



# 2019 Minerals Yearbook

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**MALAYSIA [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF MALAYSIA

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Malaysia's mineral industry produced primarily metallic ores and concentrates, as well as crude petroleum and natural gas in 2019. Malaysia also produced a regionally significant amount of refined tin, from both domestically produced and imported tin concentrates, and rare-earth oxide compounds from imported rare-earth mineral concentrates. Although Malaysia was the 3d-ranked global producer of bauxite in 2015, it was the 11th-ranked producer in 2019 (not including United States production) following the Government's prohibition on bauxite mining in 2016. In 2019, Malaysia was the 11th-ranked global producer of mined tin and was estimated to rank 8th in tin ore reserves, accounting for 3.7% of global reserves. Malaysia was the 3d-ranked producer of refined tin and the 11th-ranked producer of manganese ore (Bray, 2017, 2021; CRU Tin Monitor 2020, p. 13; Gambogi, 2021; Merrill, 2021; Schnebele, 2021).

## Minerals in the National Economy

Malaysia's real gross domestic product (GDP) increased by 4.3% in 2019 compared with an increase of 4.7% in 2018. This increase was owing to increased spending by the private sector. Malaysia's nominal GDP in 2019 was MYR1.51 trillion (\$370 billion).<sup>1</sup> The gross output of the mining and quarrying sector, which accounted for 7.1% of the GDP, decreased by 1.5% in 2019 compared with a decrease of 2.6% in 2018. The decrease in 2019 was largely owing to the disruption in petroleum production from maintenance shutdowns and Petroliam Nasional Bhd. (PETRONAS) voluntarily decreasing its production. This decision was in line with an agreement with the Organization of the Petroleum Exporting Countries (OPEC) to reduce global petroleum production in 2019. The lower rate of decrease in gross mining output in 2019 was owing to increased natural gas production compared with that of 2018. A disruption in the natural gas pipelines in 2018 led to lower production in the year (Bernama, 2019; Bank Negara Malaysia, 2020a, p. 8; 2020b, p. 22–23).

## Government Policies and Programs

Malaysia's mineral sector is governed by the Mineral Development Act 1994 and the State Mineral Enactment. The Mineral Development Act 1994 defines the power of the Federal Government to regulate and inspect mineral exploration, mining, and related activities. The State Mineral Enactment gives the State governments the power to issue mineral prospecting and exploration licenses and mining leases. Mine and quarry operators are required to pay value-based royalties to the State in which their operation is located. The Mineral Development (Licensing) Regulations 2016 established regulations that require companies or individuals to have a license to possess, purchase,

<sup>1</sup>Where necessary, values have been converted from Malaysia Ringgit (MYR) to U.S. dollars (US\$) at the annual average exchange rate of MYR4.0890=US\$1.00 for 2019.

sell, store, or transport any mineral ores, as well as carry out any mineral-processing activities. The Mineral Development (Effluent) Regulations 2016 set parameters for the concentration of contaminants in effluent from onshore mineral exploration and mining activities. The petroleum industry is governed by the Petroleum Development Act 1974, which established Petroliam Nasional Bhd. (PETRONAS). The act grants exclusive rights in the ownership of, exploration for, and extraction of petroleum, both onshore and offshore, in Malaysia to PETRONAS. The Environmental Quality Order 1987 governs environmental aspects of the mineral industry. Under the order, all mining leases larger than 250 hectares require an environmental protection plan that must be approved by the Department of Environment (Attorney General's Chambers, 2016a, 9–14; 2016b, p. 22–26; Malaysian Chamber of Mines, 2021a, b).

## Production

Mineral commodities for which output increased by 10% or more included raw steel, by 66%; bauxite, 53%; clay (unspecified), 50%; construction sand and gravel, 45%; subbituminous coal, 30%; gold and lignite, 25% each; iron ore (gross weight and Fe content), 24%; rutile, 17%; industrial sand and gravel, 16%; and silicomanganese, 10%. Mineral commodities for which output decreased by 10% or more included struvite concentrate, by 96%; monazite concentrate [gross weight of monazite and xenotime and rare-earth oxide equivalent (REO)], 93%; ilmenite and leucoxene, 84%; feldspar, 51%; direct-reduced iron, 20%; kaolin, 16%; ferromanganese, 15%; smelted tin (primary), 11%; and mined manganese (gross weight and estimated Mn content), 10%. Data on mineral production are in table 1.

## Structure of the Mineral Industry

Malaysia's mines, quarries, and metallic and industrial mineral-processing facilities were operated by private domestic companies and subsidiaries of international companies incorporated in Malaysia. The mining and quarrying sector is regulated by the Ministry of Energy and Natural Resources. PETRONAS, together with its subsidiaries, operated as an integrated petroleum and gas company in Malaysia and internationally. PETRONAS engaged in the exploration, development, production (extraction, liquefaction, manufacturing, and refining), transportation, and sale (trading and marketing) of crude petroleum and natural gas products. It also owned and operated a network of retail gasoline and diesel stations. Table 2 is a list of major mineral industry facilities (Petroliam Nasional Bhd., 2020, p. 3, 9–11).

## Mineral Trade

In 2019, Malaysia's total exports were valued at MYR986 billion (\$241 billion), which was a decrease of 1.7% compared with

the value in 2018. China (excluding the Hong Kong Special Administrative Region of China) was the leading destination for Malaysia's exports, accounting for 14.2% of the total value of exports in 2019, followed by Singapore, 13.9%; and the United States, 9.7%. Singapore was the leading destination for Malaysia's exports for the previous 7 years. Electrical and electronic products remained Malaysia's leading export category, accounting for 38% of the value of total exports, and the export value of this category decreased by 2% compared with that of 2018. Refined petroleum products accounted for 7% of the total exports, and the export value of them decreased by 6% compared with that of 2018. Liquefied natural gas (LNG) exports were valued at MYR41.5 billion (\$10.2 billion), which was a decrease of 2% compared with the value in 2018. Malaysia exported 25.8 million metric tons of LNG in 2019, making it the fifth-ranked LNG exporting country in the world, by volume, in 2019. The leading destinations for Malaysia's LNG exports, by volume, were Japan, which received 36% of the exports, followed by China, 28%; the Republic of Korea, 19%; Taiwan, 10%; and Thailand, 5%. Crude petroleum exports were valued at MYR26.3 billion (\$6.4 billion), which was a decrease of 28% compared with the value in 2018. Malaysia exported 751,000 metric tons (t) of bauxite to China in 2019, valued at \$29.9 million. The value of iron and steel products export increased by 28%, to MYR19.9 billion (\$4.9 billion) (Alumina & Aluminum Monthly, 2020, p. 3; BP p.l.c., 2020, p. 42; Malaysia External Trade Development Corp., 2020, p. 3, 15).

In 2019, Malaysia's total imports were valued at MYR849 billion (\$208 billion), which was a decrease of 3.5% compared with the value in 2018. China remained Malaysia's leading source for imports, accounting for 21% of the total value of imports, followed by Singapore, 11%; and the United States, 8%. Electrical and electronic products remained Malaysia's leading import category, accounting for 29% of the value of total imports, and the import value of this category decreased by 7% in 2019. Refined petroleum products accounted for 9% of total imports and the import value decreased by 10%, whereas crude petroleum accounted for 3% of imports and the import value increased by 16% (Malaysia External Trade Development Corp., 2020, p. 3, 15, 18).

## Commodity Review

### Metals

**Bauxite and Alumina.**—On March 31, 2019, the Government allowed the moratorium on the mining of bauxite to expire after 3 years. Enforcement of this moratorium began in January 2016 in response to the environmental damage and water contamination caused by the rapid expansion of bauxite mining in 2014 and 2015. On September 5, 2019, the Government released a standard operating procedure for bauxite mining. Under these new procedures, bauxite mining companies are required to register with the Department of Director General of Lands and Mines and to submit an environmental impact study to resume mining. Bauxite mines are required to have a 50-meter buffer area from any rivers and a 500-meter buffer area from residential areas, and the minimum size for a bauxite mine is set at 20 hectares. Regulations on the transport of bauxite

include requiring the registration, speed and load limits, and designated routes for bauxite-transporting trucks. The Kuantan Port Authority placed a monthly 600,000 t export limit on bauxite. In addition, only bauxite with an alumina content of 40% or more may be exported. In November, the Government announced that it would begin issuing new bauxite licenses that require a 6-month trial period (Aluminium Insider, 2019; Daim, 2019; Ministry of Energy and Natural Resources, 2019, p. 23–25, 45, 114; Povera, 2019; Thomson Reuters 2019a, b).

**Ferroalloys.**—OM Materials (Sarawak) Sdn. Bhd., which was jointly owned by OM Holdings Ltd. of Singapore (75%) and Cahya Mata Sarawak Bhd. (25%), produced 230,735 t of ferrosilicon and 248,163 t of manganese alloys (silicomanganese and high-carbon ferromanganese) at its plant in Sarawak in 2019. One of the plant's six manganese alloy furnaces was shut down for maintenance in November (OM Holdings Ltd., 2020, p. 10–11).

**Rare Earths.**—Lynas Malaysia Sdn. Bhd., which was a wholly owned subsidiary of Lynas Corp. Ltd. of Australia, owned and operated the Lynas Advanced Materials Plant (LAMP) located outside of Kuantan, Pahang. The plant processed rare-earth concentrates produced at Lynas's Mount Weld rare-earth operation in Western Australia, Australia. LAMP produced cerium carbonate, cerium oxide, lanthanum cerium carbonate, lanthanum cerium oxide, mixed heavy rare-earth product, neodymium oxide, neodymium-praseodymium oxide, and praseodymium oxide. Japan was a major export destination for the company's neodymium-praseodymium oxide output. In 2019, Lynas produced 17,613 t of rare-earth oxide (REO) compounds at the LAMP, which was a decrease of 5% compared with the amount produced in 2018. In August, the company announced that the operating license for the LAMP had been renewed; the new operating license was set to expire in May 2020. As conditions of the renewal, Lynas was required to submit plans for a cracking and leaching plant outside of Malaysia, identify a location and receive permission from a State government for the construction of a permanent disposal facility, and halt all research and development involving the radioactive residue from the water leach purification process. The Government required Lynas to meet these conditions within 6-months (Lynas Corp. Ltd., 2019, p. 5; 2020, p. 5; Yunus, Radhi, and Yusof, 2019).

Malaysia produced a minor amount of monazite and xenotime, both of which are rare-earth minerals. These minerals were recovered at tin retreatment plants that process tailings from historic tin mines. In addition to monazite and xenotime, these plants also recover ilmenite and zircon (Sanusi and others, 2021).

**Tin.**—The Malaysia Smelting Corp. Bhd. (MSC) operated its smelter at Butterworth, Penang, and was the sole producer of refined tin metal in the country. MSC remained the third-ranked supplier of refined tin in the world in 2019, despite operating its smelter well below its capacity of 40,000 metric tons per year. The company, through its wholly owned subsidiary Rahman Hydraulic Tin Bhd., operated Malaysia's leading tin mine, which is located at Klian Intan, Perak. The mine produced 2,228 t of tin concentrate (Sn content) in 2019. The company reported that it had been engaged in exploration activities and had discovered some tin deposits adjacent to the mine in Klian Intan.

The company reportedly shipped 18,583 t of refined tin out of Malaysia in 2019. The United States was the leading destination of the company's exported refined tin, accounting for 28% of the total, followed by Japan, 21%; European Union member countries, 16%; the Republic of Korea, 9%; and Taiwan, 7% (Malaysia Smelting Corp. Bhd., 2020, p. 18, 25).

## Outlook

Malaysia's GDP is expected to decrease by 2.0% in 2020 owing to the coronavirus disease 2019 (COVID-19) pandemic. With the issuing of new licenses for bauxite mining, Malaysia's bauxite production is expected to increase in the next few years. Because bauxite production is increasing in other parts of the world, however, such as in Guinea and Australia, global demand for bauxite from Malaysia will likely be lower than the level prior to the 2016 ban. Bauxite mining is unlikely to reach the highs of 2014 and 2015. The future of the LAMP's operating status remains uncertain as Lynas continues to negotiate with the Government for a long-term operating license. Malaysia's tin production is expected to remain steady in the long term as MSC continues to conduct exploration for new tin deposits to support its refining activities (Bank Negara Malaysia, 2020b, p. 47, 49; Heckbert, 2020; Lynas Corp. Ltd. 2020, p. 4).

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

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>		2015	2016	2017	2018	2019
<b>METALS</b>						
<b>Aluminum:</b>						
Bauxite		35,000,000 <sup>c</sup>	3,000,000 <sup>c</sup>	2,000,000 <sup>c</sup>	589,684 <sup>r</sup>	900,561
Aluminum, refinery, primary <sup>c</sup>		400,000	620,000	700,000	750,000	760,000
<b>Ferroalloys:</b>						
Ferromanganese		--	58,801	264,555	312,420	266,000
Ferrosilicon		104,554	126,261	174,540	220,515	230,735
Silicomanganese		--	20,975	230,535	283,414	312,000
Gold, mine, Au content	kilograms	4,732	2,249	2,124	2,520	3,151
<b>Iron ore, mine:</b>						
Gross weight	thousand metric tons	1,625	1,914	3,920	3,354	4,160
Fe content	do.	1,020	1,150	2,450	2,090	2,600
<b>Iron and steel:</b>						
Direct-reduced iron	do.	957	656	570	743 <sup>r</sup>	595
Raw steel	do.	3,784	2,764	3,215	4,108 <sup>r</sup>	6,820
<b>Manganese, mine:</b>						
Gross weight		501,827	700,717	1,226,106	1,262,725 <sup>r</sup>	1,130,749
Mn content <sup>c</sup>		196,000	273,000	478,000	492,000 <sup>r</sup>	441,000
Niobium and tantalum, mine, struverite concentrate <sup>c</sup>		86	77	61	274 <sup>r</sup>	12
<b>Rare earths:</b>						
<b>Mineral concentrates, monazite and xenotime:</b>						
Gross weight		565	1,880	306	1,654 <sup>r</sup>	114
Rare-earth oxide equivalent <sup>c</sup>		310	1,100	180	990 <sup>r</sup>	66
Compounds, rare-earth oxide equivalent		10,916	13,872	17,264	18,556	17,613
Silver, mine, Ag content	kilograms	945	1,075	1,404	1,702 <sup>r</sup>	1,680
<b>Tin:</b>						
Mine, Sn content		4,125	4,158	3,894	3,868 <sup>r</sup>	3,611
Smelter, primary		30,209	26,758	27,200	27,197	24,320
<b>Titanium, mineral concentrate:</b>						
Ilmenite and leucosene		5,814	4,316	6,363	14,158 <sup>r</sup>	2,334
Rutile		198	3,810	5,266	5,070 <sup>r</sup>	5,947
Zirconium, zircon		826	653	1,595	1,000 <sup>c</sup>	1,000 <sup>c</sup>
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic	thousand metric tons	24,710	22,330	18,800	20,000 <sup>c</sup>	18,000 <sup>c</sup>
<b>Clay:</b>						
Kaolin		255,448	285,940	321,685	496,219 <sup>r</sup>	417,222
Unspecified	thousand metric tons	8,150	9,371	9,371	8,326 <sup>r</sup>	12,466
Feldspar		442,980	441,857	411,204	414,441 <sup>r</sup>	201,798
Lime <sup>c</sup>		1,500,000	1,600,000	1,600,000	1,600,000	1,600,000
Mica		4,788	4,716	4,787	5,000 <sup>c</sup>	5,000 <sup>c</sup>
Sand and gravel, industrial, unspecified	thousand metric tons	9,003	10,353	10,000 <sup>c</sup>	4,064 <sup>r</sup>	4,705
<b>Stone, sand and gravel, construction:</b>						
Sand and gravel, unspecified	do.	40,578	46,665	47,000 <sup>c</sup>	44,919 <sup>r</sup>	64,927
<b>Stone:</b>						
Crushed, unspecified	do.	158,744	182,556	180,000 <sup>c</sup>	180,000 <sup>c</sup>	180,000 <sup>c</sup>
Dimension, limestone	do.	24,164	27,187	27,000 <sup>c</sup>	23,033 <sup>r</sup>	22,298
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
<b>Coal:</b>						
Anthracite	thousand metric tons	25	24	19	-- <sup>r</sup>	--
Lignite	do.	171	157	185	8 <sup>r</sup>	10
Subbituminous	do.	2,326	2,198	2,784	2,645 <sup>r</sup>	3,450
Liquefied natural gas	do.	25,154	25,273	27,082	24,347 <sup>r</sup>	25,991
Natural gas, marketable	million cubic meters	73,900	72,400	74,500	72,500	78,800

See footnotes at end of table.

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

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>	2015	2016	2017	2018	2019	
<b>MINERAL FUELS AND RELATED MATERIALS—Continued</b>						
<b>Petroleum:</b>						
Crude, including condensate	thousand 42-gallon barrels	242,000	243,000	237,000	236,000	238,000
Refinery products	do.	172,000	181,000	206,000	218,000	214,000

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

<sup>1</sup>Table includes data available through March 8, 2021. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

<sup>2</sup>In addition to the commodities listed, ammonia, fertilizers, lead (secondary), magnesium metal, and salt may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2  
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, metal	Press Metal Sarawak Sdn. Bhd. (Press Metal Berhad, 80%, and Sumitomo Corp., 20%)	Smelter in Mukah, Sarawak	120.
Do.	do.	Two smelters in Similajau, Sarawak	640.
Bauxite	AA Sawit Sdn. Bhd.	Mine in Pengerang Johor	150. <sup>c</sup>
Do.	Johor Mining & Stevedoring Sdn. Bhd.	Mine in Teluk Ramunia, Johor	150. <sup>c</sup>
Do.	Tropical City Sdn. Bhd.	Mine in Pengerang, Johor	150. <sup>c</sup>
Do.	Multiple small producers	Mines in Pahang	NA.
Cement	Cement Industries of Malaysia Bhd. (United Engineers Malaysia Bhd., 53.97%, and others, 46.03%)	Plant in Kangar, Perlis	2,000 cement; 1,650 clinker.
Do.	do.	Plant in Bahau, Negeri Sembilan	1,580 cement; 1,300 clinker.
Do.	CMS Cement Sdn. Bhd. (Cahaya Mata Sarawak Bhd.)	Plant in Bintulu, Sarawak	750 cement.
Do.	do.	Plant in Kuching, Sarawak	1,000 cement.
Do.	Lafarge Malaysia Cement Bhd. (LafargeHolcim Ltd.)	Plant in Pasir Gudang, Johor	1,190 cement.
Do.	do.	Plant in Rawang, Selangor, Langkawi, Kedah	6,810 cement; 4,900 clinker.
Do.	do.	Plant in Kanthan, Perak, Langkawi, Kedah	5,370 cement; 3,300 clinker.
Do.	do.	Plant in Pasir Gudang, Johor	770 cement.
Do.	Tasek Corp. Bhd.	Plant in Ipoh, Perak	2,300 cement; 2,300 clinker.
Do.	YTL Cement Bhd. (YTL Group, 100%)	Plant in Bukit Sagu, Pahang	1,300 cement; 1,200 clinker.
Do.	do.	Plant in Padang Rengas, Perak	3,400 cement; 3,000 clinker.
Do.	do.	Plant in Pasir Gudang and Westport, Johor	1,000 cement.
Clay, kaolin	Kongsimaju Sdn. Bhd.	Quarry in Bidor, Perak	NA.
Coal	Multiple producers in Sarawak	Mines in Sarawak	NA.
Ferroalloys:			
Ferromanganese	OM Materials (Sarawak) Sdn. Bhd. (OM Holdings Ltd., 75%, and Cahya Mata Sarawak Bhd., 25%)	Plant in Samalaju industrial park, Bintulu, Sarawak	150.
Do.	Pertama Ferroalloys Sdn. Bhd. (Asia Minerals Ltd., 60%; Nippon Denok Co. Ltd., 25%; Carbon Capital Corp. Sdn. Bhd., 8%; Shinsho Corp., 7%)	do.	50.
Do.	Sakura Ferroalloys Sdn. Bhd. (Assmang Ltd., 54.36%; Sumitomo Corp., 26.64%; China Steel Corp., 19%)	do.	107.
Silicomanganese	OM Materials (Sarawak) Sdn. Bhd. (OM Holdings Ltd., 75%, and Cahya Mata Sarawak Bhd., 25%)	do.	150.
Do.	Pertama Ferroalloys Sdn. Bhd. (Asia Minerals Ltd., 60%; Nippon Denok Co. Ltd., 25%; Carbon Capital Corp. Sdn. Bhd., 8%; Shinsho Corp., 7%)	do.	120.
Do.	Sakura Ferroalloys Sdn. Bhd. (Assmang Ltd., 54.36%; Sumitomo Corp., 26.64%; China Steel Corp., 19%)	do.	67.
Ferrosilicon	OM Materials (Sarawak) Sdn. Bhd. (OM Holdings Ltd., 75%, and Cahya Mata Sarawak Bhd., 25%)	do.	235.
Do.	Pertama Ferroalloys Sdn. Bhd. (Asia Minerals Ltd., 60%; Nippon Denok Co. Ltd., 25%; Carbon Capital Corp. Sdn. Bhd., 8%; Shinsho Corp., 7%)	do.	60.

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>Gold:</b>			
Mine output, Au content kilograms	Monument Mining Ltd.	Mine in Bukit Selinsing Koyan, Pahang	2,000.
Do.	do. PT J Resources Asia Pasifik Tbk (J&Partners, L.P., 100%)	Mine in Penjom, Pahang	2,500.
Do.	do. Raub Australian Gold Mining Sdn. Bhd. (Peninsular Gold Ltd., 100%)	Mine in Raub, Pahang	700.
Processed	do. Monument Mining Ltd.	Plant in Bukit Selinsing Koyan, Pahang	1,500.
<b>Iron ore</b>	Bahatera Parmaslogam Rasharta (M) Sdn. Bhd.	Mine in Sokor, Kelantan	NA.
Do.	Berlian Impresif Sdn. Bhd.	Mine in Sungai Petani, Kedah	NA.
Do.	Bestagold Resources Sdn. Bhd.	Mine in Merbok, Kedah	NA.
Do.	Generasi Karisma Sdn. Bhd.	Mine in Maokil, Johor	NA.
Do.	LF Resources Corp. Sdn. Bhd.	Mine in Sungai Petani, Kedah	NA.
Do.	Limemax Sdn. Bhd. (ZCM Minerals Sdn. Bhd., 100%)	Mine in Pelepah Kanan, Johor	NA.
Do.	Permodalan Kedah Bhd.	Mine in Gunrun, Kedah	NA.
Do.	SMGB Group Sdn. Bhd.	Mine in Galas, Kelantan	NA.
Do.	SP Mega Mineral Sdn. Bhd.	Mine in Merbok, Kedah	NA.
Do.	ZCM Resources Sdn. Bhd.	Mine in Jerantut, Pahang	NA.
<b>Iron and steel:</b>			
Direct-reduced iron	Lion DRI Sdn. Bhd. (The Lion Group, 100%)	Plant in Banting, Selangor	1,540.
Do.	Perwaja Steel Sdn. Bhd. (Kinsteel Bhd, 51%, and Maju Holdings Sdn. Bhd., 49%)	Plant in Kemaman, Terengganu	1,800.
Hot-briquetted iron	Amsteel Mills Sdn. Bhd. (The Lion Group, 100%)	Plant on Labuan Island, offshore Sabah	880.
Raw steel	do.	Plant in Banting, Selangor	1,250.
Do.	do.	Plant in Klang, Selangor	750.
Do.	Ann Joo Steel Bhd. (Ann Joo Group, 100%)	Plant in Prai, Penang	900.
Do.	Antara Steel Sdn. Bhd. (The Lion Group, 100%)	Plant in Pasir Gudang, Johor	600.
Do.	Kinsteel Sdn. Bhd.	Plant in Kuantan, Pahang	500.
Do.	Megasteel Sdn. Bhd. (The Lion Group, 100%)	Plant in Banting, Selangor	700.
Do.	Malaysia Steel Works Bhd.	Plant in Bukit Raja, Selangor	450.
Do.	Perwaja Steel Sdn. Bhd. (Kinsteel Bhd., 51%, and Maju Holdings Sdn. Bhd., 49%)	Plant in Kermaman, Terengganu	1,500.
Do.	Southern Steel Bhd. [Camerlin (a member of Hong Leong Group Malaysia), 40.75%; Natsteel Ltd., 27.03%; others, 32.22%]	Plant in Prai, Penang	1,300.
Magnesium, metal	CVM Minerals Ltd.	Plant in Kamunting Raya, Perak	15.
Manganese, ore	Chini Highland Mining Sdn. Bhd.	Mine in Chini, Pahang	NA.
Do.	Pekan Mining Industries Sdn. Bhd.	do.	NA.
Mica	Tasik Mahir Sdn. Bhd.	Mine in Bidor, Perak	NA.
Do.	Techcera (M) Sdn. Bhd.	do.	NA.
Nitrogen, ammonia, N content	Petronas Ammonia Sdn. Bhd. [Petroleum Nasional Bhd. (PETRONAS) (Government, 100%)]	Plant in Kerth, Terengganu	370.
Do.	Asean Bintulu Fertilizer Sdn. Bhd. (Petroleum Nasional Bhd. (PETRONAS), 63.5%; P.T. Pupuk Sriwidjaja Indonesia, 13%; Thai Ministry of Finance, 13%; Philippines National Development Co., 9.5%; Singapore Temasek Holdings Pte. Ltd., 1%)	Plant in Bintulu, Sarawak	395.
Do.	Petronas Fertilizer Kedah Sdn. Bhd. [Petroleum Nasional Bhd. (PETRONAS) (Government, 100%)]	Plant in Gurun, Kedah	378.

See footnotes at end of table.



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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Liquefied natural gas		Malaysia LNG Dua Sdn. Bhd. [Petroliam Nasional Bhd. (PETRONAS), 60%; Shell Gas N.V., 15%; Mitsubishi Corp., 15%; Sarawak State government, 10%]	Plant in Tanjung Kidurong, Bintulu, Sarawak	10,000.
Do.		Malaysia LNG Sdn. Bhd. [Petroliam Nasional Bhd. (PETRONAS), 65%; Shell Gas N.V., 15%; Mitsubishi Corp., 15%; Sarawak State government, 5%]	do.	10,300.
Do.		Malaysia LNG Tiga Sdn. Bhd. [Petroliam Nasional Bhd. (PETRONAS), 60%; Shell Gas N.V., 15%; Nippon Oil LNG (Netherlands) BV, 10%; Sarawak State government, 10%; Diamond Gas Netherlands BV, 5%]	do.	9,000.
Natural gas	million cubic meters	ExxonMobil Exploration and Production Malaysia Inc.	Platform offshore Terengganu	16,400.
Do.	do.	Sabah Shell Petroleum Co. Ltd.	Platform offshore Sabah	1,100.
Do.	do.	Sarawak Shell Bhd.	Platform offshore Sarawak	29,200.
Petroleum:				
Crude	thousand 42-gallon barrels	ExxonMobil Exploration and Production Malaysia Inc.	Platform offshore Terengganu	140,000.
Do.	do.	Murphy Sarawak Oil Co. Ltd.	Platform offshore Sarawak	14,000.
Do.	do.	PETRONAS Carigali Sdn. Bhd. [Petroliam Nasional Bhd. (PETRONAS) (Government, 100%)]	Platform offshore Terengganu	8,000.
Do.	do.	Sabah Shell Petroleum Co. Ltd.	Platform offshore Sabah	22,000.
Do.	do.	Sarawak Shell Bhd.	Platform offshore Sarawak	55,000.
Refinery	do.	Hengyuan Refining Co. Bhd. (Malaysia Hengyuan International Ltd., 51%, and others, 49%)	Hengyuan Refinery, Port Dickson, Negeri Sembilan	49,000.
Do.	do.	Kemaman Bitumen Co.	Refinery in Kemaman, Terengganu	10,000.
Do.	do.	Malaysian Refining Co. Sdn. Bhd. [Petroliam Nasional Bhd. (PETRONAS) (Government, 100%)]	Melaka Refinery, Train 2	58,000.
Do.	do.	Petroliam Nasional Bhd. (PETRONAS) (Government, 100%)	Pengerang Integrated Complex., Southern Johor	102,000.
Do.	do.	PETRONAS Penapisan (Melaka) Sdn. Bhd. (PP(M)SB) [Petroliam Nasional Bhd. (PETRONAS) (Government, 100%)]	Melaka Refinery, Train 1	32,000.
Do.	do.	PETRONAS Penapisan (Terengganu) Sdn. Bhd. (PP(T)SB) [Petroliam Nasional Bhd. (PETRONAS) (Government, 100%)]	Kerteh Refinery	41,000.
Do.	do.	Petron Corp. (SEA Refinery Corp., 50.1%; San Miguel Corp., 18.2%; others, 31.7%)	Refinery in Port Dickson, Negeri Sembilan	29,000.
Rare-earth compounds, rare-earth-oxide equivalent		Lynas Malaysia Sdn. Bhd. (Lynas Corp. Ltd., 100%)	Lynas Advanced Materials Plant (LAMP) in Kuantan, Pahang	22.
Tin:				
Concentrate, Sn content	metric tons	Delima Industries Sdn. Bhd.	Mine in Dengkil, Selangor	1,100.
Do.	do.	Maiju Sama Sdn. Bhd.	Mine in Puchong, Selangor	1,600.
Do.	do.	New Lahat Mines Sdn. Bhd.	Mine in Lahat, Perak	300.
Do.	do.	Omsam Telecommunication Sdn. Bhd.	Mines in Bakap and Batu Gajah, Perak	500.
Do.	do.	Rahman Hydraulic Tin Bhd. (Malaysia Smelting Corp. Bhd., 100%)	Mine in Klian Intan, Perak	3,000.
Do.	do.	S.E.K. (M) Sdn. Bhd.	Mine in Kampar, Perak	400.
Do.	do.	Tasek Abadi Sdn. Bhd.	Mines in Senudong and Kampar, Perak	500.
Refined		Malaysia Smelting Corp. Bhd. (MSC) (The Straits Trading Co. Ltd., 37.44%; Malaysia Mining Corp., 37.44%; others, 25.12%)	Plant in Butterworth, Penang	40.
Titanium dioxide		Tioxide Malaysia Sdn Bhd. (Huntsman Corp., 100%)	Plant in Kemaman, Terengganu	56.

\*Estimated. Do., do. Ditto. NA Not available.