



2013 Minerals Yearbook

MALAYSIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF MALAYSIA

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Malaysia's economy was dependent on exports of manufactured goods and on the service sector. The slow economic recovery in the United States and Europe affected the Malaysian economy, which grew at a moderate pace in 2013. The country's real gross domestic product (GDP) increased by 4.7% in 2013 compared with an increase of 5.6% in 2012. Malaysia's economic growth continued to be a result of increased domestic demand (business and household spending). Private investment increased by 13.6% and accounted for the major share of the growth in the GDP. Public investment increased by 0.7% in 2013 compared with a decrease in 2012 that resulted from an increase in spending on the energy and transportation sectors. The manufacturing sector grew by only 3.4%, as demand remained weak for manufactured products in most of the industrialized countries in the Western Hemisphere. The rate of growth of the construction sector increased by 10.9% as a result of the Government startup of several infrastructure projects in 2012. The output value of the mining and quarrying sector increased by 0.5% compared with 1.4% in 2012, reflecting a decrease in the production of crude oil and condensate (Bank Negara Malaysia, 2014, p. 10–20).

Minerals in the National Economy

Malaysia has identified mineral resources of barite, bauxite, clays, coal, copper, gold, ilmenite, iron ore, limestone, monazite, natural gas, petroleum, silica, silver, struverite (tantalum), tin, and zircon. During the 20th century, mineral production played an important role in Malaysia's national economy; after many years of exploitation, however, such minerals as barite, copper, ilmenite, and tin were either depleted or the capacities to produce them had decreased significantly. In terms of its contribution to the country's economy, the mining and quarrying sector accounted for 8.1% of the GDP and about 95,200 individuals were employed in this sector (Bank Negara Malaysia, 2014, p. A1; Department of Statistics, 2014a, p. 28).

Government Policies and Programs

In Malaysia, mineral sector activity 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 mineral exploration, mining, and related activities, including the authority to conduct inspections. 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 Government amended the Safeguard Act 2006 (Act 657) in 2012, and it took effect on September 1, 2013.

Production

Malaysia produced bauxite, coal, feldspar, gold, ilmenite, iron ore, mica, natural gas, petroleum, struverite (tantalum), tin, and zircon. Malaysia had been one of the major tin-producing countries in the world; owing to depleted reserves and lower ore grades, however, tin concentrate production had decreased during the past decade. The country depended on imported tin concentrates and crude tin mainly from Australia and Indonesia to meet its demand for feedstocks for its smelter and refinery. In 2013, production of such commodities as manganese increased whereas production of feldspar, iron ore, kaolin, rutile, and zirconium decreased by more than 10% (table 1).

Structure of the Mineral Industry

Malaysia's mineral industry consisted of a small mining sector for coal and ferrous and nonferrous metals. Metallic and nonmetallic mineral processing facilities were operated by private companies incorporated in Malaysia. Oil and gas exploration, production, and processing activities and facilities were owned and operated by Petroliam Nasional Berhad (Petronas), which was a state-owned company, and by joint ventures of Petronas and foreign companies. Foreign investors were permitted to have a 100% equity stake in companies operating in Malaysia or to form joint ventures with local companies (table 2).

Mineral Trade

Malaysia's major export products were automotive parts, chemicals, electronics, and machinery. The volume of mineral commodity exports has declined in recent years. In 2013, total trade increased to \$456.3 billion; of that amount, exports increased by 2.4% to \$239.9 billion and imports increased by 7.2% to \$216.4 billion. Electrical and electronic products continued to be Malaysia's leading export category and accounted for 32.9% of total exports. The export share of liquefied natural gas (LNG) and petroleum products was 7.2% and 12.9%, respectively. Malaysia exported 25.2 million metric tons (Mt) of LNG, which was an increase of 8.1% from that of 2012. LNG was exported to (in descending order of export value) Japan, the Republic of Korea, and China and accounted for 91% of the country's total LNG exports in 2013. Malaysia exported 11.8 Mt of crude oil, which was a decrease of 0.4% from the value in 2012. Crude oil was exported to (in descending order of export value) Australia, India, Thailand, Japan, China, New Zealand, and the Republic of Korea, which together accounted for 93% of the country's total crude oil exports in 2013. Malaysia's major import category was machinery and transport equipment, which accounted for 39.1% of the country's total imports. China remained Malaysia's leading trading partner in 2013 followed by Singapore and Japan (Department of Statistics, 2014b, p. 1–30).

Commodity Review

Metals

Aluminum.—Malaysia did not have an aluminum refinery, and most of its bauxite output was exported to other Asian countries. Press Metal Sarawak Sdn Bhd (a subsidiary of Press Metal Berhad) completed the construction of a 120,000-metric-ton-per-year (t/yr) aluminum smelter in Mukah in the State of Sarawak; the smelter was fully operational by the second half of 2012. The company's second smelter, which had a capacity of 320,000 t/yr and was located at Samalaju in the State of Sarawak, was fully operational in late 2013. On June 27, 2013, a statewide power outage caused significant damage to the smelter in Mukah. The production pots were solidified and the operation was forced to shut down for about 5 months to repair the damage. Japanese trading company, Sumitomo Corp., agreed to invest an additional \$140 million in Press Metal's aluminum operations and held a 20% share in both smelters. Press Metal planned to produce about 410,000 metric tons (t) and 435,000 t of aluminum in 2014 and 2015, respectively (China Metal Bulletin, 2013b; Press Metal Berhad, 2014, p. 7).

Gulf International Investment Group (GIIG) Holdings Sdn Bhd and Aluminum Corporation of China [parent company of Aluminum Corp. of China Co. Ltd. (Chalco)] signed an agreement to jointly develop an aluminum smelter in Samalaju Industrial Park at Bintulu in the State of Sarawak. The joint-venture company, Smelter Asia Sdn Bhd, would have the following three shareholders: Chalco, GIIG Holdings, and a Sarawak company. The partners signed an electricity supply agreement with Sarawak Energy Bhd, which would operate the Bakun hydroelectric plant. The initial output capacity of the smelter was planned to be 370,000 t/yr, but the partners could increase the output capacity to 700,000 t/yr if enough electricity could be supplied to the plant. Construction of the \$1.6 billion smelter was scheduled to begin in the second half of 2012, and the smelter would be put into operation in 2015. In 2013, Chalco decided to suspend its participation because of the lack of progress in finalizing the agreement (China Metal Bulletin, 2013a).

Copper.—Without any refined copper production, Malaysia relied on imported copper to meet its demand. In 2012 (the latest year for which data were available), Malaysia imported 215,041 t of refined copper and copper alloys and 13,523 t of copper scrap and exported 1,410 t of refined copper and copper alloys and 17,498 t of copper scrap. Malaysia also imported 175 t and exported 2,066 t of copper concentrates in 2012. Because Malaysia does not produce copper concentrates, its exports of copper concentrates might be transshipments from other countries; Singapore was the main destination for Malaysia's exports. In 2012, Monument Mining Ltd. of Canada, through its Malaysian subsidiary Monument Mengapur Sdn Bhd, acquired a 100% interest in the Mengapur polymetallic mine. In 2013, the company continued with evaluation work on the mine and planned to complete a resource report, which would include a preliminary economic assessment study, in 2014 (Minerals and Geoscience Department, 2013, p. 19–23; Monument Mining Ltd., 2013a, p. 2).

Gold.—Approximately 17 gold mines were operating in Malaysia; all were located in the States of Kelantan, Pahang, and Terengganu. More than 90% of mined gold was from the State of Pahang, mainly the Penjom gold mine at Penjom, the Selinsing gold mine in Bukit Selinsing Koyan, and Raub Australian Gold Mining Sdn. Bhd's gold mine in Raub. The Selinsing gold mine was a leading gold producer in the country and produced 1,648 kg (52,982 troy ounces) in 2013, which was an increase of about 19% from that of 2012. Monument Mining completed the expansion of its processing plant to 1 million metric tons (Mt/yr) from 400,000 t/yr in 2012. The plant processed more than 900,000 t of ore in 2013, which was about three times more than in previous years; however, the average head grade decreased to 2.07 grams per metric ton (g/t) from 3 to 4 g/t between 2010 and 2012. As a result, the production cost per troy ounce of gold increased to \$400 in 2013 from \$306 in 2012 (Monument Mining Ltd., 2013b).

Iron and Steel.—Malaysia's iron ore production was from small-scale mines located in the States of Johor, Pahang, Perak, and Terengganu. The low-grade iron ores were consumed by the pipe-coating industry that supplied cement plants and the oil and gas sector. The high-grade iron ore was exported to China, and the country's iron and steel producers imported their iron ore in the form of lumps and pellets and steel scrap as raw materials for steelmaking. Malaysia produced about 4.7 Mt of crude steel, which was the lowest annual output of the past 5 years. Owing to increased demand for steel products for infrastructure and housing projects, apparent steel consumption increased to about 10 Mt in 2013, which was about 1 Mt more than that of 2012. To meet the domestic demand for steel products, Malaysia imported a net of 5 Mt of steel in 2013 (Southeast Asia Iron and Steel Institute, 2014a, p. 66–69).

In February 2013, the Ministry of International Trade and Industry imposed an import tariff on 18 types of flat-steel products produced in Malaysia. Megasteel Sdn Bhd (a subsidiary of The Lion Group) subsequently asked the Malaysian Government to extend the import protections by imposing a 30% import tariff on flat-steel products for an additional 6 years. Megasteel argued that, without higher import tariffs, it would be difficult for Megasteel to secure foreign investors, which it had been seeking since 2011. Downstream steel producers, on the other hand, expressed concern about increasing import protections on any type of steel products because they feared that restricting imports would increase their costs and make their products uncompetitive on the world market (Southeast Asia Iron and Steel Institute, 2014b).

Manganese.—Malaysia's manganese resources were located in the States of Johor, Kelantan, Pahang, and Terengganu, and the manganese content was usually less than 50%. The volume of manganese output from Malaysia depended on the price of manganese in the world markets. Since 2005, with an increase in manganese prices in the world, Malaysia's manganese output had gradually increased. Without much domestic demand for manganese, the country exported nearly all its output to China. South Africa's Assmang Ltd. and African Rainbow Minerals Ltd., China Steel Corp. of Taiwan, and Sumitomo Corp. of Japan jointly formed a company, Sakura Ferroalloys Sdn Bhd, to construct a 163,000-t/yr ferromanganese plant in Sarawak.

China Steel invested \$62.5 million to secure a 19% share of the joint-venture project and to obtain between 30,000 and 32,000 t/yr of ferromanganese alloys. Sumitomo held about a 25% to 30% share in the joint venture. The remainder was held by South Africa-based companies. Construction of the plant was scheduled to start in 2014, and production was expected to begin in 2016 (Southeast Asia Iron and Steel Institute, 2013).

OM Mineral (Sarawak) Sdn Bhd, which was a joint venture between OM Holding Ltd. of Australia (80%) and Cahaya Mata Sarawak Bhd (20%), planned to build a ferroalloys plant in Samalaju Industrial Park at Bintulu in the State of Sarawak. The plant was designed to produce 308,000 t/yr of ferrosilicon in phase one and 300,000 t/yr of manganese alloy in phase two. The construction of phase one started in the second quarter of 2013, and the plant was expected to be put into operation in the third quarter of 2014. OM Mineral signed a power supply agreement with Sarawak Energy Berhad for 20 years. The cost of the phase 1 project was estimated to be \$400 million (OM Holdings Ltd., 2014, p 4).

Tin.—Malaysia's tin mines produced about 3,500 t/yr during the past several years. Resources were depleted and ore grades were lower after more than 100 years of active mining operations. The country imported tin concentrates from other countries in Asia and Africa to meet its demand. Solder production was the leading tin consuming sector in Malaysia, followed by tinplate and pewter. Tin consumption in Malaysia decreased to less than 3,000 t/yr during the past 3 years. The decrease in tin consumption was mainly the result of a decrease in demand from the solder and pewter sectors; consumption by other consumers remained at the same level during that period. Malaysia Smelting Corp. Bhd. (MSC) was Malaysia's sole integrated tin producer; it produced 32,668 t of refined tin at its Butterworth smelter in 2013, which was about 13% less than the volume it produced in 2012. MSC continued to expand its sources of tin concentrates from major tin-producing countries in the world. In 2013, Malaysia imported 30,274 t of tin concentrates compared with 26,536 t in 2012. The decrease in tin production was the result of MSC's inability to source crude tin metal for refining into high-grade tin metal and the decrease of profit margins on refining. Malaysia's refined tin exports decreased to 36,365 t in 2013 from 37,191 t in 2012 and went mainly to China, Japan, the Republic of Korea, Singapore, and Taiwan. MSC tried to extend the contract of work (CoW) with the Indonesian Government for its subsidiary PT Koba Tin; however, the attempt to extend the CoW was unsuccessful. As a result, MSC decided to shut down all mining operations in Indonesia in 2013 (Department of Statistics, 2014b, p. 26, p. 33; Malaysian Tin Bulletin, 2013; Malaysia Smelting Corp. Bhd., 2014, p. 20).

Through its subsidiary Rahman Hydraulic Tin Sdn. Bhd. (RHT), MSC acquired an 80% stake (valued at \$152,000) in SL Tin Sdn Bhd from Dayang-Dayang Sdn Bhd. SL Tin held a 15-year mining lease at Sungei Lembing in the State of Pahang, and RHT would explore tin resources at the 267-hectare lease area. Sungei Lembing had been one of Malaysia's major tin-mining areas in the 1980s (Kettie, 2014).

Industrial Minerals

Cement.—Malaysia's cement sector was dominated by three companies: Cement Industries of Malaysia Bhd., Lafarge Malaysia Cement Bhd., and YTL Cement Berhad; together, these companies accounted for about 78% of the country's total cement output capacity. Cement consumption in Malaysia has fluctuated between 16 and 17 Mt/yr during the past 5 years. West Malaysia had one of the most developed infrastructures in the country, but east Malaysia remained relatively undeveloped. Under the 10th Malaysia Plan and Economic Transformation program, the Government planned to build the east coast highway from Jabur to Kuala Terenggaru and to improve rural infrastructure. Together with ongoing construction of commercial properties, the demand for cement was expected to increase during the next several years. KHD Humboldt Wedag International AG was awarded a contract by YTL Group to build YTL's fourth integrated cement plant, which would be located near Kuantan in the State of Pahang. The new plant would have a design capacity to produce 5,000 metric tons per day. The new plant was expected to be put into operation in 2014. The plant would be equipped with the latest technological advancements to meet European standards for lower nitrogen oxide emissions and more energy-efficient operations (YTL Corporation. Berhad, 2013, p. 14).

Rare Earths.—Globally, the production and resources of rare earths were dominated by China. Lynas Corp. Ltd. of Australia mined the rare-earth deposit at Mount Weld in Western Australia and shipped rare-earth concentrates to Malaysia for further processing. Lynas secured approval from the Malaysian Government to build an advanced materials plant in the Gebeng III Industrial Area, which is located near the Port of Kuantan in the State of Pahang. The construction of the plant was scheduled to be completed in late 2011, but the completion date was postponed to 2012. The plant would have an initial output capacity of 11,000 t/yr of rare-earth-oxide-equivalent products. The company faced technical problems with the cracking and leaching units at the plant. As a result, the volume of output was much less than its designed capacity. The company planned to complete the debottlenecking of these technical problems by the end of 2013. Local residents continued to object to the rare-earth plant in their area because they worried about the safety of storing low-level radioactive waste that could cause lasting environmental damage. The Malaysia Parliamentary Committee approved the issuance of a temporary operating license to Lynas. In 2013, local residents asked Lynas to provide information about the company's plans for a permanent waste storage facility, but the company refused to provide the information. Once Lynas submits its plans for a permanent waste storage facility and receives approval from the Government, the Government is likely to issue Lynas a permanent operating license (Lynas Corporation Ltd., 2014, p. i).

Mineral Fuels

Coal.—Malaysia's coal resources are located in the States of Perak, Perlis, Sabah, Sarawak, and Selangor, but mining and exploration for coal were conducted only in Sarawak. Coal was

produced from the areas of Bintulu, Merit-Pila, Silantek, and Tutoh in the State of Sarawak. The country has coal resources of about 1.9 billion metric tons (Gt), of which 281 Mt was measured, 378 Mt was indicated, and 1.3 Gt was inferred. About 1.5 Gt of the country's coal resource is located in Sarawak, and more than 300 Mt is located in Sabah. Owing to the lack of infrastructure, most of the coal in the interior areas of the country had not been exploited. Coal resources located in Sabah were in the Maliau Basin Conservation area, which the Government had designated as a protected area (Minerals and Geoscience Department [Malaysia], 2013, p. 106).

Natural Gas and Petroleum.—Malaysia remained a net exporter of natural gas and crude oil. The increase in natural gas production was a result of the growth in external demand for LNG from China and Japan. The Malaysian Government offered incentives for companies to explore deeper and less-profitable fields in a bid to increase reserves as energy demand increases. Twelve new fields were brought onstream in 2013, which included the Berantai field in Peninsular Malaysia and the Gumusut-Kakap and Kanowit deepwater fields in Sarawak (Petroleum Nasional Berhad, 2014, p. 45–49).

Outlook

Malaysia's economy is projected to grow at a slower rate during the next 3 years than in the previous several years because of the projected slow recovery of the global economy. Private and public spending, however, will likely continue to support economic growth. The Government is aware of the country's need to reduce its dependence on external markets and to produce a more diversified range of goods for export. To improve the investment climate and build a more competitive economy, the Government plans to privatize state-owned companies, sell Government land, and reassess Government subsidies. The Government plans to further relax some rules regarding foreign investment in Malaysian companies and properties, initial public offerings, and the financial sector. The construction sector is expected to expand as a result of increased investment by the Government in infrastructure under the Tenth Malaysia Plan, and the demand for construction steel

products will also likely increase. Several natural gas and oil projects are set to come onstream to replace maturing fields during the next several years.

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TABLE 1
MALAYSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2009	2010	2011	2012	2013	
METALS						
Aluminum:						
Bauxite, gross weight	263,432	124,274	188,141	121,873	208,770	
Aluminum metal	--	--	--	120,000 ^{r,e}	290,772	
Copper, mine output, Cu content	240	--	--	--	--	
Gold, mine output, Au content ³	kilograms	2,794	3,765	4,219	4,625	3,822
Iron and steel:						
Iron ore:						
Gross weight	1,470,186	3,465,895	8,077,879	12,143,987 ^r	12,133,556	
Fe content ^e	838,000	1,970,000	4,600,000	6,900,000	6,900,000	
Pig iron, direct-reduced iron, and hot-briquetted iron	thousand metric tons	2,388	2,390	2,876	2,329	1,399
Steel, crude	do.	5,354	5,693	5,941	5,612	4,693
Magnesium metal ^e	--	--	200	5,000	5,000	
Manganese, gross weight	468,963	899,703	597,917	1,099,585	1,125,127	
Niobium (columbium)-tantalum metals, struverite, gross weight	176	84	110	262	190	
Silver, mine output, Ag content ³	kilograms	367	436	459	1,678	361
Tin:						
Mine output, Sn content	2,412	2,668	3,340	3,726	3,697	
Metal, refined	36,407	38,737	40,267	37,792	32,668	
Titanium:						
Ilmenite concentrate, gross weight	15,983	19,036	28,782	22,275	16,043	
Rutile	1,502	7,567	10,810	20,008	5,983	
Zirconium, zircon concentrate, gross weight	1,145	1,267	1,685	442	379	
INDUSTRIAL MINERALS						
Barite	22,390	1,000	--	--	--	
Cement, hydraulic	thousand metric tons	19,457	19,762	21,198	21,726	21,457
Clays and earth materials	do.	22,966	27,543	28,384	30,690 ^r	28,045
Feldspar	410,053	455,497	379,628	482,906	314,399	
Kaolin	487,632	530,331	442,500	438,923 ^r	293,480	
Mica	4,323	4,515	4,245	3,967	4,363	
Rare earths, monazite and xenotime, gross weight	25	732	779	179	358	
Sand and gravel	thousand metric tons	17,382	30,678	37,339	28,592 ^r	35,552
Silica sand	630,394	932,159	1,340,013	931,880	1,243,660	
Stone:						
Aggregate	thousand metric tons	86,497	101,809	118,510	110,339 ^r	100,000 ^e
Dolomite ^e	49,000	50,900	50,000	50,000	50,000	
Limestone	thousand metric tons	35,808	32,398	34,300	36,580 ^r	35,000 ^e
MINERAL FUELS AND RELATED MATERIALS						
Coal	2,138,390	2,397,340	2,915,788	2,941,620 ^r	2,893,962	
Gas, natural:						
Gross	million cubic meters	65,000	72,000	73,000	74,000	74,000
Net ⁴	do.	58,560	61,136	61,400	62,000	62,000
Liquefied natural gas	thousand metric tons	22,452	24,363	25,822	23,986	25,957
Petroleum:						
Crude and condensate	thousand 42-gallon barrels	240,479	232,100	207,696	214,317 ^r	208,141
Refinery products ^e	do.	200,000	210,000	215,000	215,000	215,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through September 5, 2014.

²In addition to the commodities listed, a variety of materials, which include ammonia, fertilizers, lead (secondary), and salt, were produced but not reported, and information is inadequate to make reliable estimates of output.

³Includes byproduct from tin mines in Peninsular Malaysia and gold mines in Peninsular Malaysia and the State of Sarawak.

⁴Includes production from Peninsular Malaysia and the States of Sabah and Sarawak.

Sources: Ministry of Primary Industry, Minerals and Geoscience Department (Kuala Lumpur), Malaysian Minerals Yearbook 2012; U.S. Geological Survey Minerals Questionnaire, 2014; and Southeast Asia Iron and Steel Institute, Steel Statistical Yearbook, 2013.

TABLE 2
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(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)	Mukah, Sarawak	120.
Do.		do.	Samalaju, Sarawak	320.
Bauxite		Johore Mining and Stevedoring Co. Sdn Bhd	Teluk Rumania and Sg. Rengit, Johor	400.
Cement ¹		Cement Industries of Malaysia Bhd. (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.		Holcim (Malaysia) Sdn Bhd (Holcim Ltd.)	Pasir Gudang, Johor	1,300 cement.
Do.		Lafarge Malaysia Cement Bhd. (subsidiary of Lafarge S.A.)	Rawang, Selangor	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 Berhad (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, mine		Monument Mengapur Sdn Bhd (subsidiary of Monument Mining Ltd.)	Sri Jaya, Pahang	4.
Gas:				
Natural	million cubic meters per day	ExxonMobil Exploration and Production Malaysia, Inc.	Offshore Terengganu	45.
Do.	do.	Sabah Shell Petroleum Co. Ltd.	Offshore Sabah	3.
Do.	do.	Sarawak Shell Bhd.	Offshore Sarawak	80.
Liquefied		Malaysia LNG Sdn. Bhd. [Petroleum 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. [Petroleum 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. [Petroleum 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.
Gold, refined	kilograms	PT J Resources Asia Pasifik Tbk (J&Partners, L.P., 100%)	Penjom, Pahang	4,000.
Do.	do.	Raub Australian Gold Mining Sdn. Bhd (Peninsular Gold Ltd., 100%)	Raub, Pahang	500.
Do.	do.	Monument Mining Ltd. of Canada	Bukit Selinsing Koyan, Pahang	1,500.
Iron and steel:				
Direct-reduced iron		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 iron		Amsteel Mills Sdn Bhd (The Lion Group)	Labuan Island, offshore Sabah	880.

See footnotes at end of table.

TABLE 2—Continued
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
<u>Iron and steel—Continued:</u>				
Crude steel		Amsteel Mills Sdn Bhd (The Lion Group)	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, Johr	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%)	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%]	Prai, Penang	1,300.
Magnesium, metal	metric tons	CVM Minerals Ltd.	Kamunting Raya, Perak	15,000.
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)	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.	Petronas Carigali Sdn Bhd	Offshore Terengganu	22.
Do.	do.	Murphy Sarawak Oil Co. Ltd.	Offshore Sarawak	15.
Rare earths (REO equivalent)		Lynas Corp. Ltd. of Australia	Kuantan, Pahang	11.
<u>Tin:</u>				
Concentrate		Delima Industries Sdn Bhd	Dengkil, Selangor	1.1.
Do.		Maiju Sama Sdn Bhd	Puchong, Selangor	1.6.
Do.		New Lahat Mines Sdn. Bhd.	Lahat, Perak	0.3.
Do.		Omsam Telecommunication Sdn Bhd	Bakap and Batu Gajah, Perak	0.5.
Do.		Rahman Hydraulic Tin Sdn. Bhd.	Klian Intan, Perak	3.
Do.		S.E.K. (M) Sdn Bhd	Kampar, Perak	0.4.
Do.		Tasek Abadi Sdn Bhd.	Senudong and Kampar, Perak	0.5.
Refined		Malaysia Smelting Corp. Bhd. (MSC) (The Straits Trading Co. Ltd., 37.44%; Malaysia Mining Corp., 37.44%; others, 25.12%)	Butterworth, Penang	35.
Titanium dioxide		Huntsman Trioxide Sdn Bhd (a subsidiary of Huntsman Trioxide)	Kemaman, Terengganu	56.

Do., do. Ditto.

¹All companies operated integrated plants.