



# 2015 Minerals Yearbook

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**MALAYSIA [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF MALAYSIA

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In 2015, Malaysia's real gross domestic product (GDP) was valued at \$247 billion (1.06 trillion Malaysia ringgits [MYR]),<sup>1</sup> which was a 5% increase compared with that of 2014. The Government's Tenth Malaysia Plan, which covered the period from 2011 to 2015, aimed to grow real GDP by an average annual rate of 6.0%. During the past 5 years, the average annual growth rate of real GDP had been about 5.3%. Malaysia's economy remained reliant on the export of manufactured goods and the services sector in 2015. The services sector remained the leading contributor to the GDP, accounting for 53.5% of the GDP, followed by the manufacturing sector, which accounted for 23.0%. The value of the services and manufacturing sectors increased by 5.1% and 4.9%, respectively. The growth of the mining and quarrying sector continued despite the decrease in global crude petroleum prices; the sector's output value increased by 4.7% in 2015 compared with an increase of 3.3% in 2014. This increase was largely attributed to an increase in annual crude petroleum production owing to the commissioning of the Gumusut-Kapap deepwater oilfield project in the fourth quarter of 2014. Malaysia was the third-ranked global producer of bauxite in 2015. Malaysia also had substantial reserves of tin, accounting for about 5.3% of global tin reserves (Economic Planning Unit, 2010, p. 2; Bank Negara Malaysia, 2016, p. 20, 22, 32, P24; Anderson, 2017; Bray, 2017).

## Minerals in the National Economy

Minerals mined and extracted in Malaysia included barite, bauxite, clays, coal, gold, ilmenite, iron ore, limestone, monazite, natural gas, petroleum, silica, silver, struverite (a niobium-tantalum mineral), and tin. In addition to these, Malaysia had identified mineral resources of copper and zircon. The mining and quarrying sector accounted for 8.9% of the GDP and employed about 103,000 individuals in 2015. During the past 5 years, employment in the mining sector had increased by more than 35%. During the same period, Malaysia's labor force participation rate increased to 67.6% from 64.4%, and the unemployment rate remained between 2.9% and 3.2%. In 2014, Malaysia became an important source of bauxite for China's aluminum industry in response to Indonesia's ban on bauxite exports in 2014 (which remained in effect through 2015). By 2015, Malaysia accounted for 40% of China's imported bauxite compared with 10% in 2014, making Malaysia China's leading source of imported bauxite (Alumina & Aluminum Monthly, 2016, p. 18; Bank Negara Malaysia, 2016, p. 22, P5).

## Government Policies and Programs

In May, the Government of Malaysia released its Eleventh Malaysia Plan, which covers the period 2016 to 2020. In

<sup>1</sup>Where necessary, values have been converted from Malaysia ringgits (MYR) to U.S. dollars (US\$) at an annual average exchange rate of MYR4.2975=US\$1.00 for 2015.

the plan, the Government sets the goal of achieving average annual growth of the GDP of between 5% and 6% between 2016 and 2020, with an average annual increase of 9.4% in private investment and 2.7% in public investment. Although the Government expected the contributed share to the GDP by both the manufacturing and mining sectors to decrease during the next 5 years, the Government set targets of an average annual growth rate of 5.1% for manufacturing and 1.3% for mining. For the same period, the Government set the target for annual growth in the construction sector to be 10.3% and expected the value added to the economy by the construction sector to increase to 5.5% in 2020 from 4.5% in 2015. Several environmental initiatives that are likely to affect the mining industry are included in the plan. These include initiatives to improve waste management (including mining waste) by increasing recycling and the rate of waste recovery; these efforts are to be led by the National Solid Waste Management Department and the Solid Waste Management and Public Cleansing Corp. The plan also announced measures to reduce deforestation and forest degradation through stricter enforcement of existing laws. The services sector is likely to remain the dominate contributor to the GDP, as it was projected to contribute 56.5% of the GDP in 2020 compared with 53.8% in 2015 (Economic Planning Unit, 2016, p. 2–21, A1, A3).

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 States the power to issue mineral prospecting and exploration licenses and mining leases. Apart from paying a corporate tax to the Federal Government, mine and quarry operators are required to pay value-based royalties to the State in which their operation is located. Royalty rates depend on the mineral commodity and on the assessment of each of the individual States. The petroleum industry is governed by the Petroleum Development Act 1974, which established the state-owned Petroliaam Nasional Berhad (Petronas). The act grants exclusive rights in the ownership, 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 (Malaysianminerals.com, 2016a, b).

## Production

The production of bauxite rapidly increased during the past 2 years—by 1,460% in 2014 and 638% in 2015. Other notable increases in production during 2015 included that of barite, by 14%; crude petroleum and condensate, 14%; gold (mine output, Au content), 10%; and tin (mine output, Sn content), 10%.

Significant decreases in production included that of rutile (titanium), by 94%; iron ore (Fe content), 87%; niobium (columbium)-tantalum metals (stuverite, gross weight), 66%; manganese ore (gross weight), 38%; ilmenite (concentrate, gross weight), 29%; mica, 16%; and aluminum, 13% (table 1).

## Structure of the Mineral Industry

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 National Resources and Environment. Petronas, together with its subsidiaries, operated as an integrated oil and gas company in Malaysia and internationally. Petronas engaged in the exploration, development, production (liquefaction, manufacturing, and refining), transportation, and sale (trading and marketing) of crude petroleum and natural gas. It also owned and operated a network of retail stations (table 2; Bloomberg, 2015).

## Mineral Trade

In 2015, Malaysia's exports increased by 1.9% to about \$181 billion and imports increased by 0.4% to about \$160 billion. Malaysia's largest export category was electrical and electronic products, which accounted for 35.6% of the total value of exports in 2015, followed by chemicals and chemical products (7.1%), petroleum products (7.0%), and LNG (6.0%). The mining sector accounted for 10.6% of total exports and was valued at \$18.2 billion, which was a 20.5% decrease compared with that of 2014. This decrease was owing to the 20.3% decrease in crude petroleum exports and the 26.2% decrease in LNG exports, which were attributed to lower global prices of these mineral commodities (Malaysia External Trade Development Corp., 2016, p. 1, 10, 17).

The Association of Southeast Asian Nations (ASEAN) was the leading destination for Malaysia's exports, accounting for 28.1% of the total. The 2.8% increase in exports to the ASEAN in 2015 was attributed to increases in the exports of electronic integrated circuits, crude petroleum, and machinery. China was the second-ranked export market for Malaysia in 2015, and the largest total trading partner for the seventh consecutive year. Exports to China increased by 10% in 2015 owing to increases in the export of petroleum products, manufactures of metal (nonalloyed nickel), and chemicals and chemical products. Exports of mineral commodities to China increased by 53.6% owing to a significant increase in the export of bauxite. Exports to Japan, which was Malaysia's third-ranked export destination, decreased by 10.7%. Manufactured goods and mineral commodities accounted for the largest share of Malaysia's exports to Japan—53.2% and 43.3%, respectively. In 2015, exports of manufactured goods to Japan increased by 9% owing to an increase in Japanese domestic demand, whereas exports of mining goods decreased by 27.3% owing to the decline of global crude petroleum and LNG prices. Malaysia's exports to the United States were valued at \$17 billion (MYR74 billion), or about 9.4% of Malaysia's total exports. Manufactured goods

accounted for 94.8% of exports to the United States (Malaysia External Trade Development Corp., 2016, p. 2–4, 6).

In 2015, China remained Malaysia's leading source for imports, accounting for 18.9% of total imports, followed by Singapore, 12.0%; the United States, 8.1%; and Japan, 7.8%. ASEAN member countries accounted for 26.6% of Malaysia's total imports. Electrical and electronic products accounted for 29.4% of total imports, followed by chemicals and chemical products, 9.5%; and petroleum products, 9.3% (Malaysia External Trade Development Corp., 2016, p. 11, 20).

## Commodity Review

### Metals

**Aluminum.**—Press Metal Sarawak Sdn Bhd (a subsidiary of Press Metal Bhd, 80%, and Sumitomo Corp. of Japan, 20%) operated aluminum smelters at Mukah and Similajau in the State of Sarawak. In 2014, Press Metal began an expansion phase at the Similajau location with the construction of an additional aluminum smelter. Construction of the smelter was completed in 2015, and the rampup to full capacity was expected to be completed in mid-2016. With the completion of this expansion, Press Metal's total aluminum smelting capacity in Malaysia would be 760,000 metric tons per year (t/yr) (Press Metal Berhad, 2016, p. 3, 6).

**Bauxite and Alumina.**—Prior to 2014, Malaysia was a relatively minor bauxite producer, and much of its bauxite output was exported to other Asian countries. Indonesia, which had been China's leading source of bauxite, banned the export of bauxite in 2014. This gap in China's bauxite supply led to Malaysia's rapid increase in bauxite production, from 209,000 metric tons (t) in 2013 to more than 24 million metric tons (Mt) in 2015. The majority of new bauxite mines in Malaysia were opened on small plots of less than 250 hectares; mines of that size were not required to file environmental impact assessment reports. Nearly all Malaysia's bauxite output was exported to China. Bauxite mining was concentrated mainly in the State of Pahang in western Malaysia, and large amounts of stockpiles were located in and around the State's capital of Kuantan. In August, it was reported that multiple rivers in the State of Pahang had elevated levels of aluminum, arsenic, manganese, and mercury. By the end of 2015, there was increasing concern about the environmental damage caused by the rapid pace of mining and the heavy rains during the monsoon season. Malaysia's Ministry of Natural Resources and Environment had prepared regulations in response to the rapid increase in bauxite mining. As of yearend 2015, however, the regulations had not been adopted (Sipalan, 2015; Alumina & Aluminum Monthly, 2016, p. 10; BBC World News, 2016).

**Copper.**—The Mengapur polymetallic deposit is a large oxide and sulfide deposit located north of Kuantan in the State of Pahang; it contains copper, gold, silver, and sulfur. The deposit, which was originally discovered in the 1980s, was acquired by Monument Mengapur Sdn Bhd (MMSB)—a subsidiary of Monument Mining Ltd. of Canada—in 2012. Since the acquisition, the company had performed 64,000 meters of drilling to verify the historic resources. In 2014, MMSB began upgrading a 1,000-metric-ton-per-day pilot plant for copper

recovery; however, in February 2015, the company announced that the project would be suspended owing to declining global copper prices (Monument Mining Ltd., 2016a, p. 19; 2016c, d).

**Gold.**—The two largest gold-producing mines in Malaysia were the Penjom gold mine, which was owned by PT J Resources Asia Pasifik Tbk of Indonesia, and the Selinsing gold mine, which was owned by Monument; both mines are located in the State of Pahang. In September 2015, Monument announced the commissioning of a pilot plant at its Selinsing gold mine property. The pilot plant was designed to test processes intended to improve gold recovery when processing ore with highly disseminated and ultrafine gold particles known as refractory sulfide materials. In fiscal year 2015 (which ended on June 30th), about 954,156 t of ore was processed at the Selinsing gold mine, with an average ore head grade of 1.45 grams per metric ton gold resulting in the production of about 1,134 kilograms (kg) of gold dore (Monument Mining Ltd. 2015; 2016a, p. 14; 2016e).

The Penjom Mine, which began operations in 1996, was acquired by J Resources in 2011. In 2015, the mine produced about 1,200 kg of gold compared with about 1,500 kg in 2014. This decrease in production was attributed to the decline in global gold prices through the year (PT J Resources Asia Pasifik TBK, 2015, p. 23; 2016, p. 27).

**Iron and Steel.**—Malaysia's iron ore production was from small-scale mines located in the States of Johor, Pahang, Perak, and Terengganu. China was the major destination for iron ore exports from Malaysia. In 2015, Malaysia produced about 4.1 Mt of crude steel, down from 4.3 Mt of steel in 2014. For the past 4 years, Malaysia's steel production had steadily declined at an average rate of 8.7% annually. This followed the downward trend in global steel prices that began in 2011 (U.S. International Trade Administration, 2016, p. 2; World Steel Association, 2015, p. 2; 2016, p. 9).

Malaco Mining Sdn Bhp held ownership of the iron oxide minerals in the topsoil that overlays the Mengapur polymetallic deposit in areas A, B, and, C of the MMSB's Mengapur project. MMSB had managed Malaco's iron oxide operation in areas A and B of the Mengapur project since 2012. In 2014, MMSB and Malaco entered into a profit-sharing agreement in which MMSB was granted the rights to mine the iron-rich soil in area C and sell the iron recovered. Phoenix Lake Sdn Bhp (PLSB) and ZCM Minerals Sdn Bhp under a harmonization agreement with MMSB 2012, mined the iron-rich soil and purchased the resulting iron oxides from MMSB at a fixed price. In January 2015, however, PLSB and ZCM halted all mining operations at the Mengapur site. MMSB cited low iron ore prices as the reason for the halt in operations at Mengapur (table 2; Monument Mining Ltd., 2012; 2015; 2016b, p. 12).

### *Industrial Minerals*

**Cement.**—Cement Industries of Malaysia Bhd (CIMA) (United Engineers Malaysia Bhd., 53.97%, and others, 46.03%), Lafarge Malaysia Cement Bhd. (a subsidiary of LafargeHolcim Ltd. of Switzerland), and YTL Cement Bhd (a subsidiary of YTL Corp. Bhd), accounted for more than 85% of Malaysia's total cement output capacity as of yearend 2015. CIMA operated

two plants with a combined cement capacity of about 3.6 million metric tons per year (Mt/yr) and YTL Cement operated three plants with a combined capacity of 5.7 Mt/yr. In November, Lafarge Malaysia acquired Holcim (Malaysia) Sdn Bhd. This acquisition increased Lafarge Malaysia's cement capacity to 14.1 Mt/yr from 13.0 Mt/yr. Cement manufacturer CMS Cement Sdn Bhd (a subsidiary of Cahya Mata Sarawak Bhd), began construction of a third cement-grinding plant at its facility outside of Kuching, Sarawak. The new grinding plant, which was expected to begin operating in the first quarter of 2016, would increase CMS Cement's total cement production capacity to 2.75 Mt/yr (table 2; Cahya Mata Sarawak Bhd, 2015).

**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 LAMP, which began production in 2013, processed rare-earth concentrates produced at the company's Mount Weld rare-earth operation in Western Australia. In 2015, Lynas commissioned the solvent extraction circuits of the LAMP's phase 2, which followed the commissioning of the cracking and leaching and product-finishing assets of phase 2 in 2014. In October 2015, the High Court in Malaysia dismissed all remaining challenges brought by an environmental group against Lynas' temporary operating license that the company had operated under between 2012 and 2014. The group was concerned that the storing of radioactive material at the plant could lead to environmental damage and had challenged Lynas since construction of the LAMP began in 2010. Lynas produced about 10,900 t of rare-earth oxides at the LAMP in 2015. The company expected the plant to reach its full design capacity (11,000 t/yr) in early 2016 (Lynas Corp. Ltd., 2015a, p. 10; 2015b, p. 5; 2016, p. 1, 4, 5).

### *Mineral Fuels*

**Coal.**—From 2011 to 2015 coal accounted for about 18% of Malaysia's total primary energy supply, on average. In 2015, Malaysia produced 2.6 Mt of coal, which was a 4.8% decrease compared with that of 2014. Coal imports increased rapidly between 2000 and 2012, from 1.9 Mt to 14.2 Mt. In 2013 and 2014, Malaysian imports of coal decreased by 2.2% and 1.5%, respectively. Malaysia's total coal resources were about 1.9 billion metric tons (Gt), of which 281 Mt was measured, 378 Mt was indicated, and 1.3 Gt was inferred. About 1.6 Gt of the country's coal resources was located in Sarawak, and more than 360 Mt was located in Sabah (Malaysia Energy Information Hub, 2016).

### *Outlook*

According to the Eleventh Malaysia Plan, the Government expects that the agriculture, manufacturing, and mining sectors will each account for a decreasing percentage of the country's GDP, and that the construction and services sectors will account for a larger percentage of the GDP. The expected annual growth of the mining sector was 1.3% for the 2015–20 period. The rapid increase in the mining and export of bauxite is expected to continue as long as the ban on exports of bauxite remains in place in Indonesia. The Government of Malaysia may legislate



for strict regulations on bauxite mining, however, owing to increasing environmental concerns (Sipalan, 2015; Economic Planning Unit, 2016, p. 2–21).

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

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2011	2012	2013	2014	2015	
<b>METALS</b>						
<b>Aluminum:</b>						
Bauxite, gross weight	182,931	121,873	208,770	3,258,000	24,034,000	
Aluminum	--	120,000 <sup>e</sup>	290,772	400,000 <sup>r,e</sup>	350,000 <sup>e</sup>	
Gold, mine output, Au content <sup>3</sup>	kilograms	4,219	4,625	3,823	4,308 <sup>r</sup>	4,732
<b>Iron and steel:</b>						
<b>Iron ore:</b>						
Gross weight	thousand metric tons	8,078	10,886	12,134	9,615	1,535
Fe content <sup>e</sup>	do.	4,600	6,900	6,900	6,000	770
Direct-reduced iron	do.	2,876	2,329	1,399	1,007 <sup>r</sup>	1,000 <sup>e</sup>
Steel, crude	do.	5,941	5,612	4,693	4,316	4,100
Magnesium metal <sup>e</sup>		200	5,000	5,000	5,000	--
Manganese ore, gross weight		597,917	1,099,585	1,125,000 <sup>r</sup>	835,000 <sup>r,e</sup>	515,000 <sup>e</sup>
Niobium (columbium)-tantalum metals, struverite, gross weight		110	262	190	255 <sup>r,e</sup>	86 <sup>e</sup>
Silver, mine output, Ag content <sup>3</sup>	kilograms	459	1,628	361	533 <sup>r</sup>	945
<b>Tin:</b>						
Mine output, Sn content		3,340	3,725	3,697	3,777	4,158
Metal, refined		40,281	37,823	32,633	35,018	35,000
<b>Titanium:</b>						
Ilmenite concentrate, gross weight		28,782	22,275	16,043	8,159	5,814
Rutile		10,810	20,008	5,983	3,069 <sup>r</sup>	198
Zirconium, zircon concentrate, gross weight		1,685	442	379	677 <sup>r</sup>	826
<b>INDUSTRIAL MINERALS</b>						
Barite		--	--	500	14,500 <sup>r</sup>	16,600 <sup>e</sup>
Cement, hydraulic	thousand metric tons	21,198	21,726	21,457	21,700	22,000 <sup>e</sup>
Clays and earth materials	do.	28,384	30,690	28,045	31,000	31,000 <sup>e</sup>
Feldspar		379,628	482,906	348,112	378,446 <sup>r</sup>	343,317
Kaolin		405,717 <sup>r</sup>	424,622 <sup>r</sup>	263,339 <sup>r</sup>	207,694 <sup>r</sup>	255,448
Mica		4,245	3,967	4,242	5,689 <sup>r</sup>	4,788
<b>Rare earths:</b>						
Monazite and xenotime, ore, gross weight <sup>4</sup>		779	179	358	455 <sup>r</sup>	565
Refinery products, rare-earth oxide equivalent (compounds)		--	--	1,138	7,190	10,900
Sand and gravel	thousand metric tons	37,339	28,592	35,577 <sup>r</sup>	29,862 <sup>r</sup>	34,300 <sup>e</sup>
Silica sand		1,340,013	931,880	1,243,660 <sup>r</sup>	1,920,000 <sup>r,e</sup>	2,210,000 <sup>e</sup>
<b>Stone:</b>						
Aggregate	thousand metric tons	118,510	110,339	150,000 <sup>r,e</sup>	140,000 <sup>r,e</sup>	160,000 <sup>e</sup>
Dolomite <sup>e</sup>		50,000	50,000	50,000	50,000	50,000
Limestone	thousand metric tons	34,300	36,580	18,000 <sup>r,e</sup>	24,000 <sup>e</sup>	28,000 <sup>e</sup>
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Coal	thousand metric tons	2,916	2,942	2,907	2,688	2,559
<b>Gas, natural:</b>						
Marketed	million cubic meters	61,700 <sup>r</sup>	62,000	64,000 <sup>r</sup>	65,400 <sup>r</sup>	63,400
Liquefied	thousand metric tons	25,822	23,986	25,957	26,057 <sup>r</sup>	25,000 <sup>e</sup>
<b>Petroleum:</b>						
Crude and condensate	thousand 42-gallon barrels	207,696	214,317	208,141	210,000 <sup>e</sup>	240,000 <sup>e</sup>
Refinery products <sup>e</sup>	do.	215,000	215,000	215,000	215,000	215,000

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through July 26, 2016.

<sup>2</sup>In addition to the commodities listed, a variety of materials, including ammonia, copper, fertilizers, lead (secondary), and salt were produced but not reported, and available information was inadequate to make reliable estimates of output.

<sup>3</sup>Includes byproduct from tin mines in Peninsular Malaysia.

<sup>4</sup>Monazite and xenotime were recovered as byproducts of tin mining.

Sources: World Steel Association, Steel Statistical Yearbook 2015.

TABLE 2  
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(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%)	Sarawak smelter, Mukah	120.	
Do.	do.	Sarawak smelter, Similajau	450.	
Bauxite	Companies: Johore Mining and Stevedoring Co. Sdn Bhd  Golden Prosperous Good Man Venture Top International Holding Seng Hiap Metal Multiple small producers	Locations: Teluk Rumania and Sg. Rengit, Johor NA NA NA NA State of Pahang	25,000. <sup>e, 1</sup>	
Cement	Cement Industries of Malaysia Bhd. (CIMA) (United Engineers Malaysia Bhd., 53.97%, and others, 46.03%)	Kangar, Perlis	2,000 cement; 1,650 clinker.	
Do.	do.	Bahau, Negeri Sembilan	1,580 cement; 1,300 clinker.	
Do.	CMS Cement Sdn Bhd (subsidiary of Cahya Mata Sarawak Bhd)	Bintulu, Sarawak	750 cement.	
Do.	do.	Kuching, Sarawak	1,000 cement.	
Do.	Lafarge Malaysia Cement Bhd. (subsidiary of LafargeHolcim Ltd.)	Pasir Gudang, Johor	1,190 cement.	
Do.	do.	Rawang, Selangor, Langkawi, Kedah	6,810 cement; 4,900 clinker.	
Do.	do.	Kanthan, Perak, Langkawi, Kedah	5,370 cement; 3,300 clinker.	
Do.	do.	Pasir Gudang, Johor	770 cement.	
Do.	YTL Cement Bhd (subsidiary of YTL Group)	Bukit Sagu, Pahang	1,300 cement; 1,200 clinker.	
Do.	do.	Padang Rengas, Perak	3,400 cement; 3,000 clinker.	
Do.	do.	Pasir Gudang and Westport, Johor	1,000 cement.	
Do.	Tasek Corp. Bhd (publicly owned company)	Ipoh, Perak	2,300 cement; 2,300 clinker.	
Copper, Cu content	Monument Mengapur Sdn Bhd (subsidiary of Monument Mining Ltd.) <sup>2</sup>	Sri Jaya, Pahang	4.	
Gas:				
Natural	million cubic meters per day	ExxonMobil Exploration and Production Malaysia, Inc.	Offshore Terengganu	8,100.
Do.	do.	Sabah Shell Petroleum Co. Ltd.	Offshore Sabah	3.
Do.	do.	Sarawak Shell Bhd.	Offshore Sarawak	80.
Liquefied		Malaysia LNG Sdn. Bhd. [Petroliam Nasional Berhad (Petronas), 65%; Shell Gas N.V., 15%; Mitsubishi Corp., 15%; Sarawak State government, 5%]	Tanjung Kidurong, Bintulu, Sarawak	8,100.
Do.		Malaysia LNG Dua Sdn. Bhd. [Petroliam Nasional Berhad (Petronas), 60%; Shell Gas N.V., 15%; Mitsubishi Corp., 15%; Sarawak State government, 10%]	do.	7,800.
Do.		Malaysia LNG Tiga Sdn. Bhd. [Petroliam Nasional Berhad (Petronas) 60%; Shell Gas N.V., 15%; Nippon Oil LNG (Netherlands) BV, 10%; Sarawak State government, 10%; Diamond Gas Netherlands BV, 5%]	do.	6,800.
Mine output	kilograms	PT J Resources Asia Pasifik Tbk (J&Partners, L.P., 100%)	Penjom, Pahang	2,500.
Do.	do.	Monument Mining Ltd.	Bukit Selinsing Koyan, Pahang	2,000.
Do.	do.	Raub Australian Gold Mining Sdn. Bhd (Peninsular Gold Ltd., 100%)	Raub, Pahang	700.

See footnotes at end of table.

TABLE 2—Continued  
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(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	kilograms	PT J Resources Asia Pasifik Tbk (J&Partners, L.P., 100%)	Penjom, Pahang	2,500.
Do.	do.	Monument Mining Ltd.	Bukit Selinsing Koyan, Pahang	2,000.
Do.	do.	Raub Australian Gold Mining Sdn. Bhd (Peninsular Gold Ltd., 100%)	Raub, Pahang	700.
Refined	do.	Monument Mining Ltd.	Bukit Selinsing Koyan, Pahang	1,500.
<b>Iron and steel:</b>				
<b>Iron:</b>				
Direct-reduced		Lion DRI Sdn Bhd (The Lion Group)	Banting, Selangor	1,540.
Do.		Perwaja Steel Sdn. Bhd. (Kinsteel Bhd, 51%, and Maju Holdings Sdn. Bhd., 49%)	Kemaman, Terengganu	1,800.
Hot-briquetted		Amsteel Mills Sdn Bhd (The Lion Group)	Labuan Island, offshore Sabah	880.
Steel, crude		do.	Banting, Selangor	1,250.
Do.		do.	Klang, Selangor	750.
Do.		Ann Joo Steel Bhd (Ann Joo Group)	Prai, Penang	900.
Do.		Antara Steel Sdn. Bhd. (The Lion Group)	Pasir Gudang, Johor	600.
Do.		Kinsteel Sdn Bhd	Kuantan, Pahang	500.
Do.		Megasteel Sdn Bhd (The Lion Group)	Banting, Selangor	700.
Do.		Malaysia Steel Works Bhd	Bukit Raja, Selangor	450.
Do.		Perwaja Steel Sdn Bhd (Kinsteel Bhd, 51%, and Maju Holdings Sdn Bhd, 49%)	Kemaman, Terengganu	1,500.
Do.		Southern Steel Bhd. [Camerlin (a member of Hong Leong Group Malaysia), 40.75%; Natsteel Ltd., 27.03; others, 32.22%]	Prai, Penang	1,300.
Magnesium, metal		CVM Minerals Ltd.	Kamunting Raya, Perak	15.
Nitrogen, ammonia		Asean Bintulu Fertilizer Sdn. Bhd. (Petroleum Nasional Berhad (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%)	Bintulu, Sarawak	395.
Do.		Petronas Fertilizer Kedah Sdn Bhd [wholly owned subsidiary of Petroleum Nasional Berhad (Petronas)]	Gurun, Kedah	378.
Do.		Petronas Ammonia Sdn. Bhd. [wholly owned subsidiary of Petroleum Nasional Berhad (Petronas)]	Kerth, Terengganu	370.
Petroleum, crude	thousand 42-gallon barrels per day	ExxonMobil Exploration and Production Malaysia, Inc.	Offshore Terengganu	390.
Do.	do.	Sabah Shell Petroleum Co. Ltd.	Offshore Sabah	100.
Do.	do.	Sarawak Shell Bhd.	Offshore Sarawak	184.
Do.	do.	Malaysian Refining Company (MRC)	Melaka	170.
Do.	do.	Penapisan (Melaka) Sdn Bhd (PP(M)SB)	do.	130.
Do.	do.	PETRONAS Penapisan (Terengganu) Sdn Bhd (PP(T)SB)	Terengganu	124.
Do.	do.	PETRONAS Carigali Sdn Bhd	Offshore Terengganu	22.
Do.	do.	Murphy Sarawak Oil Co. Ltd.	Offshore Sarawak	15.
Rare-earth compounds (rare-earth oxide equivalent)		Lynas Corp. Ltd.	Kuantan, Pahang	11.
<b>Tin:</b>				
Concentrate	metric tons	Delima Industries Sdn Bhd	Dengkil, Selangor	1,100.
Do.	do.	Maiju Sama Sdn Bhd	Puchong, Selangor	1,600.
Do.	do.	New Lahat Mines Sdn. Bhd.	Lahat, Perak	300.
Do.	do.	Omsam Telecommunication Sdn Bhd	Bakap and Batu Gajah, Perak	500.
Do.	do.	Rahman Hydraulic Tin Bhd.	Klian Intan, Perak	3,000.

See footnotes at end of table.



TABLE 2—Continued  
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Tin:—Continued				
Do.	metric tons	S.E.K. (M) Sdn Bhd	Kampar, Perak	400.
Do.	do.	Tasek Abadi Sdn Bhd.	Senudong and Kampar, Perak	500.
Refined		Malaysia Smelting Corp. Bhd. (The Straits Trading Co. Ltd., 37.44%; Malaysia Mining Corp., 37.44%; others, 25.12%)	Butterworth, Penang	40.
Titanium dioxide		Huntsman Trioxide Sdn Bhd (a subsidiary of Huntsman Trioxide)	Kemaman, Terengganu	56.

<sup>6</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>Total capacity.

<sup>2</sup>Inactive since 2009.