

# 2023 Minerals Yearbook

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**INDONESIA [ADVANCE RELEASE]**

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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 INDONESIA

By Jaewon Chung

Globally, Indonesia was one of the major producers of metallic ores and coal. In 2023, Indonesia was the world's first-ranked producer of nickel ore, accounting for 54% of global production; the second-ranked producer of mined tin, about 23%; the third-ranked producer of coal, 9%; the fourth-ranked producer of zeolites, 11%; and the fifth-ranked producer of bauxite (excluding the United States), 7% (estimated). Indonesia was also the second-ranked producer of cobalt, accounting for 8% of world production and 5% of world reserves. Other major mineral commodities produced in the country included cement, copper, gold, iodine, nitrogen, and silica sand (Ewing, 2024, 2025; U.S. Energy Information Administration, 2024; Friedline, 2025; Merrill, 2025; Stewart, 2025; Williams, 2025).

The Government continued to encourage mining companies to build domestic plants and to produce value-added mineral products rather than export metallic ores. In 2023, the Government implemented a ban on bauxite exports as a means of promoting smelter construction. It also designated 47 minerals as critical minerals to secure their supply (Ministry of Energy and Mineral Resources, 2023; Bill Sullivan, Senior foreign counsel, Christian Teo and Partners Law Office, written commun., July 3, 2023).

## Minerals in the National Economy

In 2023, Indonesia's real gross domestic product (GDP) growth was 5.0%; the nominal GDP was \$1.37 trillion. The mining and quarrying sector accounted for about 11% of the GDP in 2023 compared with 12% in 2022. The contribution of base-metals manufacturing activities to the GDP increased to 0.96% in 2023 from 0.86% in 2022. Employment in the mining and quarrying sector was about 1.66 million people in 2023, which represented 1.2% of the country's total employment (Badan Pusat Statistik, 2024, p. 135, 137, 724, 725; World Bank, The, 2024).

## Government Policies and Programs

Law No. 4/2009 on Mineral and Coal Mining included provisions that exporting unprocessed minerals would be prohibited starting in January 2014. Mining companies, however, were exempted from the ban through January 11, 2017, under the condition that they were able to meet the minimum domestic refining requirements, pay export duties, and commit to building local smelters. On January 11, 2017, the Government extended this exemption for 5 years.

In 2020, the Ministry of Energy and Mineral Resources (MEMR) postponed the export ban to June 10, 2023. However, a nickel-ore export ban came into effect on January 1, 2020, to secure the supply of unprocessed nickel for domestic production of nickel products and to be the global supplier of electric-vehicle (EV) batteries.

Starting in June 2023, the Government imposed an export ban on bauxite as announced. Meanwhile, the Government allowed for several companies to export raw minerals, such as copper, iron ore, lead-zinc, and anode mud from copper concentrate through May 2024. The exemption was granted to companies that had completed more than 50% of their smelter construction (Isaac, 2023b).

To secure raw material supply for domestic strategic industries, the MEMR released a list of 47 critical minerals in 2023. The MEMR defined a critical mineral as a raw material that (1) is used in strategic industries; (2) is critical to the national economy, defense, and security; (3) is prone to a high supply risk; and (4) does not have a suitable substitute. The list included aluminum, cobalt, graphite, lithium, nickel, silica, tin, and zirconium (Ministry of Energy and Mineral Resources, 2023).

## Production

In 2023, notable production increases included that of nickel contained in mixed hydroxide precipitate (MHP), which increased by 100% (estimated); cobalt, by 98% (estimated); silicomanganese, by 92%; aluminum, by 61% (estimated); lignite coal, by 35%; mined nickel, by 29%; mined lead, by 28% (estimated); nickel matte, by 26% (estimated); nickel pig iron (NPI), by 22% (estimated); mined tin, smelted tin, and zeolites, by 20% (estimated) each; subbituminous coal, by 14%; and pig iron, by 14% (estimated). Notable production decreases included that of mined manganese, by 71%; mined titanium, by 48% (estimated); primary refined copper, by 22%; smelted copper, by 21%; bituminous coal, by 16%; and ferronickel, by 10%. Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Directorate General of Mineral and Coal under the MEMR manages the country's mineral resources by formulating and implementing policy on mining activities. The state-owned holding company Mining Industry Indonesia (MIND ID) consisted of five mining and mineral-processing companies that produced particular mineral commodities: PT Aneka Tambang Tbk (PT Antam), bauxite and nickel; PT Freeport Indonesia Co. (PT-FI), copper; PT Indonesia Asahan Aluminium (PT Inalum), aluminum; PT Tambang Batubara Bukit Asam Tbk (PT Bukit Asam), coal; and PT Timah Tbk, tin. The state-owned Indonesia Battery Corp. (IBC), an EV battery holding company, consisted of four state-owned companies: MIND ID, PT Antam, PT Pertamina, and PT Perusahaan Listrik Negara. The major state-owned steel producer was PT Krakatau Steel Tbk. Wholly or partially foreign-owned companies included PT-FI, PT Vale Indonesia Tbk, and PT Tsingshan Steel Indonesia. Table 2 is a list of major mineral industry facilities.

## Mineral Trade

Indonesia's total exports of goods in 2023 were valued at \$259 billion. The country's exports of mineral products were valued at \$69 billion (or 27% of total exports), and those of base metals and articles thereof were valued at \$41 billion (16%). The leading mineral commodity exports were coal and ferronickel (or NPI), which accounted for 13% and 6% of total exports, respectively (Badan Pusat Statistik, 2024, p. 635; Zen Innovations AG, 2024).

Following the ban of nickel-ore exports in 2020, exports of ferronickel (or NPI) continued to increase to \$15 billion in 2023 from \$5 billion in 2020, and exports of intermediate products of nickel metallurgy increased to nearly \$7 billion in 2023 from \$800 million in 2020. Because of the bauxite export ban that started in June 2023, exports of bauxite decreased to \$68 million in 2023 from \$623 million in 2022 (Zen Innovations AG, 2024).

Indonesia's total imports of goods in 2023 were valued at \$222 billion. Imports of mineral products were valued at \$43 billion (or 19% of total imports), and those of base metals and articles thereof were valued at \$21 billion (10%). The leading mineral commodity import was crude petroleum, which accounted for 9% of total imports (Zen Innovations AG, 2024).

## Commodity Review

### Metals

**Bauxite, Alumina, and Aluminum.**—Indonesia produced an estimated 30 million metric tons (Mt) of bauxite in 2023, of which the country exported about 2 Mt, a decrease from 18 Mt in 2022. The decline in exports was attributed to the export ban imposed in June 2023. China was the sole destination of the exports (table 1; Zen Innovations AG, 2024).

The MEMR had expected that all the bauxite downstream projects would have been completed before the Government's ban on bauxite exports in 2023; however, a total of eight alumina refineries and aluminum smelters were still under construction. The slow progress was due in part to the high cost of construction. The Association of Indonesian Bauxite and Iron Ore Business estimated the average construction cost of an aluminum smelter to be at about \$1.2 billion, and it would exceed that of a nickel smelter (Razak, 2023).

**Cobalt.**—Indonesia's cobalt production in 2023 was estimated to have doubled to 19,000 metric tons (t) compared with that in 2022. The increased production was attributed facilities ramping up to full capacity in recent years. These facilities produced MHP by using the high-pressure acid leaching (HPAL) process to recover cobalt and nickel from limonite, a low-grade nickel ore (tables 1, 2; Cobalt Institute, 2024, p. 28, 29).

**Copper and Gold.**—PT-FI operated one of the world's top-producing copper-gold mines at the Grasberg minerals district in Papua Province. PT-FI's copper and gold production in 2023 continued to increase to 753,000 t and 62 t, respectively, from 367,000 t and 26 t in 2020. The continued increase in copper and gold output was a result of the rampup of production at underground mining sites and increased milling rates for ore (Freeport-McMoRan Inc., 2024, p. 27, 43).

In 2023, PT-FI continued to build the Manyar copper smelter in Gresik, East Java, and PT Amman Mineral Industri Tbk continued to build its copper smelter in West Sumbawa Regency, West Nusa Tenggara. Because the construction progress of both smelters had exceeded 50% before the Government's export ban on raw minerals in June 2023, PT-FI and PT Amman Mineral Nusa Tenggara were granted licenses to continue exporting copper concentrate and anode mud through May 2024. As of December 2023, PT-FI had completed 90% of the construction of the Manyar smelter and expected it to be completed in May 2024. The smelter was designed to process 1.7 million metric tons per year (Mt/yr) of copper concentrate. Construction of the smelter had an estimated cost of \$3.0 billion (Isaac, 2023b; Freeport-McMoRan Inc., 2024, p. 44, 97).

**Nickel.**—Indonesia's mined nickel production in 2023 increased by 29% to about 2.0 Mt (nickel content). The increased production in mined nickel was due to the growing global demand for EV batteries. The country's NPI production also increased by an estimated 22% to 9.9 Mt (gross weight) owing to the increased capacities driven by the Government's downstream program (table 1; Muliawati, 2024a).

In May, PT Halmahera Persada Lygend completed the construction of its nickel sulfate plant in Obi Island, South Halmahera. It was the country's first and the world's largest nickel sulfate plant. The production capacity was 240,000 metric tons per year (t/yr) of nickel sulfate containing 54,000 t/yr of nickel, which is the main component in the precursor of EV battery cathodes (PT Trimegah Bangun Persada Tbk, 2023; Muliawati, 2024b).

In 2023, the MEMR was planning new policy to limit the construction of Class II-pyrometallurgical nickel smelters that process high-grade nickel ore (saprolite) and produce ferronickel and NPI. The purpose of the policy was to slow down the rapid depletion of the country's nickel ore. As of 2023, the country had 44 Class II-nickel smelters consuming 210 Mt/yr of saprolite. Moreover, there were 25 smelters under construction and 28 smelters in the planning phase, which would consume an additional 200 Mt/yr of saprolite. There were also three Class I-hydrometallurgical nickel plants in operation employing the HPAL process, which consumed almost 24 Mt/yr of limonite. There were 6 HPAL plants under construction and another 10 plants in the planning phase, which were expected to consume a total of 80 Mt/yr of limonite (Isaac, 2023a).

**Tin.**—The state-owned company PT Timah was the world's fifth-ranked tin refiner and Indonesia's first-ranked tin miner. The company produced about 14,900 t of mined tin (tin content) from three islands (the Bangka, Belitung, and Kundur Islands) and 15,340 t of refined tin in 2023, which were decreases of 26% and 23% compared with production in 2022, respectively. The decline in mined tin production was due to adverse weather and deep-seated reserves at offshore mining sites, decreased onshore mining areas, and pervasive unauthorized mining activities in the company's onshore mining sites. The decrease in refined tin production was due to the company's reduced supply of mined tin (PT Timah Tbk, 2024, p. 18, 139, 150, 153).

**Silica Sand.**—In 2023, the Government was planning to ban the export of silica sand to boost domestic processing of silica sand into the value-added products for solar panel cells and EV batteries. In July, the Government signed an \$11.5 billion agreement with the world's leading solar glass manufacturer, Xinyi Group of China, to build a facility on Rempang Island. The facility would process silica sand and other raw materials to produce glasses and solar panels, 95% of which would be exported. Indonesia's silica sand production during the year was estimated to be about 5 Mt, which represented about 1% of world output (table 1; Ghifari, 2024; Setiawan, 2024; Goodin, 2025).

## Outlook

Indonesia is likely to impose bans on exports of copper, silica sand, and other raw materials in the short and medium terms, following the earlier nickel ore and bauxite export bans. Because of these measures, the country's exports of raw materials will likely continue to decrease, whereas the domestic output of processed materials is expected to increase. For example, once the current bauxite downstream projects are completed, the country's alumina and aluminum production will likely increase. The Government may also limit the construction of new ferronickel or NPI smelters to preserve the country's nickel ore and prevent the future oversupply of Class II nickel. As of 2023, Indonesia remained a producer of aluminum, cobalt, copper, nickel, and tin used in manufacturing EV batteries, which could give the country a significant advantage in developing its EV battery industry. Through IBC, the Government is expected to fully take the advantage and seek to attract foreign investment in the country's EV battery industry.

## References

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TABLE 1  
INDONESIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>		2019	2020	2021	2022	2023
METALS						
Aluminum:						
Bauxite, wet basis	thousand metric tons	16,593	25,860	25,780	30,360	30,000 <sup>e</sup>
Alumina		1,148,422	1,162,139	1,156,039	1,200,000 <sup>e</sup>	1,200,000 <sup>e</sup>
Metal, primary		249,532	245,000	243,000	223,800	360,000 <sup>e</sup>
Cobalt, mine, Co content <sup>e, 3</sup>		1,100	1,100	2,700	9,600	19,000
Copper:						
Mine, Cu content:						
Concentrates		334,000	500,000	712,000	921,000	894,000
Solvent extraction <sup>4</sup>		16,777	5,377	19,045	19,551	12,706
Total		351,000	505,000	731,000	941,000	907,000
Smelter, primary		246,100 <sup>r</sup>	276,900 <sup>r</sup>	280,400	316,700 <sup>r</sup>	251,300
Refinery, primary:						
Electrowon		16,777	5,377	19,045	19,551	12,706
Other		163,427	263,208	270,497	268,400 <sup>r</sup>	212,000
Total		180,000	269,000	290,000	288,000 <sup>r</sup>	225,000
Ferroalloys:						
Ferrochromium		190,000	230,000	252,000	275,000 <sup>r</sup>	300,000
Ferronickel <sup>e</sup>		129,000	130,000	129,000	122,000	110,000
Nickel pig iron <sup>e</sup>		3,200,000	4,300,000	6,100,000	8,100,000	9,900,000
Silicomanganese		22,000	61,000	33,000	24,000	46,000
Gold, mine, Au content	kilograms	108,977	65,900	79,280	105,460	100,000 <sup>e</sup>
Iron ore, mine, iron sand, dry basis:						
Gross weight	thousand metric tons	3,450	3,620	2,980	3,480	3,500 <sup>e</sup>
Fe content	do.	1,730	1,800	1,490	1,740	1,750 <sup>e</sup>
Iron and steel:						
Direct-reduced iron	do.	120	31	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>e</sup>
Pig iron	do.	2,900	3,000	3,400	3,500 <sup>e</sup>	4,000 <sup>e</sup>
Steel:						
Raw steel	do.	8,565	12,871	14,300	15,568 <sup>r</sup>	16,800 <sup>e</sup>
Products, semimanufactured, rolled	do.	10,939	13,141	14,240	14,000 <sup>e</sup>	14,000 <sup>e</sup>
Lead: <sup>e</sup>						
Mine, Pb content		11,000	8,000	8,000	5,000	6,400
Refinery, secondary		54,000	53,000	54,000	55,000	58,000
Manganese, mine, concentrate:						
Gross weight		--	158,000	19,000	138,000	41,000
Mn content		--	55,000	6,000	48,000	14,000
Nickel, Ni content:						
Mine, laterite ore		853,000	767,000	1,069,000	1,579,000	2,030,000
Intermediate, mixed hydroxide precipitate		--	--	--	90,000 <sup>r, e</sup>	180,000 <sup>e</sup>
Smelter, matte		71,025	72,237	100,000 <sup>e</sup>	210,000 <sup>r, e</sup>	265,000 <sup>e</sup>
Ferronickel		25,713	25,970	25,818	24,334	21,473
Nickel pig iron <sup>e</sup>		380,000	600,000	850,000	1,100,000	1,390,000
Silver, mine, Ag content	kilograms	487,000	335,200	397,900	438,290	440,000 <sup>e</sup>
Tin:						
Mine, Sn content		86,947	65,127	52,467	57,735 <sup>r</sup>	69,000 <sup>e</sup>
Smelter, primary		76,389	56,200	34,780	57,140	68,700 <sup>e</sup>
Titanium, mineral concentrates, ilmenite and leucoxene <sup>e</sup>		4,000	3,000	90,000	40,000	21,000
Zinc, mine, Zn content <sup>e</sup>		25,000	20,000	14,000	11,000	10,000
Zirconium, mineral concentrates <sup>e</sup>		73,000	64,000	55,000	97,000	95,000

See footnotes at the end of table.

TABLE 1—Continued  
INDONESIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>	2019	2020	2021	2022	2023
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic thousand metric tons	71,900	62,700 <sup>e</sup>	65,000 <sup>e</sup>	64,790 <sup>r</sup>	66,924
Clay: <sup>e</sup>					
Bentonite	6,000	5,500	5,500	5,500	5,500
Kaolin thousand metric tons	2,700	1,700	1,600	990 <sup>r</sup>	990
Feldspar <sup>e</sup> do.	470	280	308	321 <sup>r</sup>	320
Iodine	33	37	36	36 <sup>r</sup>	33
Nitrogen, ammonia, N content thousand metric tons	6,100	5,900	6,000	6,000	5,800
Sand and gravel, industrial, silica <sup>e</sup> do.	3,500	3,000 <sup>r</sup>	3,200 <sup>r</sup>	4,900 <sup>r</sup>	5,000
Stone, sand and gravel, construction: <sup>e</sup>					
Gravel do.	27,000	24,000	26,000	24,000 <sup>r</sup>	25,000
Stone:					
Crushed, limestone do.	41,000	14,000	10,000	12,000 <sup>r</sup>	12,000
Size and shape unspecified, marble do.	321	481	941	183 <sup>r</sup>	200
Zeolites <sup>e</sup> do.	130	130	130	100	120
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal:					
Bituminous thousand metric tons	148,270	127,744	139,133	102,365 <sup>r</sup>	86,032
Lignite do.	124,962	118,108	128,638	114,858 <sup>r</sup>	155,033
Metallurgical do.	1,870	4,000	4,357	6,000 <sup>r</sup>	6,078
Subbituminous do.	341,057	313,876	341,862	470,209 <sup>r</sup>	534,116
Total do.	616,000	564,000	614,000	693,000 <sup>r</sup>	781,000
Natural gas million cubic meters	67,600	64,700 <sup>r</sup>	64,400 <sup>r</sup>	62,800 <sup>r</sup>	64,300
Petroleum:					
Crude, including condensate thousand 42-gallon barrels	272,000 <sup>r</sup>	259,000 <sup>r</sup>	240,000 <sup>r</sup>	224,000 <sup>r</sup>	221,000
Refinery, throughput do.	367,000 <sup>r</sup>	335,000 <sup>r</sup>	297,000 <sup>r</sup>	314,000 <sup>r</sup>	323,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through December 3, 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.

<sup>2</sup>In addition to the commodities listed, dolomite, gold (refined), gypsum, lead (primary refined), liquefied natural gas, coalbed methane, phosphate rock, pumice, salt, sulfur, and zinc (mined) may have been produced, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Estimated from cobalt content of nickel matte and mixed hydroxide precipitate.

<sup>4</sup>The copper content of solvent extraction output at the mine level is the same as electrowon refinery output because copper produced in the solvent extraction and electrowinning process is typically reported only at the refinery level.

TABLE 2  
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2023

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>c</sup>
<b>Aluminum:</b>			
Bauxite	PT Aneka Tambang Tbk (PT Antam) [Mining Industry Indonesia (MIND ID) (Government, 100%), 65%, and public, 35%]	Tayan Mine, West Kalimantan	2,000
Do.	PT Cita Mineral Investindo Tbk (PT Harita Jayaraya, 60.64%, and Glencore International Investment, 31.68%)	Mines <sup>1</sup> in Ketapang, West Kalimantan	10,000
Do.	Supreme Global Investment Group	Laman Mine, West Kalimantan	NA
Alumina	PT Bintan Alumina Indonesia	Smelter grade alumina refinery in Bintan	2,000
Do.	PT Indonesia Chemical Alumina (PT Antam Tbk, 100%)	Tayan chemical grade alumina refinery, West Kalimantan	300
Do.	PT Well Harvest Winning (China Hongqiao Group Ltd., 56%; PT Cita Mineral Investindo Tbk, 30%; others, 14%)	Smelter grade alumina refinery in Ketapang, West Kalimantan	2,000
Metal	PT Indonesia Asahan Aluminium (PT Inalum) [Mining Industry Indonesia (Government, 100%), 100%]	Smelter in Kual Tanjun, North Sumatra	360
Cement	PT Indocement Tunggal Prakarsa Tbk (Heidelberg Materials, 61.5%)	Plants at Cirebon and Citeureup, West Java, and at Tarjun, South Kalimantan	25,000
Do.	PT Semen Baturaja (Government, 76.24%, and others, 23.76%)	Plant at Baturaja, Ogan Komering Ulu, South Sumatra	3,850
Do.	PT Semen Bosowa Maros	Plants in Banyuwangi, East Java, and Maros, South Sulawesi	6,000
Do.	PT Semen Indonesia Tbk (Government, 51%, and others, 49%)	Plants at Gresik, East Java; Padang, West Sumatra; and Tonasa, South Sulawesi	34,800
Do.	PT Solusi Bangun Indonesia (PT Semen Indonesia Tbk, 83.5%)	Plants at Besar and Lhok, Aceh	3,000
Do.	do.	Plants at Cilacap, Central Java; Narogong, West Java; and Tuban, East Java	12,500
Clay, kaolin	Multiple mining establishments	Mines in multiple locations	2,700
<b>Coal:</b>			
Metallurgical	PT Asmin Koalindo Tuhup	Mine in Murung Raya, Central Kalimantan	2,000
Subbituminous	Geo Energy Group	SDJ Mine and TBR Mine, South Kalimantan	25,000
Unspecified	PT Adaro Indonesia (New Hope Corp., 50%; PT Asminco Bara Utama, 40%; Mission Energy, 10%)	Balanga, MIP, Paringin, Tutupan, and Wara Mines, South Kalimantan; Lampunut Mine, Central Kalimantan	100,000
Do.	PT Arutmin Indonesia (PT Bumi Resources Tbk, 80%, and Bakrie Group, 20%)	Mines in Mulia, Senakin, and Satui, South Kalimantan; Mine in Asam-Asam, East Kalimantan	26,000
Do.	PT Berau Coal (PT United Tractors, 60%; PT Armadian, 30%; Nissho Iwai, 10%)	Mines in Berau, East Kalimantan	20,000
Do.	PT Borneo Indobara (PT Golden Energy Mines Tbk, 98.1%, and others, 1.9%)	Mines in Angsana, Tanah Bumbu Regenc, South Kalimantan	40,000
Do.	PT Kaltim Prima Coal Co. (PT Bumi Resources Tbk, 51%; Tata Power, 30%; China Investment Corp., 19%)	Mines in Sangatta, East Kutai Regency, East Kalimantan	62,000
Do.	PT Kideco Jaya Agung (PT Indika Energy Tbk, 91%, and Samtan Co. Ltd., 9%)	Mines in Paser, East Kalimantan	35,000

See footnotes at the end of the table.



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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>e</sup>
<b>Coal:—Continued</b>			
Unspecified	PT Tambang Batubara Bukit Asam Tbk [Mining Industry Indonesia (Government, 100%), 65.02%, and public, 34.98%]	Banko Barat Mine, South Sumatra	25,000
Do.	do.	Muara Tiga Besar Mine, South Sumatra	15,000
Do.	do.	Tambang Air Laya Mine, South Sumatra	10,000
Do.	White Energy Co. Ltd., 51%, and PT Bayan Resources Tbk, 49%	Tabang Mine, Kutai Kartanegara, East Kalimantan	40,000
<b>Cobalt, Co content:</b>			
In laterite	PT Vale Indonesia Tbk [Vale Canada Ltd., 44.3%; Mining Industry Indonesia (Government, 100%), 20%; Sumitomo Metal Mining Co. Ltd., 15%; others, 20.7%]	Sorowako Mine, South Sulawesi	3
In matte	do.	Smelter at Sorowako, South Sulawesi	1
In mixed hydroxide precipitate	PT Halmahera Persada Lygend (Harita Group, 63.1%, and Lygend Resources & Technology Co. Ltd., 36.9%)	Plant on Obi Island, South Halmahera	12
Do.	PT Huayue Nickel Cobalt	Plant in Morowali, Central Sulawesi	8
Do.	PT QMB New Energy Materials (GEM Co. Ltd., 63%)	do.	4
<b>Copper:</b>			
Mine, Cu content	PT Amman Mineral Nusa Tenggara (PT Amman Mineral Internasional, 82.2%, and PT Pukuafu Indah, 17.8%)	Batu Hijau Mine, Sumbawa Island, West Nusa Tenggara	150
Do.	PT Batutua Tembaga Raya (Merdeka Copper Gold Group)	Wetar Mine and solvent extraction-electrowinning facility, Maluku	25
Do.	PT Freeport Indonesia Co. [Mining Industry Indonesia (Government, 100%), 51.24%, and Freeport-McMoRan Inc., 48.76%]	Grasberg minerals district, Papua	800
Metal	PT Batutua Tembaga Raya (Merdeka Copper Gold Group)	Smelter and refinery plant in Wetar, Maluku	28
Do.	PT Smelting Co. (Mitsubishi Materials Corp., 60.5%, and PT Freeport Indonesia Co., 39.5%)	Smelter and refinery plant in Gresik, East Java	350
Feldspar	Multiple mining establishments (24)	Mines in multiple locations	2,500
<b>Ferroalloys, gross weight:</b>			
Ferrochromium	Nickel Mines Ltd.	Smelter in Morowali, Central Sulawesi	600
Ferronickel or nickel pig iron	PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Smelter at Pomalaa, Southeast Sulawesi	120
Do.	PT Central Omega Resources Tbk	Smelter in North Morowali, Central Sulawesi	NA
Do.	PT Century Metalindo	Smelter at Pomalaa, Southeast Sulawesi	50
Do.	PT Fajar Bhakti Lintas Nusantara	Smelter in Central Halmahera	NA
Do.	PT Gebe Industry Nickel	Smelter in Gresik, East Java	NA
Do.	PT Gunbuster Nickel Indonesia (Jiangsu Delong Nickel Industry Co. Ltd., 100%)	Smelter in North Morowali, Central Sulawesi	1,800
Do.	PT Halmahera Jaya Feronikel (Harita Group, 100%)	Smelter on Obi Island, South Halmahera	780
Do.	PT Hengjaya Nickel Industry and PT Ranger Nickel Industry (Nickel Industries Ltd., 80%)	Hengjaya Nickel and Ranger Nickel smelters, Morowali, Central Sulawesi	300
Do.	PT Huadi Nickel-Alloy Indonesia	Smelter in Bantaeng, South Sulawesi	350
Do.	PT Growth Java Industry (formerly PT Indoferro)	Smelter in Cilegon, Banten	NA

See footnotes at the end of the table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>e</sup>
Ferrous alloys, gross weight:—Continued				
Ferroalloys or nickel pig iron		PT Indonesia Guan Ching Nickel and Stainless Steel	Smelter in Morowali, Central Sulawesi	NA
Do.		PT Megah Surya Pertiwi (Harita Group, 60%, and Xinxing Ductile Iron Pipes Co. Ltd., 40%)	Smelter on Obi Island, South Halmahera	240
Do.		PT Obsidian Stainless Steel (a joint venture of Xiangyu Group and Jiangsu Delong Nickel Industry Co. Ltd.)	Smelter at Morosi, Konawe, Southeast Sulawesi	2,000
Do.		PT Sulawesi Mining Investment	Smelter in Morowali, Central Sulawesi	250
Do.		PT Tsingshan Steel Indonesia	do.	2,300
Do.		PT Virtue Dragon Nickel Industry (Jiangsu Delong Nickel Industry Co. Ltd., 100%)	Smelter at Morosi, Konawe, Southeast Sulawesi	820
Do.		PT Wanatiara Persada	Smelter on Obi Island, South Halmahera	200
Do.		PT Weda Bay Nickel (Tsingshan Holding Group, 51.3%; Eramet Group, 38.7%; PT Antam Tbk, 10%)	Smelter in Central Halmahera, North Maluku	2,300
Gas:				
Coalbed methane	million cubic meters per day	Ephindo Energy Pvt. Ltd. (PT Pertamina, 52%; Dart Energy Ltd., 24%; others, 24%)	Gasfields in Sangatta, East Kalimantan	14
Natural	do.	ConocoPhillips Co., 54%; Talisman Energy Inc., 36%; PT Pertamina, 10%	Gasfields in Corridor Block, South Sumatra	23
Do.	do.	ExxonMobil Oil Indonesia Inc.	Gasfields in Arun and Aceh, North Sumatra	48
Do.	do.	PT Pertamina (Government, 100%)	Gasfields in Sanga Sanga Block, East Kalimantan	20
Do.	do.	do.	Gasfields in Mahakam Block, East Kalimantan	30
Liquefied		PT Arun LNG Co. Ltd. (Government, 55%; Mobil Oil Co., 30%; Japan Indonesia LNG Co., 15%)	Plant at Blang Lancang, Aceh, North Sumatra	12,500
Do.		PT Badak LNG Co. Ltd. (Government, 55%; HUFFCO Group, 30%; Japan Indonesia LNG Co., 15%)	Plant at Bontang, East Kalimantan	22,500
Gold:				
Mine, Au content	metric tons	Bluenose Gold Corp., 80%, and Zinton Investments Ltd., 20%	Buduk Mine, West Kalimantan	1
Do.	do.	Kingrose Mining Ltd., 85%, and private Indonesian investors, 15%	Way Linggo Mine, Lampung	1
Do.	do.	PT Agincourt Resources	Martabe Mine, South Tapanuli, North Sur	15
Do.	do.	PT Amman Mineral Nusa Tenggara (PT Amman Mineral Internasional, 82.2%, and PT Pukuafu Indah, 17.8%)	Batu Hijau Mine, Sumbawa Island, West Nusa Tenggara	5
Do.	do.	PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Cibalung Mine, Pandeglang, Banten	2
Do.	do.	do.	Pongor Mine, West Java	2
Do.	do.	PT Archi Indonesia Tbk (PT Rajawali Corp., 100%)	Toka Tindung Mine, North Sulawesi	10
Do.	do.	PT Freeport Indonesia Co. [Mining Industry Indonesia (Government, 100%), 51.24%, and Freeport-McMoRan Inc., 48.76%]	Grasberg minerals district, Papua	85
Do.	do.	PT Indotan Halmahera Bangkit, 75%, and PT Antam Tbk, 25%	Gosowong (Toguraci) Mine, North Halmahera, North Maluku	7
Do.	do.	PT J Resource Asia Pasifik Tbk, 80%	Bakan and North Lanut Mines, North Sulawesi	6

See footnotes at the end of the table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>c</sup>
Gold:—Continued				
Mine, Au content	metric tons	PT Merdeka Copper Gold Tbk	Tujuh Bukit Mine, Banyuwangi, East Java	6
Do.	do.	Private owner	Manado Mine, North Sulawesi	NA
Do.	do.	Straits Resources Ltd.	Mt Muro Mine, Central Kalimantan	NA
Refinery	do.	PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Logam Mulia refinery, Jakarta Raya, Jakarta	60
Gravel		Multiple quarrying establishments	Multiple quarry locations	100,000
Iodine	metric tons	PT Kimia Farma Tbk	Watudakon plant, Jombang, East Java	40
Iron ore, mine		PT Sebuku Iron Lateritic Ores	Mine on Sebuku Island, South Kalimantan	NA
Iron and steel, raw steel		PT Dexin Steel Indonesia (Delong Steel Group, 60%)	Smelter in Morowali, Central Sulawesi	4,000
Do.		PT Gunung Raja Paksi Tbk	Smelter in Bekasi, West Java	3,000
Do.		PT Ispat Indo	Smelter in Sidoarjo, East Java	700
Do.		PT Krakatau POSCO (PT Krakatau Steel Tbk, 50%, and POSCO, 50%)	Smelter in Cilegon, West Java	3,000
Do.		PT Krakatau Steel Tbk (Government, 100%)	do.	4,000
Do.		PT Mandan Steel (CNR Corp. Ltd., 100%)	Smelter in Tanah Bumbu, South Kalimantan	1,000
Lead-zinc, ore, gross weight		PT Kapuas Prima Coal Tbk (KPC)	Mine at Bintang Mengalih, Lamandau, Central Kalimantan	500
Lead, refined, primary		do.	Smelter in Pangkalanbun, Central Kalimantan	20
Manganese:				
Mine, Mn content		Gulf Manganese Corp. Ltd.	Putra Indonesia Jaya Mine, West Timor	40
Oxide		PT Premier Bumidaya Industri	Plant in Pasuruan, East Java	16
Nickel, Ni content:				
In ore		PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Mine at Pomalaa, Southeast Sulawesi	30
Do.	do.	do.	Gee Island Mine, North Maluku	NA
Do.		PT Bira Mineral Nusantara (PT Resource Alam Indonesia Tbk, 70%)	Mine in Kendari, South Sulawesi	10
Do.		PT Central Omega Resources Tbk	Mine in Morowali, Central Sulawesi	15
Do.		PT Harita Guna Dharma Bhakti (Harita Group, 100%)	Kawasi Mine, North Maluku	NA
Do.		PT Hengjaya Mineralindo (Nickel Industries Ltd., 80%)	Hengjaya Mine, Morowali, Central Sulawesi	20
Do.		PT Timah Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Timah Nickel Mine, Bombana, Southeast Sulawesi	5
Do.		PT Vale Indonesia Tbk [Vale Canada Ltd., 44.3%; Mining Industry Indonesia (Government, 100%), 20%; Sumitomo Metal Mining Co. Ltd., 15%; others, 20.7%]	Sorowako Mine, South Sulawesi	72
Do.		PT Weda Bay Nickel (Tsingshan Holding Group, 51.3%; Eramet Group, 38.7%; PT Antam Tbk, 10%)	Mine at Weda Bay, Central Halmahera, North Maluku	70
Do.		Solway Investment Group	Asera Mine, Southeast Sulawesi	30
In mixed hydroxide precipitate		PT Halmahera Persada Lygend (Harita Group, 63.1%, and Lygend Resources & Technology Co. Ltd., 36.9%)	Plant on Obi Island, South Halmahera	100
Do.		PT Huayue Nickel Cobalt	Plant in Morowali, Central Sulawesi	60
Do.		PT QMB New Energy Materials (GEM Co. Ltd., 63%)	do.	50

See footnotes at the end of the table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>c</sup>
Nickel, Ni content:—Continued				
In matte		PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Smelter at Pomalaa, Southeast Sulawesi	24
Do.		PT Huake Nickel Industry (Huayue Cobalt Co. Ltd., 70%)	Smelter in Weda Bay, North Maluku	50
Do.		PT Vale Indonesia Tbk [Vale Canada Ltd., 44.3%; Mining Industry Indonesia (Government, 100%), 20%; Sumitomo Metal Mining Co. Ltd., 15%; others, 20.7%]	Smelter at Sorowako, South Sulawesi	80
Do.		Tsingshan Holding Group	Smelter in Morowali, Central Sulawesi	80
In sulfate		PT Halmahera Persada Lygend (Harita Group, 63.1%, and Lygend Resources & Technology Co. Ltd., 36.9%)	Plant on Obi Island, South Halmahera	54
Nitrogen, N content				
		PT Asean-Aceh Fertilizer (Government, 60%, and other members of the Association of Southeast Asian Nations, 40%)	Plants at Lhokseumawe, North Sumatra	500
Do.		PT Pupuk Iskandar Muda (Government, 100%)	do.	500
Do.		PT Pupuk Kalimantan Timur (Government, 100%)	Plant at Bontang, East Kalimantan	1,850
Do.		PT Pupuk Kujang	Plant at Cikampek, West Java	330
Do.		PT Pupuk Sriwijawa Palembang (Government, 100%)	Plant at Palembang, South Sumatra	1,440
Petroleum:				
Crude	thousand 42-gallon barrels per day	Cepu Cooperation Contract (operated by ExxonMobil Cepu Ltd., 45%)	Oilfields in Cepu Block, Central Java and East Java	165
Do.	do.	PT Caltex Pacific Indonesia (Texaco Inc., 50%, and Chevron Corp., 50%)	Oilfields in Minas, Duri, and Bangko, Sumatra Island	700
Do.	do.	PT Pertamina (Government, 100%)	Oilfields in Jatibarang, West Java, and Bu offshore East Kalimantan	80
Do.	do.	do.	Oilfields offshore Sumatra Island	100
Do	do.	Total E&P Indonesia (Total S.A., 100%)	Oilfields in Handil and Bekapai, onshore and offshore East Kalimantan	180
Refined	do.	PT Pertamina (Government, 100%)	Refineries at Balikpapan, East Kalimantan; Balongan, West Java; Cilacap, Central Java; Dumai, Riau; Kasim, West Papua; Plaju, South Sumatra	1,000
Pumice		Multiple quarrying establishments	Multiple quarry locations	800
Salt		PT Puncak Keemasan Garam Dunia	Salterns in Kupang, East Nusa Tenggara	400
Silica sand		Multiple quarrying establishments	Multiple quarry locations	6,000
Silver, mine, Ag content	metric tons	PT Agincourt Resources	Martabe Mine, South Tapanuli, North Sumatra	75
Do.	do.	PT Amman Mineral Nusa Tenggara (PT Amman Mineral Internasional, 82.2%, and PT Pukuafu Indah, 17.8%)	Batu Hijau Mine, Sumbawa Island, West Nusa Tenggara	50
Do.	do.	PT Antam Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Mine in Bogor, West Java	25
Do.	do.	PT Archi Indonesia Tbk (PT Rajawali Corp., 100%)	Toka Tindung Mine, North Sulawesi	15
Do.	do.	PT Freeport Indonesia Co. [Mining Industry Indonesia (Government, 100%), 51.24%, and Freeport-McMoRan Inc., 48.76%]	Grasberg minerals district, Papua	220
Do.	do.	PT Indotan Halmahera Bangkit, 75%, and PT Antam Tbk, 25%	Gosowong (Toguraci) Mine, North Halmahera, North Maluku	8
Do.	do.	PT Merdeka Copper Gold Tbk	Tujuh Bukit Mine, Banyuwangi, East Java	20

See footnotes at the end of the table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>e</sup>
<b>Stone:</b>			
Limestone	PT Afit Lintas Jaya (PT Central Omega Resources Tbk, 75%)	Quarry in North Morowali, Central Sulawesi	NA
Do.	Multiple quarrying establishments	Multiple quarry locations	40,000
Marble	do.	do.	2,000
<b>Tin:</b>			
Ore, Sn content	PT Timah Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Mines onshore and offshore Bangka Belitung Islands and offshore Kundur, Riau Islands	50
Do.	Artisanal miners	Mines in Bangka Belitung Islands	NA
Metal	PT Timah Tbk [Mining Industry Indonesia (Government, 100%), 65%, and public, 35%]	Kundur smelter, Kundur, Riau Islands	70
Do.	do.	Mentok smelter, West Banka, Bangka Belitung Islands	68
Zeolites	Multiple mining establishments	Mines in multiple locations	300

<sup>e</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>Metallurgical-grade bauxite.