



2019 Minerals Yearbook

INDONESIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF INDONESIA

By Jaewon Chung

In 2019, Indonesia was the leading producer of mined nickel in the world, accounting for 33% of the world's production and 24% of the world's reserves. The country was also the world's second-ranked producer of mined tin, accounting for 26% of the world's production and 17% of the world's reserves; the world's second-ranked producer of coal, accounting for 9% of the world's production and 4% of the world's reserves; the world's third-ranked producer of zeolites (natural), accounting for 12% of the world's production (its reserves were not available); and the world's seventh-ranked producer of mined gold, accounting for 4% of the world's production and 5% of the world's reserves (Anderson, 2020; BP p.l.c., 2020, p. 44, 46; Crangle, 2021; McRae, 2020, 2021; Merrill, 2021; Sheaffer, 2020, 2021).

Minerals in the National Economy

In 2019, Indonesia's real gross domestic product (GDP) growth rate was 5.0% compared with 5.2% in 2018. The nominal GDP was \$1.12 trillion. The construction sector accounted for 11% of the GDP; the mining and quarrying sector, 7.3%, including crude petroleum, natural gas, and geothermal energy (2.8% of the GDP), coal (2.3%), other mining and quarrying (1.5%), and iron ore (0.6%); and the mineral products manufacturing sector, 3.4%, including coal and petroleum products (2.1%), base metals (0.7%), and other nonmetallic mineral products (0.6%). Employment in the mining and quarrying sector decreased by 2.2% to 1,422,304 in 2019 and accounted for 1.1% of total employment in the country (Badan Pusat Statistik, 2020, p. 105, 107, 650–651; World Bank, The, 2020a, b).

Government Policies and Programs

On January 12, 2014, Indonesia's ban on unprocessed mineral exports went into effect. The ban, Government Regulation (GR) No. 4 of 2009, includes provisions that mineral products should be processed and refined domestically, and that the export of unprocessed minerals is prohibited. Mining companies, however, were allowed to export ore concentrates until January 11, 2017, under the condition that they meet the minimum domestic refining requirements (differs by commodity), pay export duties, and commit to building smelters in the country. On January 11, 2017, the Government of Indonesia issued GR 1/2017, which extended this exemption for the next 5 years to prevent mining companies from reducing their mining activities (PricewaterhouseCoopers Inc., 2019, p. 8–10).

The Ministry of Energy and Mineral Resources (MEMR) stipulated in Regulation No. 9/2017 that foreign owners are required to start divesting their share in stages after the first 5 years of production and could hold a maximum of 49% ownership in the 10th year. A previous regulation allowed for 70% foreign ownership of underground mines and 60% foreign ownership of processing and refining facilities

(PricewaterhouseCoopers Inc., 2019, p. 9, 10, 50, 74; Bill Sullivan, Senior foreign counsel, Christian Teo and Partners Law Office, written commun., May 18, 2018).

In 2018, the Government issued MEMR Decree No. 1395 K/30/MEM/2018 (as amended by Decree No. 1410 K/30/MEM/2018) for the purpose of implementation of GR 8/2018. Through these regulations, the MEMR set the maximum price at \$70 per metric ton for coal sold to public electric utility companies (PricewaterhouseCoopers Inc., 2019, p. 8; Thomson Reuters, 2019).

In December 2019, under GR 81/2019, the Government set the nickel ore royalty to 10% (an increase from 5%); ferronickel and nickel matte, 2% each (down from 4%); and nickel pig iron, 5%. The new royalty rates were aimed at boosting the nickel downstream industry (Inside Stories, The, 2019b).

Production

In 2019, notable changes in production included that of iron ore (Fe content), which increased by 162%; nickel pig iron (gross weight or Ni content), 144% (estimated); mined nickel (Ni content), 41%; alumina, 36%; zirconium (mineral concentrates), 36% (estimated); raw steel, 26%; bauxite, 25%; and coal, 11% (estimated). The increased output of mined nickel and nickel pig iron likely resulted from the Government's strategy to develop manufacturing industries by using the country's nickel resources. Direct-reduced iron production decreased by 49%. Mined copper (Cu content) output decreased by 45% owing to decreased production at the Grasberg open pit mine. Large variations in the production of other mined metals were mostly due to changes in the country's mining law, GR 1/2017. Data on mineral production are in table 1.

Structure of the Mineral Industry

Directorate General of Mineral and Coal under the MEMR manages the country's mineral resources by formulating and implementing policies on mining activities. Statistics Indonesia collects and publishes data on mineral production and trade, monthly and annually. The Oil & Gas Law of 2001 grants the Government the exclusive rights to petroleum and natural gas extraction and requires all private companies wishing to explore for and extract petroleum and natural gas resources to enter into production-sharing contracts with the Government (Global Business Guide Indonesia, 2015).

State-owned PT Aneka Tambang Tbk (PT Antam) produced bauxite, ferronickel, gold, nickel, and silver. Other major state-owned companies included PT Bumi Resources (coal), PT Indonesia Asahan Aluminium (PT Inalum) (aluminum), PT Krakatau Steel (steel), PT Pertamina (natural gas and refined petroleum), PT Tambang Batubara Bukit Asam Tbk (PT Bukit Asam) (coal), and PT Timah Tbk (tin). Partially foreign-owned company PT Freeport Indonesia Co. (PT-FI) mined copper and

gold. Foreign-owned PT Vale Indonesia Tbk produced nickel ore. Table 2 is a list of major mineral industry facilities.

State-owned holding company Mining Industry Indonesia, which was launched in 2019, oversees five mining companies: PT Antam, PT Bukit Asam, PT-FI, PT Inalum, and PT Timah. As of 2019, there were 17 smelters in operation: 11 for nickel, 2 for bauxite, 2 for copper, 1 for iron, and 1 for manganese. Construction of several smelters was delayed owing to issues relating to funding, regional regulations, and the supply of electricity (Harsono, 2019; Utami, 2020).

Mineral Trade

In 2019, the value of Indonesia's exports of goods totaled \$168 billion compared with \$180 billion in 2018. Exports of mining and mineral products¹ (excluding refined metals) were valued at \$37.6 billion compared with \$47.6 billion in 2018, including coal [\$19.0 billion, or 375 million metric tons (Mt), in terms of amount], crude petroleum [\$1.7 billion, or 27 million barrels (Mbb)], copper concentrates [\$1.3 billion, or 676,700 metric tons (t)], nickel ore (\$1.1 billion, or 32.4 Mt), and bauxite (\$467 million, or 15.5 Mt). Thailand was the leading destination for Indonesia's crude petroleum exports, receiving 40% in terms of value. China was the leading destination for Indonesia's exports of copper concentrate, nickel ore, and bauxite, receiving 47%, 96%, and 100%, respectively. Indonesia's exports of iron and steel, including ferroalloys and ferrous products, increased by 28% to \$7.4 billion in 2019 (United Nations Statistics Division, 2021).

The value of Indonesia's imports of goods totaled \$171 billion in 2019 compared with \$189 billion in 2018. Imports of mining and mineral products (excluding refined metals) were valued at \$25.0 billion compared with \$33.1 billion in 2018, including refined petroleum products (\$13.1 billion), crude petroleum (\$5.7 billion, or 91 Mbb in terms of amount), coal (\$1.1 billion, or 6.8 Mt), and iron ore concentrates (\$430 million, or 4.9 Mt). Singapore was the leading supplier of Indonesia's imports of refined petroleum products (providing 60%, in terms of value); Saudi Arabia, crude petroleum (41%); Australia, coal (72%); and Australia, iron ore concentrate (82%). Indonesia's imports of iron and steel increased by 1.5% to \$10.4 billion in 2019 (United Nations Statistics Division, 2021).

Commodity Review

Metals

Bauxite and Alumina.—In 2019, PT Borneo Alumina Indonesia (PT BAI) launched a smelter-grade alumina refinery project in Bukit Batu Village, Mempawah, West Kalimantan. The first phase plant was expected to start operations with an initial production capacity of 1 million metric tons per year (Mt/yr) of smelter-grade alumina in 2022. PT BAI was a joint-venture subsidiary of PT Inalum (60%) and PT Antam (40%). The project was expected to connect the supply chain between

¹Included Harmonized System (HS) code 25 (salt, sulfur, earths and stones, plastering materials, lime, and cement), HS code 26 (ores, slag, and ash) and HS code 27 (mineral fuels, mineral oils, and products of their distillation).

PT Antam's bauxite mining and PT Inalum's aluminum smelter (PT Aneka Tambang Tbk, 2020, p. 139, 387).

In December, the PT Well Harvest Winning (WHW) alumina refinery planned to build its second smelter-grade alumina refinery line with a capacity of 1 Mt/yr in Ketapang, West Kalimantan. When completed in 2021, the company's total capacity, including a preexisting 1-Mt/yr line, would reach 2 Mt/yr. WHW was owned by China Hongqiao Group Ltd. (56%), PT Cita Mineral Investindo Tbk (CITA) (30%), and others (14%) (Ridwan, 2019; Silaen, 2019).

CITA under PT Harita Jayaraya operated bauxite mines in Ketapang, West Kalimantan. The company expected to extract 9 Mt of metallurgical-grade bauxite in 2019, which was an increase from the 4.8 Mt extracted in 2018. CITA had exported 70% of its mined bauxite to China. In December, Harita completed the sale of 18% (\$85.7 million) of CITA shares to Glencore International Investments Ltd. (registered in Bermuda). After the transaction, Harita's ownership in CITA decreased to 72.96% from 90.96% (table 2; Insider Stories, The, 2019a; Ridwan, 2019).

Copper and Gold.—PT-FI managed one of the world's largest copper and gold deposits at the Grasberg minerals district in Papua Province. PT-FI's copper and gold production in 2019 was about 275,000 t and 26,800 kilograms (kg) compared with 526,000 t and 75,000 kg in 2018, respectively. The decrease was due to the transition from completion of the Grasberg open pit mining to commencement of operations at the Grasberg Block Cave underground mine (Freeport-McMoRan Inc., 2020, p. 40–41).

PT-FI planned to start building its copper smelter in Gresik in early 2020. The plant was expected to be one of the world's major copper smelters; it would have an annual production capacity of 550,000 t of copper cathode, 1.3 Mt of slag, 6,000 t of anode mud, and 150,000 t of synthetic gypsum. The plant would later produce 30 to 60 metric tons per year (t/yr) of gold and 240 t/yr of silver; Indonesia's domestic annual consumption of gold was about 10 t, and the remainder of the plant's output would be exported (Ranggasari, 2019).

Nickel.—In September, the MEMR announced its ban on nickel ore exports would start in January 2020, 2 years earlier than the planned date. This ban was intended to encourage miners to build domestic smelters and export value-added nickel products, such as batteries and stainless-steel slabs. The country was expected to need 81 Mt/yr of nickel ore to feed the 11 smelters in operation and the 25 under construction or in the planning stage. In November, the European Union filed a complaint to the World Trade Organization against Indonesia's export ban (Blenkinsop, 2019; Jakarta Post, The, 2019a; Bill Sullivan, Senior foreign counsel, Christian Teo and Partners Law Office, written commun., October 6, 2019).

In October, PT Weda Bay Nickel (WBN) started operations at a mine on the island of Halmahera. The company planned to extract more than 3 Mt of nickel ore in 2020 and to ramp up production to 6 Mt/yr through the Weda Bay project. The WBN plant, which was scheduled to start up in the first half of 2020, would produce 30,000 t/yr of nickel pig iron. WBN was a joint venture between Chinese steelmaker Tsingshan Holding Group (57%) and Eramet Group of France (43%) (Trompiz, 2020; Eramet Group, 2021).

PT Wanatiara Persada completed the construction of its nickel smelter on Obi Island in November 2019. The smelter was designed to produce 260,000 t/yr of ferronickel with a 15% nickel content. The Government expected that other two nickel smelters would start operations in 2020: PT Antam's smelter (in East Halmahera, North Maluku), which would have a production capacity of 64,700 t/yr of ferronickel, and PT Arthabumi Sentra Industri's smelter (in Morowali, Central Sulawesi), which would have a production capacity of 73,000 t/yr of nickel pig iron (Hidayat, 2019; Mulyana, 2019b).

Industrial Minerals

Rare Earths.—In July, the MEMR announced a plan to prepare regulations for mining, processing, and use of rare earths, which was one of Indonesia's strategic commodities. Monazite-containing rare earths were found as a byproduct of tin processing but remained untapped. PT Timah was to manage the development of rare earths. PT Inalum had been studying the extraction of rare earths from bauxite and had been assessing Indonesia's rare earth reserves. PT Inalum planned to cooperate with a Chinese company on the studies. Meanwhile, the Indonesian Mining Association commented that no exploration had been conducted for rare earths in Indonesia, and that the reserves were likely insignificant (Mulyana, 2019a).

Salt.—The Government expected that the sales of domestic salt for use by the manufacturing industry would remain stable, and that 1.1 Mt of such salt would be distributed for the 2019–20 period, even though the domestic demand for salt had increased, reaching 3.5 Mt in 2019. The low level of sales of domestic salt was attributed to its poor quality; salt for manufacturing purposes requires a minimum 97% sodium chloride (NaCl) content whereas domestic salts normally contained 94% NaCl or less. Excessive imports of salt to meet the domestic demand likely resulted in the market price drop for domestic salt. As of mid-2019, the domestic salt price was between \$28 (IDR400,000)² and \$42 per metric ton, which was lower than that of 2018 (\$70 per metric ton). Indonesia's salt imports increased to 2.6 Mt (\$96 million) in 2019 from 1.9 Mt (\$80 million) in 2015, showing an overall upward trend (Aisyah, 2019; Jakarta Post, The, 2019b; United Nations Statistics Division, 2021).

Mineral Fuels

Coal.—As of 2019, Indonesia's coal reserves were estimated to be 25.1 billion metric tons, of which East Kalimantan accounted for 38%; South Sumatra, 34%; and South Kalimantan, 14%. The sale of coal for domestic use increased to 138 Mt in 2019 from 115 Mt in 2018 owing to the increased demand from the downstream mineral industry. The powerplant sector was the leading consumer, which accounted for 71% of domestic coal sales, followed by the cement, textile, and fertilizer sectors together, 16%; and the metallurgy sector, 7% (Ministry of Energy and Mineral Resources, 2020, p. 62, 66).

²Where necessary, values have been converted from Indonesian rupiah (IDR) to U.S. dollars (US\$) at the annual average exchange rates of IDR14,237=US\$1.00 for 2018 and IDR14,148=US\$1.00 for 2019.

Under the 2018 domestic market obligation (DMO) scheme, coal mining companies were required to allocate a specific portion of their output to the domestic market. The MEMR set the figure at 25% for 2018–19. These companies were also obligated to sell their coal to Indonesian powerplants, such as state-owned PT Perusahaan Listrik Negara, at the cap of \$70 per metric ton in 2018–19. The cap price was determined in reference to global coal prices. Through the DMO, the Government expected to keep the electricity price stable. In November, the Government announced that it would keep the price cap at \$70 per metric ton in 2020 (Bridle and others, 2019; Thomson Reuters, 2019; Harsono, 2020).

In August, Indonesia's President announced plans to relocate the capital to the Province of East Kalimantan. The current capital, Jakarta, has been facing land subsidence by as much as 25 centimeters per year; almost one-half of the area of the capital was below sea level. Construction of the new capital was expected to start in 2021 and to be completed by 2024. East Kalimantan and neighboring Provinces had a number of coalfields operated by major coal producers, such as PT Adaro Indonesia and PT Indika Energy Tbk. The relocation of the capital was expected to affect the coal mining sector. Environmental regulations would be tightened in East Kalimantan, and enforcement of rules on illegal mining would be stepped up. Domestic coal consumption was expected to increase as energy demand increases owing to the construction of the new city (BBC News, 2019; Lee and Dart, 2019).

Outlook

The Government's ban on exports of bauxite and other metallic ores comes into effect in January 2022. The ban is intended to stimulate mining companies to build smelters in Indonesia and to produce value-added mineral products. When the new smelters under construction start operations, the country's refined metal production and exports are expected to increase. Domestic consumption of aluminum, coal, nickel, steel, and construction-related industrial minerals will likely increase in the next a few years owing to the construction of the new capital city (Lee and Dart, 2019).

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TABLE 1
INDONESIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019	
METALS						
Aluminum:						
Bauxite, wet basis	thousand metric tons	472	1,400	2,900 ^c	13,243 ^f	16,593
Alumina		70,000	600,000 ^c	917,099	842,536	1,148,422
Metal, primary		257,149	245,483	218,816	242,043	249,532
Cobalt, mine, Co content ^c		1,300	1,200	1,200	1,200	1,100
Copper:						
Mine, Cu content:						
Concentrates		577,300	716,200	598,800	634,000	344,000
Solvent extraction ³		1,226	11,760	23,160	17,071	16,777
Total		579,000	728,000	622,000	651,000	361,000
Smelter, primary		199,700	258,800 ^f	247,176	230,924	246,100
Refinery, primary:						
Electrowon		1,226	11,760	23,160	17,071	16,777
Other		197,100	249,000	245,000	242,300 ^f	254,800
Total		198,000	261,000	268,000	259,000 ^f	272,000
Ferrous alloys:						
Ferronickel ^c		86,100	101,000	109,000	124,000	129,000
Nickel pig iron ^c		272,000	759,000	748,000	733,000	1,790,000
Silicomanganese		30,000	40,000	40,000	4,000 ^f	4,000
Gold, mine, Au content	kilograms	92,171	80,868	101,000	132,734 ^f	139,000 ^c
Iron ore, mine, iron sand, dry basis:						
Gross weight	thousand metric tons	3,056	2,574	1,967	1,321 ^f	3,450
Fe content	do.	1,710	1,440	1,100	661 ^f	1,730
Iron and steel:						
Direct-reduced iron	do.	53	--	22	237	120
Pig iron	do.	2,460	2,640	2,650	2,730	2,900
Steel:						
Raw steel	do.	4,854	4,746	5,195	6,183	7,783
Products, semimanufactured, rolled	do.	6,168	6,552	7,866	10,011 ^f	10,890
Lead:^c						
Mine, Pb content		5,000	5,000	8,000	11,000	11,000
Refinery, secondary		46,000	48,000	46,000	54,000	54,000
Manganese, mine, concentrate:						
Gross weight		45,000	90,000	56,012	-- ^f	--
Mn content		19,650	39,300	24,459	-- ^f	--
Nickel, Ni content:						
Mine, laterite ore		129,600	204,000	355,000	606,000	853,000
Smelter, matte		81,177	77,581	76,807	74,806	71,025
Ferronickel		17,211	20,293	21,762	24,868	25,713
Nickel pig iron ^c		27,200	75,900	74,800	73,300	179,000
Silver, mine, Ag content	kilograms	151,934	185,234	329,000	309,000	323,000 ^c
Tin:						
Mine, Sn content		70,361	69,621	83,000	85,000	77,468
Smelter, primary		67,400	66,900	80,000	81,427	76,389
Zirconium, concentrates		30,900 ^c	34,800 ^c	30,351 ^f	53,700 ^c	73,100 ^c
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	59,850	62,000 ^c	69,279	75,213	69,500 ^c
Clay, kaolin ^c	do.	700	2,300	750	1,400 ^f	1,400
Feldspar ^c	do.	1,200	1,300	2,600	730 ^f	730
Iodine		45	35	34	38	40 ^c
Pumice ^c	thousand metric tons	49	650	200	200	200
Salt ^c	do.	600	1,000	1,000	1,000	1,000

See footnotes at end of table.

TABLE 1—Continued
INDONESIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019	
INDUSTRIAL MINERALS—Continued						
Stone, sand, and gravel, construction: ^c						
Gravel	thousand metric tons	12,000 ^r	81,000 ^r	16,000 ^r	22,000 ^r	22,000
Stone:						
Crushed, limestone	do.	6,350 ^r	17,200 ^r	6,490 ^r	10,700 ^r	11,000
Size and shape unspecified, marble	do.	1,350 ^r	1,570 ^r	267 ^r	348 ^r	350
Zeolites ^c	do.	200	210	130	130	130
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	131,816 ^r	118,623 ^r	99,861 ^r	106,403 ^r	120,000 ^e
Lignite	do.	45,399 ^r	64,368 ^r	74,537 ^r	99,402 ^r	100,000 ^e
Metallurgical	do.	1,553	1,600	1,646	1,693	1,700 ^e
Subbituminous	do.	282,797 ^r	271,606 ^r	285,203 ^r	341,082 ^r	390,000 ^e
Total	do.	462,000 ^r	456,000 ^r	461,000 ^r	549,000 ^r	612,000 ^e
Natural gas	million cubic meters	76,200	75,100	72,700 ^r	72,800 ^r	67,500
Petroleum, crude, including condensate	thousand 42-gallon barrels	286,890 ^r	303,315 ^r	292,365 ^r	281,780 ^r	271,925

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

¹Table includes data available through January 25, 2021. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the commodities listed, bentonite, dolomite, gypsum, ilmenite, coalbed methane, nitrogen (from ammonia), petroleum refinery products, phosphate rock, silica sand, and sulfur may have been produced, but available information was inadequate to make reliable estimates of output.

³The copper content of solvent extraction output at the mine level is the same as electrowon refinery output because copper produced in the solvent extraction and electrowinning process is typically reported only at the refinery level.

TABLE 2
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity ^e
Aluminum:			
Bauxite	PT Aneka Tambang Tbk (PT Antam) (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Tayan Mine in West Kalimantan Province	1,700
Do.	PT Cita Mineral Investindo Tbk (PT Harita Jayaraya, 72.96%; Glencore International Investment, 18%; others, 9.04%)	Mines ¹ in Ketapang, West Kalimantan	9,000
Alumina	PT Indonesia Chemical Alumina (PT Antam Tbk, 100%)	Tayan CGA ² refinery, West Kalimantan	300
Do.	PT Well Harvest Winning (China Hongqiao Group Ltd., 56%; PT Cita Mineral Investindo Tbk, 30%; others, 14%)	SGA ³ refinery in Ketapang, West Kalimantan	1,000
Metal	PT Indonesia Asahan Aluminium (PT Inalum) (Government, 100%)	Smelter in Kual Tanjung, North Sumatra	260
Cement	PT Holcim Indonesia Tbk (LafargeHolcim, 80.64%)	Plants at Narogong, Cilacap, and Tuban	12,500
Do.	PT Indocement Tungal Prakarsa Tbk (HeidelbergCement Group, 61.5%)	Plants at Cirebon and Citeureup, West Java; Tarjun, South Kalimantan	25,000
Do.	PT Lafarge Cement Indonesia (LafargeHolcim, 80.64%)	Plants at Besar and Lhok, Aceh	3,000
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	Plant in Maros, South Sulawesi	4,200
Do.	PT Semen Indonesia Tbk (Government, 51%, and others, 49%)	Plants at Gresik, Padang, and Tonasa	34,800
Clay, kaolin	Multiple mining establishments (12)	Mines in multiple locations	2,700
Coal:			
Metallurgical	PT Asmin Koalindo Tuhup	Mine in Murung Raya, Central Kalimantan	1,700
Unspecified	PT Adaro Indonesia (New Hope Corp., 50%; PT Asminco Bara Utama, 40%; Mission Energy, 10%)	Paringin and Tutupan Mines, South Kalimantan	36,000
Do.	PT Arutmin Indonesia (PT Bumi Resources Tbk, 80%, and Bakrie Group, 20%)	Mines in Mulia, Senakin, and Satui, South Kalimantan and 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	13,000
Do.	PT Borneo Indobara (PT Golden Energy Mines Tbk, 98.1%, and others, 1.9%)	Mines in Angsana, Tanah Bumbu Regency, South Kalimantan	29,000
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
Do.	PT Tambang Batubara Bukit Asam Tbk (PT Indonesia Asahan Aluminium, 65.02%, and public, 34.98%)	Banko Barat Mine, South Sumatra	14,000
Do.	do.	Tambang Air Laya Mine, South Sumatra	8,000
Do.	do.	Muara Tiga Besar Mine, South Sumatra	7,000
Copper:			
Concentrate, Cu content	PT Amman Mineral Internasional, 82.2%, and PT Pukuafu Indah, 17.8%	Batu Hijau Mine, Sumbawa Island, West Nusa Tenggara	300
Do.	PT Freeport Indonesia Co. (PT Indonesia Asahan Aluminium, 51.24%, and Freeport-McMoRan Inc., 48.76%)	Grasberg Mine, Papua	600
Metal	PT Smelting Co. (Mitsubishi Materials Corp., 60.5%; PT Freeport Indonesia Co., 25%; Mitsubishi Corp. Unimetals Ltd., 9.5%; Nippon Mining Metals Co., 5%)	Smelter and refinery Plant in Gresik, East Java	290
Feldspar	Multiple mining establishments (24)	Mines in multiple locations	2,500
Gas:			
Coalbed methane	Ephindo Energy Pvt. Ltd. (PT Pertamina, 52%, and Dart Energy Ltd., 24%)	Gasfields in Sangatta, East Kalimantan	14
million cubic meters per day			

See footnotes at end of table.

TABLE 2—Continued
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Locations of main facilities	Annual capacity ^e
Gas:—Continued				
Natural	million cubic meters per day	ConocoPhillips Co., 54%; Talisman Energy Inc., 36%; PT Pertamina, 10%	Gasfields in Corridor block, South Sumatra	23
Do.	do.	ExxonMobil Oil Indonesia	Gasfields in Arun and Aceh, North Sumatra	48
Do.	do.	PT Pertamina (Government, 100%)	Gasfields in Mahakam block, East Kalimantan	30
		do.	Gasfields in Sanga Sanga block, East Kalimantan	20
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.	Indo Resources Pacific Inc., 75%	Woyla Mine, Pidie, Aceh	1
Do.	do.	Kingrose Mining Ltd., 85%, and private Indonesian investors, 15%	Way Linggo Mine, Lampung	1
Do.	do.	PT Agincourt Resources	Martabe Mine, North Sumatra	8
Do.	do.	PT Amman Mineral Internasional, 82.2%, and PT Pukuafu Indah, 17.8%	Batu Hijau Mine, Sumbawa Island West Nusa Tenggara	20
Do.	do.	PT Antam Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Cibalung Mine, Pandeglang, Banten	1
Do.	do.	do.	Pongor Mine, West Java	3
Do.	do.	PT Freeport Indonesia Co. (PT Indonesia Asahan Aluminium, 51.24%, and Freeport-McMoRan Inc., 48.76%)	Mine at Grasberg, Papua	110
Do.	do.	PT J Resource Asia Pasifik Tbk, 100%	Seruyung Mine, East Kalimantan	2
Do.	do.	PT J Resource Asia Pasifik Tbk, 80%	Bakan Mine, North Sulawesi	46
Do.	do.	PT J Resource Asia Pasifik Tbk, 80%, and PT Lebong Gold, 20%	North Lanut Mine, North Sulawesi	4
Do.	do.	Newcrest Mining Ltd., 75%, and PT Antam Tbk, 25%	Gosowong (Toguraci) Mine, North Maluku	14
Do.	do.	Private owner, 100%	Manado Mine, North Sulawesi	NA
Do.	do.	PT Rajawali Corp., 100%	Toka Tindung Mine, North Sulawesi	5
Do.	do.	Straits Resources Ltd., 100%	Mt Muro Mine, Central Kalimantan	6
Refinery	do.	PT Antam Tbk, 100%	Logam Mulia Refinery Jakarta Raya, Jakarta	60
Gravel		Multiple quarrying establishments (4,279)	Multiple quarry locations	100,000
Iron and steel, raw steel		PT Ispat Indo	Smelter in Sidoarjo, Surabaya	700
Do.		PT Krakatau Steel (Government, 100%)	Smelter in Cilegon, West Java	2,400
Do.		PT Wahana Garuda Lestari	Smelter in Pulogadung, Jakarta	410
Lead-zinc, mine		PT Kapuas Prima Coal Tbk (KPC)	Mine at Bintang Mengalih, Lamandau, Central Kalimantan	NA
Manganese:				
Mine, Mn content		Putra Indonesia Jaya (Gulf Manganese Corp. Ltd., 100%)	Mine ⁴ in West Timor	NA
Oxide		PT Premier Bumidaya Industri	Plant in Pasuruan, East Java	16
Nickel:				
Ni content in ferronickel		PT Antam Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Smelter at Pomalaa, Southeast Sulawesi	27
Do.		PT Century Metalindo	Smelter in Serang, Banten	10
Do.		PT Huadi Nickel-Alloy Indonesia	Smelter in Bantaeng, South Sulawesi	20
Do.		PT Megah Surya Pertiwi (Harita Group, 60%, and Xinxing Ductile Iron Pipes Co. Ltd., 40%)	Smelter in Obi island, South Halmahera, North Maluku Province	5
Do.		PT Wanatiara Persada	do.	40

See footnotes at end of table.

TABLE 2—Continued
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity ^e	
Nickel:—Continued				
Ni content in ore	PT Antam Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Mines at Pomalaa, Southeast Sulawesi and on Gebe Island	80	
Do.	PT Vale Indonesia Tbk (Vale Canada Ltd., 58.73%; Sumitomo Metal Mining Co. Ltd, 20%; others 21.27%)	Mine at Sorowako, South Sulawesi	70	
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	
Ni content in matte	PT Antam Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Smelter at Pomalaa, Southeast Sulawesi	24	
Do.	PT Vale Indonesia Tbk (Vale Canada Ltd., 58.73%; Sumitomo Metal Mining Co. Ltd, 20%; others 21.27%)	Smelter at Sorowako, South Sulawesi	80	
Ni content in nickel pig iron	PT Fajar Bhakti Lintas Nusantara	Smelter in Central Halmahera	12	
Do.	PT Gebe Industry Nickel	Smelter in Gresik, East Java	12	
Do.	PT Tsingshan Steel Indonesia	Smelter in Morowali, Central Sulawesi	50	
Do.	PT Sulawesi Mining Investment	do.	30	
Do.	PT Virtue Dragon Nickel Industry (Jiangsu Delong Nickel Industry Co. Ltd.)	Smelter at Morosi, Konawe, Southeast Sulawesi	80	
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 (Government, 100%)	Plant at Palembang, South Sumatra	1,440	
Petroleum:				
Crude	thousand 42-gallon barrels per day	BP Indonesia (BP p.l.c.)	Oilfields in Arjuna and Arimbi, offshore West Java	170
Do.	do.	Cepu Cooperation Contract (operated by ExxonMobil Cepu Ltd., 45%)	Oilfields in Cepu Block, Central Java and East Java	165
Do.	do.	China National Offshore Oil Co.	Oilfields, offshore, southeastern Sumatra	100
Do.	do.	Maxus Southeast Asia Ltd. (Maxus Energy Corp.)	Oilfields in Cinta and Rama, offshore southeast Sumatra	95
Do.	do.	PT Caltex Pacific Indonesia (Texaco Inc., 50%, and Chevron Corp., 50%)	Oilfields in Minas, Duri, and Bangko, central Sumatra	700
Do.	do.	PT Pertamina (Government, 100%)	Oilfields in Jatibarang, West Java, and Bunyu, offshore East Kalimantan	80
Do.	do.	Total E&P Indonesia (Total S.A.)	Oilfields in Handi and Bakapai, onshore and offshore East Kalimantan	180
Refined	do.	PT Pertamina (Government, 100%)	Refineries at 6 locations	1,000
Pumice		Multiple quarrying establishments (340)	Multiple quarry locations	800
Salt		PT Puncak Keemasan Garam Dunia	Salterns in Kupang, East Nusa Tenggara	400
Silica, quartz sand		Multiple quarrying establishments (185)	Multiple quarry locations	6,000
Silver, mine, Ag content	metric tons	PT Antam Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Mine in Bogor, West Java	25
Do.	do.	PT Freeport Indonesia Co. PT Indonesia Asahan Aluminium, 51.24%, and Freeport-McMoRan Inc., 48.76%)	Mines at Ertsberg and Grasberg, Papua	220
Do.	do.	PT Kelian Equatorial Mining (Rio Tinto Group, 90%, and PT Harita Jayaraya, 10%)	Kelian Mine, 180 kilometers west of Samarinda, East Kalimantan	10
Stone:				
Limestone		Multiple quarrying establishments (2,754)	Multiple quarry locations	40,000
Marble		Multiple quarrying establishments (29)	do.	2,000

See footnotes at end of table.

TABLE 2—Continued
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity ^e
Tin:			
Ore, Sn content	PT Timah Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Mines onshore and offshore islands of Bangka Belitung and Singkep	85
Metal	PT Refined Banka Tin	Smelter in Banka Belitung Islands	36
Do.	PT Timah Tbk (PT Indonesia Asahan Aluminium, 65%, and public, 35%)	Kundur smelter, Kundur, Riau Islands	70
Do.	do.	Mentok smelter, West Banka, Bangka Belitung Islands	68
Zeolites	Multiple mining establishments (5)	Mines in multiple locations	300

^eEstimated. Do., do. Ditto. NA Not available.

¹Metallurgical grade bauxite.

²CGA: Chemical grade alumina.

³SGA: Smelter grade alumina.

⁴On care-and-maintenance status.