addition to the commodities listed, boron, cobalt, corundum, other gemstones (aquamarine, emerald, ruby, and spinel), sand and gravel (industrial), soda ash (synthetic), and sulfur (byproduct, metallurgy) may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
INDIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Alumina		Bharat Aluminium Co. Ltd. (Vedanta Ltd., 51%, and Government, 49%)	Korba I and II refineries, Chhattisgarh	200.
Do.		Hindalco Industries Ltd. (Aditya Birla Group, 35%; foreign institutions, 30%; domestic institutions, 27%; others, 8%)	Belagavi refinery, Karnataka	350.
Do.		do.	Muri refinery, Jharkhand	575.
Do.		do.	Renukoot refinery, Uttar Pradesh	900.
Do.		National Aluminium Co. Ltd. (Government, 51.28%)	Damanjodi refinery, Odisha	2,275.
Do.		Utkal Alumina International Ltd. (Hindalco Industries Ltd., 100%)	Koraput refinery, Odisha	2,270.
Do.		Vedanta Aluminium Ltd. (Vedanta Ltd., 100%)	Lanjigarh refinery, Kalahandi, Odisha	2,000.
Aluminum		Bharat Aluminium Co. Ltd. (Vedanta Ltd., 51%, and Government, 49%)	Korba I refinery, Chhattisgarh	245.
Do.		do.	Korba II refinery, Chhattisgarh	345.
Do.		Hindalco Industries Ltd. (Aditya Birla Group, 35%; foreign institutions, 30%; domestic institutions, 27%; others, 8%)	Aditya smelter, Sambalpur, Odisha	720.
Do.		do.	Hirakud smelter, Odisha	360.
Do.		do.	Mahan smelter, Bargawan, Madhya Pradesh	360.
Do.		do.	Renukoot smelter, Uttar Pradesh	410.
Do.		National Aluminium Co. Ltd. (Government, 51.28%)	Angul smelter, Odisha	460.
Do.		Vedanta Aluminium Ltd. (Vedanta Ltd., 100%)	Jharsuguda I smelter, Odisha	550.
Do.		do.	Jharsuguda II smelter, Odisha	1,200.
Barite		Andhra Pradesh Mineral Development Corp. Ltd. (Andhra Pradesh State government, 100%)	Mangampeta Mine, Andhra Pradesh	3,000.
Do.		IBC Ltd. (Government, 100%)	Mines in Kadapa District, Andhra Pradesh	NA.
Do.		Rajasthan Barytes Ltd.	Mine in Jagat, Udaipur District, Rajasthan	420.
Do.		Ramadas Minerals Pvt. Ltd. (Vishnu Chemicals Ltd., 100%)	Mines in Nellore District, Andhra Pradesh	NA.
Do.		Sudarsan Barytes Co.	Mine in Nellore District, Andhra Pradesh	NA.
Bauxite		Hindalco Industries Ltd. (Aditya Birla Group, 35%; foreign institutions, 30%; domestic institutions, 27%; others, 8%)	13 mines in 2 States	3,275.
Do.		Minerals & Minerals Ltd. (Hindalco Industries Ltd., 100%)	Pakhar Mines in Lohardaga District, Jharkhand	580.
Do.		National Aluminium Co. Ltd. (Government, 51.28%)	Mines in Panchpatmali Hills, Damanjodi, Koraput District, Odisha	7,500.
Do.		Odisha Mining Corp. Ltd. (Odisha State government, 100%)	Kodingamali Mine, Koraput District, Odisha	3,000.
Do.		Panditrao Mines and Minerals Pvt. Ltd.	Minche Budruk Mine, Kolhapur District, Maharashtra	NA.
Do.		Utkal Alumina International Ltd. (Hindalco Industries Ltd., 100%)	Baphlimali Mine, Rayagada District, Odisha	8,500.
Boron, boric acid		Borax Morarji Ltd.	Ambernath refinery, Maharashtra	24.
Do.		Indo Borax and Chemical Ltd.	Plant at Pithampur, Dhar District, Madhya Pradesh	NA.
Do.		National Peroxide Ltd.	Plant in Kalyan District, Maharashtra	150.
Bromine	metric tons	Hindustan Salts Ltd. (Government, 100%)	Plant in Kharaghoda, Gujarat	900.
Do.	do.	Jagannath Halogen Pvt. Ltd. (Jagannath Salt Group)	do.	750.
Do.	do.	Satyesh Brinechem Pvt. Ltd.	Plant in Greater Rann, Kutch, Gujarat	21.
Cadmium	do.	Hindustan Zinc Ltd. (HZL) (Vedanta Ltd., 64.9%, and Government, 29.6%)	Chanderiya smelter, Rajasthan	468.
Do.	do.	do.	Debari smelter, Rajasthan	250.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Cement	ACC Ltd. (Adani Group, 100%)	17 plants in 11 States	37,570.
Do.	Ambuja Cements Ltd. (Adani Group, 100%)	16 plants in 9 States	41,160.
Do.	Bharathi Cement Corp. Pvt. Ltd. (Vicat S.A., 51%)	Kadapa plant, Andhra Pradesh	5,000.
Do.	Binani Cement Ltd. (Braj Binani Group)	Sikar plant, Rajasthan	6,000.
Do.	Birla Corp. Ltd. (M.P. Birla Group, 100%)	4 plants in 4 States	9,800.
Do.	Century Textiles and Industries Ltd. (UltraTech Cement Ltd., 100%)	4 plants in 4 States	14,100.
Do.	Chettinad Cement Corp. Ltd. (Chettinad Group, 100%)	6 plants in 4 States	18,700.
Do.	Dalmia Cement (Bharat) Ltd. (Dalmia Bharat Ltd., 100%)	11 plants in 8 States	36,700.
Do.	HeidelbergCement India Ltd. (Heidelberg Materials, 100%)	3 plants in 3 States	6,210.
Do.	India Cements Co. Ltd.	10 plants in 5 States	15,550.
Do.	Jaiprakash Associates Ltd. (Jaypee Group, 100%)	3 plants in 2 States	5,150.
Do.	JK Cement Ltd.	9 plants in 5 States	13,580.
Do.	JK Lakshmi Cement Ltd. (JK Organization)	6 plants in 5 States	11,700.
Do.	JSW Cement Ltd.	5 plants in 5 States	15,800.
Do.	Kesoram Industries Ltd. (B.K. Birla Group)	2 plants in 2 States	11,500.
Do.	My Home Industries Ltd. (joint venture of My Home Group and CRH plc)	4 plants in 3 States	9,900.
Do.	Nu Vista Ltd. (Nirma Group, 100%)	4 plants in 4 States	8,300.
Do.	Nuvoco Vistas Corp. Ltd. (Nirma Group, 100%)	7 plants in 5 States	15,520.
Do.	Orient Cement (CK Birla Group, 100%)	3 plants in 3 States	8,500.
Do.	Penna Cement Industries Ltd.	6 plants in 3 States	10,000.
Do.	Prism Johnson Ltd. (Rajan Raheja Group, 74.87%)	Plants in Satna District, Madhya Pradesh	5,600.
Do.	Ramco Cements Ltd. (Ramco Group, 100%)	11 plants in 5 States	22,340.
Do.	Reliance Cement Co. Pvt. Ltd. (Birla Corp. Ltd., 100%)	3 plants in 3 States	5,500.
Do.	Sagar Cements Ltd. (Sagar Group, 100%)	6 plants in 3 States	10,500.
Do.	Sanghi Industries Ltd. (ACC Ltd., 100%)	Plant in Kachchh District, Gujarat	6,100.
Do.	Shree Cement Ltd.	14 plants in 10 States	46,400.
Do.	Star Cement Ltd.	3 plants in 3 States	5,970.
Do.	UltraTech Cement Ltd. (Grasim Industries Ltd., 57.3%)	Plants in Central India	28,400.
Do.	do.	Plants in East India	22,920.
Do.	do.	Plants in North India	25,700.
Do.	do.	Plants in South India	20,450.
Do.	do.	Plants in West India	29,480.
Do.	UltraTech Nathdwara Cement Ltd. (UltraTech Cement Ltd., 100%)	2 plants in Rajasthan	6,520.
Do.	Wonder Cement Ltd. (R.K. Group)	6 plants in 6 States	19,500.
Do.	Zuari Cement Ltd. (Heidelberg Materials, 100%)	4 plants in 4 States	8,050.
Chromite	Balasore Alloys Ltd. (Ispat Group, 100%)	Kaliapani Mine, Sukinda Valley, Jajpur District, Odisha	280.
Do.	Ferro Alloys Corp. Ltd. (Vedanta Ltd., 100%)	Kalarangiatta Mine in Jajpur District, Odisha	100.
Do.	do.	Ostapal Mine in Jajpur District, Odisha	240.
Do.	Indian Metals & Ferro Alloys Ltd.	Mahagiri Mine in Jajpur District, Odisha	300.
Do.	do.	Sukinda Mine in Jajpur District, Odisha	350.
Do.	Odisha Mining Corp. Ltd. (Odisha State government, 100%)	Bangur Mine in Jajpur District, Odisha	95.
Do.	do.	South Kaliapani Mine in Jajpur District, Odisha	1,000.
Do.	do.	Sukrangi Mine in Jajpur District, Odisha	300.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Chromite—Continued	Tata Steel Mining Ltd. (Tata Steel Ltd., 100%)	Kamarda Mine in Jajpur District, Odisha	80.
Do.	do.	Saruabil Mine in Jajpur District, Odisha	400.
Do.	do.	Sukinda Mine in Jajpur District, Odisha	1,400.
Clay:			
Ball clay	Bikaner Ceramics Pvt. Ltd.	Mine in Kolayat, Rajasthan	75.
Do.	Sampat Lal Daga Group	Mine in Bikaner, Rajasthan	NA.
Bentonite	Ashapura International Ltd. (Ashapura Minechem Ltd., 100%)	Mines in Kachchh District, Gujarat	350.
Do.	Gimpex Ltd.	Mine in Chennai	NA.
Do.	Gujarat Mineral Development Corp. Ltd.	Mine in Surkha, Bhavnagar District, Gujarat	750.
Do.	Vijaylaxmi Group of Industries	Mine in West Rajasthan	NA.
Fire clay	Parijat Mining Industries (India) Pvt. Ltd.	Mine in Latehar, Jharkhand	10.
Do.	Sampat Lal Daga Group	Mine in Kotri, Bikaner, Rajasthan	35.
Do.	Sunder Lal Daga	Mine in Golari, Bikaner, Rajasthan	30.
Kaolin	Gopalbhai Savanghai Dangar	Mine in Dagala, Gujarat	115.
Coal	Bharat Aluminium Co. Ltd. (Vedanta Ltd., 51%, and Government, 49%)	Chotia Mine, Chhattisgarh	1,000.
Do.	Bharat Coking Coal Ltd. [Coal India Ltd. (Government, 100%)]	Mines in Dhanbad District, Jharkhand	59,884.
Do.	Central Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Mines in Jharkhand	106,468.
Do.	Eastern Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Mines in 2 States	58,758.
Do.	Gujarat Mineral Development Corp. (Gujarat State government, 75%, and public and institutional investors, 25%)	Mines in Gujarat	9,600.
Do.	Hindalco Industries Ltd. (Aditya Birla Group, 35%; foreign institutions, 30%; domestic institutions, 27%; others, 8%)	Mines in 2 States	2,800.
Do.	Mahanadi Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Mines in Odisha	156,830.
Do.	Neyveli Lignite Corp. Ltd. (Government, 100%)	2 mines in 2 States	30,600.
Do.	North Eastern Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Makum coal mines in Tinsukia District, Assam	1,000.
Do.	Northern Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	2 mines in 2 States	149,680.
Do.	Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (Rajasthan State government, 100%)	Parsa East and Kanta Basan Mines in Korba District, Chhattisgarh	15,000.
Do.	Singareni Collieries Co. Ltd. [Andhra Pradesh State government, 50%, and Coal India Ltd. (Government), 50%]	Mines in Telangana	82,897.
Do.	South Eastern Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Mines in 2 States	235,229.
Do.	Tata Steel Ltd. (Tata Group, 100%)	West Bokaro Mine in Jharkhand	1,900.
Do.	Western Coalfields Ltd. [Coal India Ltd. (Government, 100%)]	Mines in 2 States	85,928.
Copper:			
Ore, gross weight	Hindustan Copper Ltd. (HCL) (Government, 100%)	Indian Copper Complex Mines, Ghatsila District, Jharkhand	400.
Do.	do.	Malanjkhand Copper Complex Mines, Balaghat District, Madhya Pradesh	2,500.
Do.	Hindustan Copper Ltd. (HCL) (Government, 100%)	Khetri Copper Complex Mines, Khetrinagar, Rajasthan	1,800.
Metal	Hindalco Industries Ltd. (Aditya Birla Group, 35%; foreign institutions, 30%; domestic institutions, 27%; others, 8%)	Birla Copper Complex smelter, Dahej, Gujarat	500.
Do.	Hindustan Copper Ltd. (HCL) (Government, 100%)	Indian Copper Complex smelter-refinery, Ghatsila District, Jharkhand	19.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Copper:—Continued				
Metal—Continued		Hindustan Copper Ltd. (HCL) (Government, 100%)	Khetri Copper Complex smelter-refinery, Khetrinagar District, Rajasthan	31.
Do.		do.	Taloja copper refinery, Maharashtra	50.
Do.		Sterlite Copper (Vedanta Ltd., 100%)	Silvassa refinery, Gujarat	250.
Diamond	thousand carats	National Mineral Development Corp. Ltd. (Government, 100%)	Mahjgawan Mine, Panna, Madhya Pradesh	84.
Ferroalloys:				
Ferrochrome		Balasore Alloys Ltd.	Balasore plant in Balasore District, Odisha	145.
Do.		do.	Sukinda plant in Jajpur District, Odisha	16.
Do.		Ferro Alloys Corp. Ltd.	Plant in Bhadrak District, Odisha	81.
Do.		Indian Metals & Ferro Alloys Ltd.	Choudwar plant in Cuttack District, Odisha, and Therubali plant in Rayagada District, Odisha	284.
Do.		Tata Steel Mining Ltd. (Tata Steel Ltd., 100%)	Athagarh plant in Cuttack District, Odisha	55.
Do.		do.	Gopalpur plant in Ganjam District, Odisha	55.
Ferromanganese		Steel Authority of India Ltd. (Government, 100%)	Chandrapur Ferro Alloy Plant, Maharashtra	90.
Silicomanganese		do.	do.	70.
Fluorite		Maharashtra State Mining Corp. Ltd. (Government, 100%)	Dongargaon Mine, Chandrapur District, Maharashtra	6.
Garnet		AKD Gem Garnet Mines	Kodukota Mine, Bhilwara, Rajasthan	NA.
Do.		Ansari Brothers Garnet Works	Rajmahal Mine, Tonk, Rajasthan	NA.
Do.		Indian Rare Earths Ltd. (Government, 100%)	Orrisa Sands Complex, Ganjam, Odisha	20.
Do.		do.	Manavalakurichi Mine, Kanniaykumari, Tamil Nadu	10.
Do.		Trimex Sands Pvt. Ltd. (Trimex Group, 100%)	Sirkurman deposit, Srikakulam, Andhra Pradesh	60.
Do.		do.	Bhavanapadu mineral sands deposit, Andhra Pradesh	50.
Do.		V.V. Mineral Ltd. (V.V. Group, 100%)	Thoothukudi Mine, Tamil Nadu	NA.
Gold:				
Ore, gross weight		Hutti Gold Mines Co.	Hira-Buddini Mine, Karnataka	73.
Do.		do.	Hutti Mine, Karnataka	560.
Metal	kilograms	AJ Gold & Silver Refinery Inc.	Refinery in Hamirpur, Himachal Pradesh	150.
Do.	do.	Altim Metals Pvt. Ltd.	Refinery in Udham Singh Nagar, Uttarakhand	26.
Do.	do.	Bangalore Refinery Pvt. Ltd.	Refinery in Bangalore, Karnataka	30.
Do.	do.	Bright Metal Refiners	Refinery in Udham Singh Nagar, Uttarakhand	30.
Do.	do.	Chemmanur Gold Refinery Pvt. Ltd.	Refinery in Ernakulam, Kerala	30.
Do.	do.	Diamond Forever International	Refinery in Udham Singh Nagar District, Uttarakhand	35.
Do.	do.	Edelweiss Metals Ltd. (Edelweiss Financial Services Inc.)	Refinery in Ahmedabad, Gujarat	70.
Do.	do.	Emerald Jewel Industry India Ltd.	Refinery in Coimbatore, Tamil Nadu	40.
Do.	do.	Gujarat Gold Centre (GGC) Pvt. Ltd.	Refinery in Ahmedabad, Gujarat	30.
Do.	do.	do.	Refinery in Hyderabad, Telangana	40.
Gold—Continued:				
Metal—Continued	do.	Jalan and Company	Refinery in Chandni Chowk, New Delhi	30.
Do.	do.	Khandwala Finstock Pvt. Ltd.	do.	40.
Do.	do.	Kundan Care Products Ltd.	Refinery in Hareswar, Uttarakhand	30.
Do.	do.	M.D. Overseas Ltd.	Refinery in Rudrapur, Uttarakhand	30.
Do.	do.	MMTC-PAMP India Pvt. Ltd. (joint venture MMTV Ltd. and PAMP SA)	Refinery in Mewat, Haryana	150.
Do.	do.	National India Bullion Refinery	do.	30.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Gold—Continued:				
Metal—Continued	kilograms	National Refinery Pvt. Ltd.	Refinery in Mewat, Haryana	30.
Do.	do.	Orelia Refineries Pvt. Ltd.	Refinery in Solan, Himachal Pradesh	40.
Do.	do.	Parekh Platinum Ltd.	Refinery in Mumbai, Maharashtra	30.
Do.	do.	Shirpur Gold Refinery Ltd. (Zee Gold DMCC)	Refinery in Shirpur, Dhule, Maharashtra	217.
Do.	do.	Zaveri & Co. Pvt. Ltd.	Refinery in Ahmedabad, Gujarat	30.
Do.	do.	do.	Refinery in Rudrapur, Uttarakhand	30.
Graphite, gross weight		Hemant Kumar Poddar	Rabda Mine in Palamau District, Jharkhand	130.
Do.		Krishna Kumar Poddar	Murma Mine in Palamau District, Jharkhand	34.
Do.		do.	Temrimal Mine in Bargarh District, Odisha	33.
Do.		Parijat Mining Industries Pvt. Ltd.	Betla Mine in Latehar District, Jharkhand	38.
Do.		do.	Bandhamandi Mine in Rayaga District, Odisha	142.
Do.		Sibananda Pradhan	Birida Mine in Rayagada District, Odisha	62.
Do.		Tamil Nadu Minerals Ltd.	Sivaganga Mine in Sivaganga District, Tamil Nadu	104.
Gypsum		FCI Aravali Gypsum and Minerals India Ltd.	Mohangarh, Bikaner, Suratgarh, and Ramsinghpur groups of mines, Rajasthan	1,100.
Iron ore, Fe content		Jindal Steel & Power Ltd. (Jindal Group, 60.41%; foreign investors, 23.18%; and others, 16.41%)	2 mines in Odisha	10,610.
Do.		JSW Steel Co. Ltd.	do.	11,620.
Do.		M.S.P.L. Ltd. (Baldota Group, 100%)	Vyasanakere Mine, Hospet, Karnataka	1,800.
Do.		National Mineral Development Corp. Ltd. (Government, 100%)	Mines in 2 States	26,500.
Do.		Odisha Mining Corp. Ltd. (Odisha State government, 100%)	Mines in Odisha	26,900.
Do.		Rungta Sons Pvt. Ltd.	Sanindpur Mine, Odisha	2,800.
Do.		Serajuddin & Co.	Balda Mines, Odisha	15,500.
Do.		Sesa Iron Ore (Vedanta Group, 68.1%)	Mines[1] in Goa	5,500.
Do.		do.	Mines in Karnataka	4,500.
Do.		Steel Authority of India Ltd. (Government, 100%)	Mines in 2 States	31,400.
Do.		Tata Steel Long Products Ltd. (Tata Group, 100%)	Vijay-II Mine, Jharkhand	2,500.
Do.		Tata Steel Ltd. (Tata Group, 100%)	3 mines in Odisha	38,000.
Do.		Vedanta Ltd.	Nadidih Mine, Odisha	5,100.
Iron and steel:				
Direct-reduced iron		Aarti Steels Ltd.	Plants in Ludhiana, Punjab, and Cuttack, Odisha	320.
Do.		Action Ispat & Power Pvt. Ltd.	Plants in Marakuta and Pandaripathar, Jharsugunda, Odisha	250.
Do.		Adhunik Metaliks Ltd.	Plant in Chandrihariharpur, Sundargarh, Odisha	500.
Do.		Alliance Integrated Metaliks Ltd.	Plant in Bemta, Raipur, Chhattisgarh	500.
Do.		ArcelorMittal Nippon Steel India Ltd. (ArcelorMittal S.A., 60%, and Nippon Steel Corp., 40%)	Plant in Hazira, Gujarat	6,800.
Do.		Essar Steel Ltd. (Essar Global Fund Ltd., 100%)	Plant in Hazira, Gujarat	6,800.
Do.		Godawari Power & Ispat Ltd.	Plant in Raipur, Chhattisgarh	594.
Do.		Jindal Steel & Power Ltd. (Jindal Group, 60.41%; foreign investors, 23.18%; and others, 16.41%)	Plant in Raigarh, Chhattisgarh	1,320.
Do.		JSW Ispat Special Steel Products Ltd. (Aion Investments Pvt. Ltd., 76.9%, and JSW Steel Co. Ltd., 23.1%)	Plant in Raigarh, Chhattisgarh	800.
Do.		JSW Steel Ltd.	Plant in Geetapuram, Maharashtra	1,600.
Do.		do.	Plant in Salav, Maharashtra	900.
Do.		Kalyani Steels Ltd.	Plant in Hospet, Karnataka	500.
Do.		Shri Barjang Power & Ispat Ltd.	Plant in Raipur, Chhattisgarh	610.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Iron and steel:—Continued			
Direct-reduced iron—Continued	Shri Barjang Power & Ispat Ltd.	Bhilai plant in Chhattisgarh; Bokaro plant in Jharkhand; Durgapur plant in West Bengal; Rourkela plant in Odisha	24,000.
Do.	Tata Steel BSL Ltd. (Tata Group, 100%)	Meramandali plant in Dhenkanal, Odisha	1,500.
Do.	Tata Steel Long Products Ltd. (Tata Group, 100%)	Plant in Jamshedpur, Jharkhand	500.
Raw steel	ArcelorMittal Nippon Steel India Ltd. (ArcelorMittal S.A., 60%, and Nippon Steel Corp., 40%)	Plant in Hazira, Gujarat	9,600.
Do.	Bhushan Power & Steel Ltd. (JSW Steel Co. Ltd., 83.3%)	Plant in Jharsuguda, Odisha	3,500.
Do.	Jindal Steel & Power Ltd. (Jindal Group, 60.41%; foreign investors, 23.18%; and others, 16.41%)	Angul plant, Odisha	6,000.
Do.	do.	Raigarh plant, Chhattisgarh	3,600.
Do.	JSW Ispat Special Steel Products Ltd. (Aion Investments Pvt. Ltd., 76.9%, and JSW Steel Co. Ltd., 23.1%)	Plants in Raigarh and Raipur, Chhattisgarh	1,200.
Do.	JSW Steel Co. Ltd.	Dolvi works, Maharashtra	10,000.
Do.	do.	Salem steel plant, Tamil Nadu	1,000.
Do.	do.	Vijayanagar works, Karnataka	12,000.
Do.	National Mineral Development Corp. Ltd. (Government, 100%)	Nagarnar steel plant, Chhattisgarh	3,000.
Do.	Rashtriya Ispat Nigam Ltd. (Steel Authority of India Ltd., 100%)	Steel plant in Andhra Pradesh	7,300.
Do.	Steel Authority of India Ltd. (Government, 100%)	Alloy steel plant, West Bengal	230.
Do.	do.	Bhilai steel plant, Chhattisgarh	7,000.
Do.	do.	Bokaro steel plant, Jharkhand	4,650.
Do.	do.	Durgapur steel plant, West Bengal	2,200.
Do.	do.	IISCO steel plant, West Bengal	2,500.
Do.	do.	Rourkela steel plant, Odisha	4,200.
Do.	do.	Visvesvaraya iron and steel plant, Karnataka	216.
Do.	Tata Steel Ltd. (Tata Group, 100%)	Jamshedpur plant, Jharkhand	11,000.
Do.	do.	Kalinganagar plant, Odisha	3,000.
Do.	do.	Meramandali plant, Odisha	5,600.
Do.	do.	NINL Kalinganagar plant, Odisha	1,000.
Do.	Tata Steel Long Products Ltd. (Tata Group, 100%)	Gamharia steel plant, Jharkhand	1,000.
Kyanite	Bihar State Mineral Development Corp. Ltd. (Bihar State government, 100%)	Mine in Singhbhum District, Bihar	10.
Do.	Maharashtra Mineral Corp. Ltd.	Navargaon-Chowa Mine, Maharashtra	10.
Do.	Pavri Kyanite Mines Co.	Pavri Kyanite Mine (Jamdi), Maharashtra	NA.
Lead:			
Mine, Pb content	Hindustan Zinc Ltd. (HZL) (Vedanta Ltd., 64.9%, and Government, 29.6%)	Kayad Mine, Rajasthan	27.
Do.	do.	Rajpura-Dariba Mine, Rajasthan	29.
Do.	do.	Rampura-Agucha Mine, Rajasthan	166.
Do.	do.	Sindesar-Khurd Mine, Rajasthan	162.
Do.	do.	Zawar Mine, Rajasthan	108.
Metal	do.	Chanderiya smelter, Rajasthan	85.
Do.	do.	Dariba Smelting Complex, Rajasthan	120.
Magnesite	Almora Magnesite Ltd. (Uttarakhand State government, 41%; TRL Krosaki Refractories Ltd., 39%; Steel Authority of India Ltd., 20%)	Jhiroli Mine in Bagshewar District, Uttarakhand	54.
Do.	Dalmia Bharat Sugar and Industries Ltd. (Dalmia Bharat Ltd., 100%)	Chettichavadi Jaghir Mine in Salem District, Tamil Nadu	50.
Do.	S. Sundararajan	Sri Ponguru Mine in Salem District, Tamil Nadu	77.
Do.	Tamil Nadu Magnesite Corp. Ltd. (Tamil Nadu State government, 100%)	Arasu Mine in Salem District, Tamil Nadu	127.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Manganese, ore, gross weight	Metals & Minerals Ltd.	7 mines in Madhya Pradesh	1,057.
Do.	MOIL (Government, 53%; Maharashtra State government, 6%; Madhya Pradesh State government, 5%)	9 mines in Maharashtra	1,027.
Do.	Odisha Mining Corp. Ltd. (Odisha State government, 100%)	Dubna Mine in Keonjhar District, Odisha	100.
Do.	R.B.S.S. Durga Prasad & F.N. Das	5 mines in 2 States	714.
Do.	S.K. Sarawagi & Co. Pvt. Ltd. (Sarawagi Group, 100%)	5 mines in Andhra Pradesh	187.
Do.	Sandur Manganese and Iron Ores Ltd.	Smiore Mine in Bellary District, Karnataka	286.
Do.	Tata Steel Ltd. (Tata Group, 100%)	4 mines in Odisha	948.
Petroleum, refined thousand 42-gallon barrels per day	Bharat Petroleum Corp. Ltd. (Oil and Natural Gas Corp., 67%, and private interests, 33%)	Mahul refinery, Mumbai, Maharashtra	135.
Do. do.	Essar Oil Ltd.	Vadinar refinery, Gujarat	245.
Do. do.	do.	Visakhapatnam refinery, Andhra Pradesh	90.
Do. do.	Hindustan Petroleum Corp. Ltd. (Oil and Natural Gas Corp., 51%, and private interests, 49%)	Madras refinery, Tamil Nadu	110.
Do. do.	Indian Oil Corp. (Oil and Natural Gas Corp., 91%, and private interests, 9%)	Mathura refinery, Uttar Pradesh	400.
Do. do.	Kochi Refineries Ltd. (Oil and Natural Gas Corp., 55%, and private interests, 45%)	Ambalamugal refinery, Kerala	67.
Do. do.	do.	Haldia refinery, West Bengal	61.
Do. do.	Madras Refineries Ltd. (Oil and Natural Gas Corp., 52%, and private interests, 48%)	Madras refinery, Tamil Nadu	131.
Do. do.	Reliance Industries Ltd.	Jamnagar refinery, Gujarat	668.
Do. do.	do.	Koyali refinery, Gujarat	185.
Phosphate rock, gross weight	Hindustan Zinc Ltd. (HZL) (Vedanta Ltd., 64.9%, and Government, 29.6%)	Maton Mine, Rajasthan	NA.
Do.	Madhya Pradesh State Mining Corp. Ltd. (Madhya Pradesh State government, 100%)	Hirapur (Maddeora) and Khatamba Mines, Madhya Pradesh	NA.
Do.	do.	Hirapur Mine (Tigoda), Madhya Pradesh	NA.
Do.	do.	Jhabua Mine, Madhya Pradesh	NA.
Do.	Pyrites Phosphates and Chemicals Ltd.	Durmala and Maldeota underground mines, Uttarakhand	NA.
Do.	Rajasthan State Mineral Development Corp. Ltd. (Rajasthan State government, 100%)	Badgaon, Dakankotra, Jamarkotra, Kanpur, Kharbaria-ka-Guda, and Sallopat Mines, Rajasthan	1,500.
Rare earths, refined, rare-earth-oxide equivalent	Indian Rare Earths Ltd. (Government, 100%)	Orissa Sands Complex in Ganjam District, Odisha	5.
Salt	Dev Salt Pvt. Ltd.	Mine in Morbi, Gujarat	1,200.
Do.	Hindustan Salt Ltd.	Mine at Mandi District, Himachal Pradesh	4,800.
Do.	Satyesh Brinechem Pvt. Ltd.	Plant in Greater Rann, Kutch, Gujarat	3,000.
Sillimanite	Indian Rare Earths Ltd. (Government, 100%)	Chavara Mine, Kollam District, Kerala	10.
Do.	do.	Orissa Sands Complex, Ganjam, Odisha	13.
Do.	do.	Manavalakurichi Mine in Kanniaykumari, Tamil Nadu	9.
Do.	Kerala Minerals and Metals Ltd. (Kerala State government, 100%)	Chavara Mine, Kollam District, Kerala	66.
Do.	Trimex Sands Pvt. Ltd. (Trimex Group, 100%)	Bhavanapadu deposit, Andhra Pradesh	50.
Do.	do.	Sirkurman deposit, Srikakulam, Andhra Pradesh	50.
Do.	V.V. Mineral Ltd. (V.V. Group, 100%)	Thoothukudi Mine, Tamil Nadu	NA.
Silver, metal metric tons	Hindustan Zinc Ltd. (HZL) (Vedanta Ltd., 64.9%, and Government, 29.6%)	Smelter in Chavara, Kerala	600.
Do. do.	do.	Chanderiya smelter, Rajasthan	168.
Do. do.	Hutti Gold Mines Co.	Hutti refinery, Karnataka	560.
Do. do.	do.	Hira-Buddini refinery, Karnataka	33.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Titanium	Beach Minerals Co. Pvt. Ltd. (BMC Group, 100%)	Mine[2] in Kuttam, Chennai District, Tamil Nadu	150 ilmenite.
Do.	Indian Rare Earths Ltd. (Government, 100%)	Manavalakurichi Mine in Kanyakumari District, Tamil Nadu	90 ilmenite; 4 rutile.
Do.	do.	Mines in Chavara, Kollam District, Kerala	200 ilmenite; 11 rutile.
Do.	do.	Orissa Sands Complex in Ganjam District, Odisha	270 ilmenite; 11 rutile.
Do.	Kerala Minerals and Metals Ltd. (Kerala State government, 100%)	Mines in Chavara, Kollam District, Kerala	62 ilmenite; 4 rutile.
Do.	Trimex Sands Pvt. Ltd. (Trimex Group, 100%)	Kalingapatnam-Bhavanapadu Mine[2] in Srikakulam District, Andhra Pradesh	300 ilmenite; 8 rutile.
Do.	do.	Srikurmam Mine[2] in Srikakulam District, Andhra Pradesh	200 ilmenite; 6 rutile.
Do.	V.V. Mineral Ltd. (V.V. Group, 100%)	Mines[2] in Tirunelveli District, Tamil Nadu	450 ilmenite; 12 rutile.
Uranium, ore, U content metric tons	Uranium Corp. Ltd. of India [Department of Atomic Energy (Government, 100%)]	Bagjata, Banduhurang, Bhatin, Jaduguda, Narwapahar, Turamdih and Mohuldih Mines, Jharkhand, and Tummalppalle Mine, Andhra Pradesh	650.
Wollastonite	Renu Atre	Ramawas Mine, Ajmer District, Rajasthan	NA.
Do.	Wolkem Industries Ltd.	Belka, Khera, and Beawar Mines, Udaipur District, Rajasthan	170.
Zinc:			
Mine, Zn content	Hindustan Zinc Ltd. (HZL) (Vedanta Ltd., 64.9%, and Government, 29.6%)	Kayad Mine in Ajmer District, Rajasthan	85.
Do.	do.	Rajpura-Dariba Mine in Rajsamand District, Rajasthan	52.
Do.	do.	Rampura-Agucha Mine Bhilwara District, Rajasthan	640.
Do.	do.	Sindesar-Khurd Mine in Rajsamand District, Rajasthan	172.
Do.	do.	Balaria Mine in Udaipur District, Rajasthan	30.
Do.	do.	Baroi Mine in Udaipur District, Rajasthan	47.
Do.	do.	Mochia Mine in Udaipur District, Rajasthan	41.
Do.	do.	Zawarmala Mine in Udaipur District, Rajasthan	14.
Metal	do.	Chanderiya smelter, Chittorgarh District, Rajasthan	558.
Do.	do.	Dariba Smelting Complex, Rajsamand Mewar District, Rajasthan	240.
Do.	do.	Debari smelter, Udaipur District, Rajasthan	92.
Zircon	Indian Rare Earths Ltd. (Government, 100%)	Manavalakurichi Mine in Kanyakumari District, Tamil Nadu	10.
Do.	do.	Mines in Chavara, Kollam District, Kerala	7.
Do.	do.	Orissa Sands Complex in Ganjam District, Odisha	18.
Do.	Kerala Minerals and Metals Ltd. (Kerala State government, 100%)	Mines in Chavara, Kollam District, Kerala	7.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Zircon—Continued	Trimex Sands Pvt. Ltd. (Trimex Group, 100%)	Kalingapatnam-Bhavanapadu Mine[2] in Srikakulam District, Andhra Pradesh	7.
Do.	do.	Srikurmam Mine[2] in Srikakulam District, Andhra Pradesh	6.
Do.	V.V. Mineral Ltd. (V.V. Group, 100%)	Mines[2] in Tirunelveli District, Tamil Nadu	18.

Do. do. Ditto. NA Not available.

[1]Operations have been suspended since 2019 following a Federal Government ban on mining of beach sand minerals.

[2]Operations were put on care and maintenance since May 2022 due to the lack of working capital.

TABLE 3
INDIA: EXPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS						
Aluminum:						
Alumina		1,363,610	1,265,838	1,472,323 [r]	1,813,949	2,149,774
Bars and rods		18,082 [r]	16,730 [r]	34,843 [r]	43,321 [r]	12,843
Bauxite		942,111 [r]	207,795 [r]	399,589 [r]	192,620 [r]	190,000 [e]
Foil		24,355 [r]	25,436 [r]	33,682 [r]	49,467	34,537
Metal and alloys, unwrought		1,962,131 [r]	2,139,463 [r]	2,667,986 [r]	2,445,919 [r]	1,957,290
Plates, sheets and strip		86,098 [r]	58,226 [r]	93,741 [r]	54,004 [r]	58,252
Powder		3,637 [r]	3,289 [r]	4,378	3,683	4,200
Scrap		5,945	5,374	9,717	9,251	8,217
Tube and pipe		9,037 [r]	4,456 [r]	9,940 [r]	8,842 [r]	8,767
Wire		63,125 [r]	107,246 [r]	132,426 [r]	139,487	187,841
Antimony:						
Antimony oxide		495	652	826	668	560
Unwrought		2,165	1,958	2,267	1,579	1,691
Bismuth, refined	kilograms	294 [r]	953 [r]	12,004 [r]	18,038 [r]	203
Chromium, ores and concentrate		45,306	5,611	3,608	1,890 [r]	33,582
Cobalt:						
Hydroxide	kilograms	--	23,060	12,160	7,308 [r]	49,565
Mattes, lump, powder		41	153	937	2,193	2,365
Oxide		18	21	45	13	19
Copper:						
Metal and alloys, unwrought		47,048	91,935 [r]	158,832 [r]	63,594 [r]	53,831
Mattes		6,274	12,419	12,902	9,695	9,814
Ores and concentrate		286,749	76,045	42,307	30,527	32,573
Plates, sheets and strip		4,467	3,264 [r]	5,788	10,892	9,537
Powder		1,015	739	382	185	135
Scrap		10,672 [r]	7,044 [r]	15,785 [r]	17,511 [r]	16,802
Tube and pipe		7,490 [r]	8,385 [r]	11,558 [r]	12,368 [r]	12,147
Unrefined anode		10	1,091	5,185	1	6
Ferroalloys:						
Ferrochromium		817,059 [r]	692,874	765,936	698,752	827,244
Ferromanganese		267,285	281,020	592,547	569,634	618,628
Ferromolybdenum		157	224	385	703	839
Ferronickel	kilograms	329 [r]	76,516 [r]	1,625 [r]	738 [r]	23,077,801
Ferroniobium		66	11	21	19	5
Ferrosilicon		20,434 [r]	10,561	17,472 [r]	28,967	32,043
Ferrotungsten and ferrosilicotungsten	kilograms	675 [r]	1,008 [r]	1,283 [r]	3,100	820
Ferrovanadium		551	303	173	116	33
Silicochromium	kilograms	3,150	15,040	38,768 [r]	1,059,480	48,400
Silicomanganese		704,397	694,429	1,023,275	1,232,414	1,150,908
Gold, unwrought	kilograms	2,076 [r]	4,184 [r]	105 [r]	1,352 [r]	1,288
Iron and steel:						
Bars and rods, hot-rolled		730,257 [r]	848,760 [r]	1,979,633 [r]	823,351 [r]	422,847
Direct-reduced iron		871,961	618,530	666,888 [r]	1,028,026	1,342,348
Pig iron		277,302	428,015	904,231	515,225	426,494
Scrap		10,170 [r]	24,844	13,985	12,733	12,366
Shapes and sections		137,589 [r]	139,163 [r]	195,863 [r]	227,120 [r]	100,470
Tube and pipe		1,263,000 [r]	1,038,115 [r]	1,237,836 [r]	1,354,889 [r]	1,567,567
Wire		124,154 [r]	117,504 [r]	171,190 [r]	165,336 [r]	150,594
Iron ore		31,210,609	52,200,107	35,682,705	16,015,199	43,817,957
Lead:						
Ores and concentrate		4	8	8	143 [r]	58
Unwrought		181,355	166,960 [r]	197,826 [r]	193,644	306,656

See footnotes at end of table.

TABLE 3—Continued
INDIA: EXPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS—Continued						
Rare earth compounds, gross weight:						
Cerium oxide	kilograms	386,234 r	22,702 r	135 r	140	716
Cerium compounds	do.	781,811 r	1,811,536 r	2,632,389 r	3,020,238 r	4,250,032
Other oxide	do.	706,326 r	159,104 r	14 r	26 r	22
Other compounds	do.	347,040	906,568 r	1,132,748 r	1,203,326 r	1,373,518
Rare-earth metals (scandium and yttrium)	do.	8,015 r	1,826 r	4,345 r	11,020	5,001
Manganese, ores and concentrate		55,741 r	75,625 r	123,208 r	165 r	1,676
Molybdenum, ores and concentrate	kilograms	3,005 r	24,008 r	22,137 r	350	136,000
Nickel:						
Ores and concentrate		39	--	20	--	--
Powder		66	18	29	45	--
Plates, sheets, strip and foil		167	121 r	261	155	8
Scrap		1,325 r	554 r	1,694 r	1,677 r	2,119
Unwrought		45	41	70	3,622	474
Platinum-group metals, refined:						
Palladium	kilograms	347 r	40	55 r	21 r	173
Platinum	do.	201 r	32 r	105 r	130	107
Rhodium	do.	6 r	14 r	79 r	7 r	18
Selenium		25	19	61	117	234
Silver:						
Powder	kilograms	90	999 r	2,210	2,136 r	1,839
Semimanufactures	do.	33,989 r	216,808 r	434,654 r	92,244 r	165,869
Unwrought	do.	78 r	60 r	45,311 r	354 r	2,721
Tin:						
Scrap	do.	3,542 r	3,663 r	834 r	157 r	2,000
Semimanufactures		122	161	237	156	168
Unwrought		542	428	469	295 r	441
Titanium:						
Ores and concentrate		233,795	254,740	209,218	163,260	191,482
Oxide		41,205	29,338	44,355 r	38,500	19,544
Scrap		199	151	27	65	--
Unwrought		7	3	1 r	3	2
Zinc:						
Ores and concentrate		501	450	822	35,457	29,027
Oxide and peroxide		13,804	24,209	25,506	21,079	18,747
Plates, sheets, strip and foil		3,113	3,831	3,653	3,463 r	5,999
Powder		249	101	527	602	351
Scrap	kilograms	130,457 r	80,378 r	5,229 r	92 r	3,427
Unwrought		186,773 r	288,028	255,316	340,306 r	273,125
Zirconium, ores and concentrate	kilograms	10,350	605 r	500	--	185,896
INDUSTRIAL MINERALS						
Arsenic		18	29	27	29	26
Barite		1,902,980 r	1,459,810	1,462,128 r	2,491,368	2,396,237
Bromine		5,929	6,863	12,057	13,261	7,407
Calcite		36,100 r	25,669 r	26,105 r	26,483	34,198
Cement and clinker		3,126,701 r	2,759,549 r	2,077,850 r	997,506 r	766,385
Clay:						
Bentonite		1,691,280 r	1,513,480 r	1,561,609 r	1,475,878 r	1,560,290
Fire clay		4,244 r	5,792 r	4,582 r	6,949	10,033
Kaolinite		518,811 r	247,315 r	350,670 r	476,447 r	586,383
Vermiculite		647	834	1,019	1,171	907
Diamond	million carats	49 r	33 r	54 r	45 r	38
Dolomite		87,737 r	86,532 r	101,723 r	89,392 r	74,999
Feldspar		635,650 r	684,594	730,801	697,419	860,367

See footnotes at end of table.

TABLE 3—Continued
INDIA: EXPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity	2019	2020	2021	2022	2023
INDUSTRIAL MINERALS—Continued					
Granite	9,802,118 r	10,747,642 r	11,819,859 r	9,533,926 r	8,636,008
Graphite, natural	459	782 r	765	2,066 r	984
Gypsum	163,470 r	162,593 r	217,234 r	208,402 r	113,498
Iodine	302	149	115	127	103
Iron oxide pigments, natural, ocher	1,361 r	3,016 r	3,558 r	2,317	2,150
Limestone	3,383,310 r	1,599,832 r	2,935,502 r	2,483,487 r	994,135
Lithium:					
Carbonates	419	311	462	490	422
Oxide and hydroxide	149	171	400	171	138
Magnesite, crude	86	174	384	402	944
Nitrogen, ammonia	18,633	18,605 r	18,718 r	16,271 r	19,309
Quartzite	163,532	103,439	84,547	143,262	98,986
Salt, unspecified	13,010,314 r	10,048,321 r	8,512,166 r	13,254,188 r	13,710,598
Sulfur	674,982 r	840,294 r	990,059 r	1,507,007 r	1,402,667
Talc and pyrophyllite	254,560 r	242,700 r	333,857 r	352,143 r	286,493
Wollastonite	14,848	13,219	12,977	12,365	12,610
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Anthracite	11,716 r	9,586 r	1,958 r	4,494 r	21,503
Bituminous	77 r	359 r	915 r	139,411 r	232,584
Other, including briquettes, ovoids, and similar solid fuels	871,342 r	931,236 r	830,948 r	1,088,578 r	1,219,223
Coke, semicoke	94,505 r	85,134 r	1,263,205 r	541,435 r	122,765
Liquefied natural gas	477,263 r	454,840 r	531,446 r	539,120 r	517,238
Petroleum, refinery products million 42-gallon barrels	545 r	453 r	664 r	713 r	779

eEstimated. rRevised. do. Ditto. -- Zero.

Sources: Directorate General of Commercial Intelligence and Statistics, 2024, Trade statistics—Export import data bank (annual); Global Trade Tracker, 2024.

TABLE 4
INDIA: IMPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS						
Aluminum:						
Alumina		2,375,712 r	1,927,772	2,522,486 r	2,508,766 r	2,484,390
Bars and rods		42,378 r	32,719 r	45,104 r	44,238 r	45,644
Bauxite		2,079,402 r	2,991,280 r	3,090,208 r	3,454,759 r	3,781,394
Foil		187,299 r	152,076	168,337 r	194,329 r	195,392
Metal and alloys, unwrought		267,068 r	240,872	240,726 r	257,896 r	361,215
Plates, sheets and strip		173,807 r	100,009 r	158,344 r	187,613 r	162,004
Powder		4,353	3,913	1,973	2,291	2,775
Scrap		1,349,514 r	1,285,965 r	1,647,562 r	1,753,798 r	1,830,332
Tube and pipe		9,920 r	9,315 r	12,795 r	13,557 r	14,499
Wire		73,486	41,272 r	31,701	6,507	18,154
Antimony:						
Antimony oxide		4,097	3,786 r	4,561	4,934	5,054
Ore and concentrate		7,496	5,761	5,079	6,456	5,219
Unwrought		1,445	1,143	1,309	1,203	1,590
Bismuth, refined	kilograms	223,873 r	261,053 r	249,695 r	381,564 r	334,637
Chromium, ores and concentrate		133,877 r	144,000 r	252,782 r	141,463 r	124,873
Cobalt:						
Hydroxide		39	58	25	549	207
Mattes, lump, powder		1,160	620	903 r	838	1,027
Oxide		232	181	212	182	374
Copper:						
Metal and alloys, unwrought		144,304 r	154,350	140,696 r	174,506 r	366,438
Mattes		0	3	78	1,014	1,060
Ores and concentrate		772,073	544,478	862,741 r	1,129,405	1,010,704
Plates, sheets and strip		21,541	16,186	19,371 r	20,131 r	19,691
Powder		2,121	1,995	1,184	1,036	1,401
Scrap		249,433 r	228,351 r	249,758 r	274,883 r	310,654
Tube and pipe		67,611 r	50,949 r	65,330 r	87,067 r	86,476
Unrefined anodes		124,641	159,675	186,519	223,595	231,863
Ferroalloys:						
Ferrochromium		28,485	38,192	44,753	32,756	30,565
Ferromanganese		113,879	64,163	49,309 r	36,840 r	16,833
Ferromolybdenum		2,391	2,847	2,715	4,157	3,249
Ferronickel		123,362	39,228	216,279 r	127,589	100,050
Ferroniobium		2,897	2,426	4,147	4,987	5,145
Ferrosilicon		220,776	191,883	205,884	222,198	179,185
Ferrotungsten and ferrosilicotungsten		5	10	5	19	64
Ferrovanadium		443	439	970	966 r	1,419
Silicochromium		64	--	100	20	2,629
Silicomanganese		6,785	6,862	24,050	32,046	31,964
Gold:						
Ores and concentrate	kilograms	267 r	202 r	633,149 r	1,477,544 r	3,913,276
Semimanufactures	do.	1,923 r	1,881	9,596 r	6,568 r	2,735
Unwrought	do.	834,153 r	428,226 r	1,058,983 r	706,816 r	741,068
Iron and steel:						
Bars and rods, hot-rolled		351,802 r	152,865 r	114,727 r	79,959 r	177,986
Direct-reduced iron		63,609	57,076	49,949 r	100,342	617,543
Pig iron		19,907	10,476	16,064	95,447	340,753
Scrap		7,053,393 r	5,477,475 r	5,132,847 r	8,375,943 r	11,759,733
Shapes and sections		48,226	36,525 r	20,181	14,064 r	18,107
Tube and pipe		924,477 r	582,901 r	654,840 r	573,531 r	759,512
Wire		246,926 r	199,436	251,801 r	254,434 r	301,412
Iron ore		2,129,006 r	778,382 r	5,306,854 r	2,103,607 r	4,703,035

See footnotes at end of table.

TABLE 4—Continued
INDIA: IMPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
METALS—Continued						
Lead:						
Ores and concentrate		2,520	5,866	5,507	5,576	4,418
Unwrought		233,935	246,380	231,758	257,916	350,495
Manganese, ores and concentrate		2,861,107 r	4,872,829 r	5,969,658 r	5,172,631 r	5,535,305
Molybdenum, ores and concentrate		8,376	7,948	28,793 r	9,873	13,420
Nickel:						
Ores and concentrate	kilograms	296 r	36,959 r	106,417 r	20,000	--
Powder		299	287	487	840	635
Plates, sheets, strip and foil		3,641	4,093	3,792 r	4,028 r	5,018
Scrap		3,496 r	3,126 r	2,978 r	3,066 r	4,223
Unwrought		32,808	30,162	37,396 r	33,610	32,300
Rare earth compounds, gross weight:						
Cerium oxide		104	148	163	180	217
Cerium compounds		317	471	546	525	468
Other oxide		11	3	25	16	21
Other compounds		845	476	713	383	384
Rare-earth metals (scandium and yttrium)		556	419	808	673	1,085
Platinum-group metals, refined:						
Palladium	kilograms	955 r	930 r	459 r	543 r	1,110
Platinum	do.	1,722 r	3,073 r	2,650 r	2,890	3,167
Rhodium	do.	139 r	135 r	76 r	93 r	37
Selenium	do.	467,850	690,618 r	595,816 r	376,302 r	516,161
Silver:						
Powder	do.	5,081 r	6,240	30,173 r	23,758 r	50,984
Semimanufactures	do.	401,412 r	1,532,708 r	2,550,312 r	9,331,029 r	2,897,678
Unwrought	do.	5,567,865 r	686,122 r	264,390 r	229,275 r	677,203
Tin:						
Semimanufactures		244	226	284 r	363	428
Unwrought		10,760	9,861	10,765	12,719	12,496
Titanium:						
Ores and concentrate		146,744	87,525	115,131	63,772 r	73,268
Oxide		16,463	12,847	14,614	19,437 r	17,199
Scrap		4,834	5,282	5,695	5,548	6,284
Unwrought		432	625	781	713	910
Zinc:						
Ores and concentrate		700	90	1,187	1,289	455
Oxide and peroxide		5,742 r	5,215	5,658 r	4,652	5,035
Plates, sheets, strip and foil		1,591 r	1,222	1,380	1,503	1,521
Powder		2,209	1,658	2,165	2,165 r	2,237
Scrap		86,695	46,041	74,207	94,474	68,300
Unwrought		159,570	137,600 r	149,780 r	161,486	230,324
Zirconium, ores and concentrate		57,141	55,545	102,943	83,499	78,523
INDUSTRIAL MINERALS						
Arsenic		771	620	767	1,110	820
Barite		14,654	10,988	15,278	15,901 r	16,930
Bromine		6,680	10,047	11,432	7,926	9,770
Calcite		73,657	64,304	47,514	47,389	90,608
Cement and clinker		2,040,738 r	1,852,065 r	2,396,797 r	1,840,140 r	2,081,916
Clay:						
Bentonite		70,975 r	75,544	132,819 r	127,264 r	131,742
Fire clay		2,345	2,090	861	1,438	280
Kaolinite		247,988 r	216,332	243,852	214,079 r	186,532
Vermiculite		323	618	970	2,098	1,010
Diamond	million carats	165 r	118 r	173 r	143 r	153

See footnotes at end of table.

TABLE 4—Continued
INDIA: IMPORTS OF SELECTED MINERAL COMMODITIES

(Metric tons, gross weight, unless otherwise specified)

Commodity		2019	2020	2021	2022	2023
INDUSTRIAL MINERALS—Continued						
Dolomite		5,568,232 r	3,890,711	4,964,913	5,539,240	5,988,556
Feldspar		257,605 r	219,780	283,349 r	287,067	279,666
Granite		81,624	35,688	32,630	36,143 r	39,016
Graphite, natural		45,003	38,649	49,154	52,170	46,657
Gypsum		5,497,077	5,187,762	5,717,141 r	6,183,660 r	7,046,967
Iodine		4,247	3,202	3,382	3,751	3,294
Limestone		25,284,547 r	23,016,719 r	25,728,181 r	28,164,717 r	32,852,792
Lithium:						
Carbonates		1,298	1,090	1,124	1,211	1,180
Oxide and hydroxide		1,928	1,856	2,757	1,331	1,055
Magnesite, crude		74,609	54,481	83,314	68,103	24,850
Nitrogen, ammonia		2,691,033	2,437,435	2,437,844	2,235,275	2,336,715
Quartzite		434	516	5,792	4,527	21,562
Salt, unspecified		63,713 r	114,419 r	84,935 r	94,825 r	132,494
Sulfur		1,381,648	1,337,519	1,777,095 r	1,542,299	1,630,208
Talc and pyrophyllite		6,533	5,657 r	9,885 r	9,378 r	9,444
Wollastonite		23,088	21,475	30,933	38,070	60,076
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Anthracite		1,898,788 r	1,994,224 r	2,082,646 r	2,194,348	2,204,491
Bituminous		29,001,616 r	19,001,197 r	11,571,430 r	4,993,017	4,949,324
Other, including briquettes, ovoids, and similar solid fuels	thousand metric tons	218,300 r	197,100 r	198,018 r	226,874 r	244,883
Coke, semicoke		3,250,160 r	2,568,228 r	2,377,679 r	3,234,617 r	3,841,409
Liquefied natural gas		38,153,771 r	42,210,743 r	39,517,860 r	39,252,909 r	40,188,524
Petroleum:						
Crude	million 42-gallon barrels	1,657 r	1,483 r	1,591 r	1,832 r	1,810
Refinery products	do.	87 r	121 r	128 r	165 r	154
Uranium, ores and concentrate		2,973	2,382	--	--	368

rRevised. do. Ditto. -- Zero.

Sources: Directorate General of Commercial Intelligence and Statistics, 2024, Trade statistics—Export import data bank (annual); Global Trade Tracker, 2024.

TABLE 5

INDIA: ESTIMATED RESERVES OF MAJOR MINERAL COMMODITIES IN 2020[1, 2]

(Thousand metric tons unless otherwise specified)

Commodity		Reserves
Antimony:		
Crude ore	metric tons	19,000
Sb content	do.	250
Apatite		30
Barite (all grades)		51,000
Bauxite		650,000
Calcite		3,400
Chalk		5,100
Chromium ore (all grades)		79,000
Clay:		
Ball clay		50,000
Bentonite		15,000
Fireclay		27,000
Fuller's earth		3,900
Kaolin		230,000
Coal, lignite		150,000,000
Copper:		
Crude ore		164,000
Cu content		2,200
Corundum	metric tons	200
Diamond	thousand carats	850
Diaspore		7,900
Dolomite		680,000
Dunite		13,000
Feldspar (all grades)		320,000
Fluorite		400
Garnet		8,600
Gold:		
Crude ore		24,000
Au content	kilograms	93,000
Graphite (all grades)		8,600
Gypsum		37,000
Iron ore:		
Crude ore		6,400,000
Fe content		4,000,000
Iron oxide pigmetites, ochre		37,000
Kyanite and related minerals:		
Kyanite		850
Sillimanite		6,500
Lead and zinc ore		100,000
Lead, Pb content		2,000
Limestone		19,000,000
Magnesite		66,000
Manganese ore (all grades)		75,000
Mica		114
Monazite		150
Phosphate rock		31,000
Quartzite		83,000
Silica		648,000
Salt (rock)		3,900
Sillimanite		8,300

See footnotes at end of table.

TABLE 5—Continued
INDIA: ESTIMATED RESERVES OF MAJOR MINERAL COMMODITIES IN 2020[1, 2]

(Thousand metric tons unless otherwise specified)

Commodity		Reserves
Silver:		
Crude ore		170,000
Ag content	metric tons	8,000
Talc		106,000
Tin, ore		2
Titanium minerals:		
Ilmenite		15,000
Rutile		700
Vermiculite		1,600
Wollastonite		2,700
Zinc, Zn content		7,000
Zircon		670

[1]The total reserves of major mineral commodities includes proven and probable reserves. Values were reported in 2023 for 2020, which is the latest year for which data were available.
[2]Data have been rounded to no more than three significant digits.

Sources: Indian Bureau of Mines, 2022, Statistical profiles of minerals; Indian Bureau of Mines, 2023, National mineral inventory.