



2010 Minerals Yearbook

MALAYSIA

THE MINERAL INDUSTRY OF MALAYSIA

By Pui-Kwan Tse

Malaysia's economy was dependent on exports of manufactured goods and on the service sector. The slow recovery in the world economy helped the Malaysian economy grow at a moderate pace in 2010. The country's gross domestic product (GDP) increased by 7.2% compared with that of 2009. Malaysia's economic growth was driven mainly by domestic demand, especially in the private sector. Private investment increased by 13.8%, and public investment increased by 5.5%. These investments led to the expansion of capital spending, especially in the manufacturing, mining, and service sectors. The manufacturing sector's share of the overall investment in the economy decreased to 54.7% in 2010 from 64.0% in 2000 whereas the service sector's share increased to 30.7% from 25.5% because the Government promoted the service sectors as one of the nation's 12 key economic areas. The mining sector's share of the overall investment in the economy increased to 6.6% in 2010 from 3.2% in 2000. Investment in the mining sector was mainly for the exploration and production of natural gas and oil (Department of Statistics, 2011, p. xxi–xxiv).

Minerals in the National Economy

Malaysia's identified mineral resources were barite, bauxite, clays, coal, copper, gold, ilmenite, iron ore, 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, such minerals as barite, bauxite, copper, ilmenite, iron ore, and tin were either depleted or the capacities to produce them had decreased significantly in recent years. In terms of its contribution to the country's economy, the mining and quarrying sector accounted for 7.0% of the GDP in 2010 compared with 8.8% in 2006. About 14,000 people were employed in the mining and quarrying sector in 2009 (Department of Statistics, 2011, p. 241).

Government Policies and Programs

In Malaysia, the mineral activities are 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.

In 2010, the Government reviewed its Tenth Malaysia Plan (2011–2015). The main goal of the plan is to sustain annual

GDP growth at an average rate of 6% and gradually to reduce the budget deficit to less than 3% of the GDP by 2015. The plan also identifies the important strategic reform areas, including enhancing private sector participation in the economy, improving workforce skills, supporting innovation, developing new sources of growth, and strengthening public sector management. Research and development were expected to lead to new applications, innovations, and technologies that could help reduce production costs and be used to create value-added mineral products. The Government planned to establish a mineral industry training fund that would be used to upgrade the skills of workers (Economic Planning Unit, The, 2010, p. 9–31).

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 in recent years. 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 2010, production of such commodities as gold, ilmenite, iron ore, kaolin, manganese, monazite, rutile, silica sand, and tin increased by more than 10% whereas production of barite, bauxite, and struverite (tantalum) decreased by more than 10% (table 1).

Structure of the Mineral Industry

Malaysia's mineral industry consisted of a small mining sector of 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 were owned and operated by Petroliaam Nasional Berhad (Petronas), which was a state-owned company, and by joint ventures of Petronas and foreign companies (table 2).

Mineral Trade

The major export products were automotive parts, chemicals, electronics, and machinery. The volume of mineral commodity exports had declined in recent years. In 2010, the total trade increased to \$354.1 billion; of that amount, exports increased by 15.6% to \$193.8 billion and imports increased by 21.7% to \$160.3 billion. Electrical and electronic products continued to be Malaysia's leading export category and accounted for 39.1% of the total exports. Owing to a moderate increase in price on the world markets, the country's crude oil export revenue increased by 21.3% to \$9.3 billion; however, its export volume decreased

by 0.1% to 16.4 million metric tons (Mt). As a result of the moderate price increase, the export revenue of liquefied natural gas (LNG) increased by 31.1% to \$11.5 billion, and the export volume increased by 6.6% to 23.3 Mt. Crude oil was shipped mainly to Australia, India, and Thailand. LNG was exported mainly to China, Japan, and the Republic of Korea (Department of Statistics, 2011, p. 184–190).

Commodity Review

Metals

Aluminum.—Gulf International Investment Group (GIIG) Holdings Sdn Bhd and Aluminum Corporation of China [a 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 a 600-megawatt-hour-per-hour (MWh/hr) 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 metric tons per year (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. Chalco would have the option to purchase all the smelter's aluminum output. This would be the second aluminum smelter to be built in Samalaju Industrial Park after the Sarawak Aluminum Co.'s aluminum smelter (construction of which began in 2008), which was jointly owned by Cahya Mata Sarawak Berhad and Rio Tinto Alcan. Sarawak Aluminum was discussing the price of electricity to be supplied from Bakun with the Sarawak government (China Metal Bulletin, 2011).

Copper.—Without any refined copper production, the country relied on imported copper to meet its demand. In 2009 (the latest year for which data were available), Malaysia imported 31,114 metric tons (t) of refined copper and copper alloys and 8,902 t of copper scrap and exported 4,079 t of refined copper and copper alloys and 24,759 t of copper scrap. In 2006, Malaco Mining Sdn Bhd explored for copper and gold in the State of Pahang. After 3 years of exploration, Malaco discovered the copper deposit at Sri Jaya, and the Mengapur Mine began production in 2009. Monument Mining Ltd. of Canada through its subsidiary Monument Mengapur Sdn Bhd in Malaysia agreed to acquire 70% interest in the Mengapur polymetallic mine. The mine had a 500,000-t/yr flotation plant that produced about 4,000 t/yr of copper-in-concentrate (Minerals and Geoscience Department, 2010, p. 18–22; Monument Mining Ltd., 2011).

Gold.—Approximately 12 gold mines were operating in the country; all were located in the States of Kelantan, Pahang, and (or) Terengganu. More than 90% of mined gold was from the State of Pahang, mainly the Penjom Gold Mine, which was owned by Specific Resources Malaysia Sdn. Bhd. (a wholly owned subsidiary of Avocet Mining plc of the United Kingdom). The Penjom mine was in its 14th year of operation. In 2010,

the mine produced 1.59 t (51,084 troy ounces) of gold. The average ore grade was 2.56 grams per metric ton (g/t) gold and the recovery rate was 83%. The company estimated that the mine's reserves would be depleted by 2018. Avocet Mining decided to concentrate its mining effort in the Africa region and sold its assets in Southeast Asia to J & Partners, L.P. (a private company registered in the Cayman Islands) for \$200 million. The transaction was expected to be completed in 2011 (Avocet Mining plc, 2011, p. 22).

Peninsular Gold Ltd. of the United Kingdom through its subsidiary Raub Australian Gold Mining Sdn. Bhd. conducted a gold development project at Raub in the State of Pahang. The area around Raub had been the site of extensive gold mining in the past. The company identified 6.3 t (202,000 troy ounces) of gold in 8.6 Mt of tailings. The company completed the construction of a 1.1-Mt/yr-capacity carbon-in-leach processing plant to recover gold from the tailings in 2009. In 2010, the company recovered 485 kg (15,608 troy ounces) of gold with an average grade of 0.6 g/t from the tailings, which was 0.1 g/t lower than overall tailings average. The average production cost per ounce was \$614. The company planned to expand the capacity of the processing plant to 2 Mt in 2011. The company believed that Tersang could potentially have up to 31.2 t (1 million troy ounces) of gold. The Pahang government approved Peninsular Gold's applications for two new tenements—Kg. Tersang, Mukim Batu Talam, in Raub and Sg. Tenggelan, Mukim Telang, in the district of Lipis (Peninsular Gold Ltd., 2010a, b; 2011).

Iron and Steel.—Malaysian 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. The country imported high-grade iron ore from, in descending order of amount received, Brazil, Chile, Mexico, and Bahrain. The local steelmakers urged the Government to impose a 30% export tax on iron ore so that local integrated steel producers could import less iron ore from overseas for their operations. Malaysian steel producers planned to invest about \$1.5 billion to expand iron production to 3.2 Mt. The Malaysian Iron and Steel Federation (MISF) estimated that the country's steel consumption increased by about 24% to 8.2 Mt in 2010 (Southeast Asia Iron and Steel Institute, 2010a, 2011).

In November 2010, nine integrated steel producers jointly formed the Malaysia Steel Association. The aim of the association was to represent the interests of the country's upstream steel producers. The nine producers—Amsteel Mills Sdn Bhd, Ann Joo Integrated Steel Sdn Bhd, Ann Joo Steel Bhd, Antara Steel Sdn Bhd, Kinsteel Bhd, Malaysia Steelwork (KL) Bhd, Megasteel Sdn Bhd, Perfect Channel Sdn Bhd, and Pwrwaja Holdings Sdn Bhd represented about 85% of the country's steel production. The Association urged the Government to control the rising cost of energy and address the lack of control on scrap exports. Before 2010, the Malaysian Iron and Steel Industry Federation had represented the upstream and downstream steel producers for 40 years (Southeast Asia Iron and Steel Institute, 2010c).

Eastern Steel Sdn Bhd, which was a subsidiary of Hiap Teck Venture Bhd, planned to build a 5-Mt/yr integrated iron and

steel plant at Teluk Kalung Industrial Estate, Mukim Teluk Kalung, Kemaman, State of Terengganu. In the first phase, the plant would have the capacity to produce of 1.7 Mt/yr pig iron, 1.95 Mt/yr of steel products, and 2 Mt/yr of crude steel. The company signed a contract with China Shougang International Trade and Engineering Group (a subsidiary of Shoudu Iron and Steel Corp.) to design and construct a 700,000-t/yr iron and steel mill. The mill was scheduled to be in operation by 2013. Shougang planned to acquire a 45% interest in Eastern Steel (Ere Consulting Group Sdn Bhd, 2009, p. 3; Southeast Asia Iron and Steel Institute, 2010b).

Magnesium.—CVM Minerals Ltd. (a subsidiary of Ho Wah Genting Bhd of Malaysia, which was incorporated in Hong Kong) started the construction of a magnesium smelter at the Kamunting Raya Industrial Park in the State of Perak. The 30,000-t/yr Pidgeon process smelter was designed by Beijing Tiefertech Engineering Co. Ltd. The construction of the smelter was divided into two phases. The first-phase construction of a 15,000-t/yr production line had been completed in June 2010. The raw material (dolomite) was sourced from CVM's Dolomite Hills, which is located about 60 km from the smelter and which had ore resources of 20 Mt. The company did not release magnesium ingot output data for 2010 (CVM Minerals Ltd., 2011, p. 7).

Manganese.—OM Materials (Sarawak) Sdn Bhd (a subsidiary of OM Holdings Ltd. of Australia) planned to build a ferroalloys plant at Samalaju Industry Park in the State of Sarawak. The plant was designed to produce 300,000 t/yr of ferromanganese alloys and 300,000 t/yr of ferrosilicon alloys. The company discussed a 500-MWh/hr electricity supply agreement with Syarikat SESCO Bhd. The bankable feasibility study, which included, an environmental impact assessment, was expected to be completed at yearend 2011. The total investment was estimated to be \$450 million (OM Holdings Ltd., 2011).

Tin.—Owing to depleted resources and lower ore grades after more than 100 years of active mining operations, Malaysia's tin mine production decreased to about 2,700 t in 2010 from more than 6,000 t in 2000. 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 was about 3,000 t/yr during the past 4 years. The decrease in tin consumption was mainly from the solder and the 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 38,737 t of refined tin at its Butterworth smelter in 2010, which was about 6.4% more than it produced in 2009. The increase in tin production was a result of MSC's ability to source raw material from overseas markets. In 2010, Malaysia imported 30,589 t of tin concentrates compared with 22,928 t in 2009. Malaysia exported a total of 33,698 t of refined tin mainly to Japan, the Republic of Korea, Singapore, and Taiwan (Malaysia Smelting Corp. Bhd., 2011, p. 18–19; Malaysian Tin Bulletin, 2011a).

MSC and Traxys SA of Luxembourg were discussing forming a partnership to develop a tin mine in the Democratic Republic of the Congo [Congo (Kinshasa)]. MSC and the Congolese

Government intended to take over the mineral assets of Sakima (the state mining company) in the Maniema, North Kivu, and South Kivu Provinces in Congo (Kinshasa). The Government of Congo (Kinshasa) wanted to replace small-scale mining with large-scale mining operations and to improve labor conditions and state revenues. MSC imported about 15% of its tin concentrates from Congo (Kinshasa) in 2010 (Malaysian Tin Bulletin, 2011b).

Industrial Minerals

Rare Earths.—Globally, the production and resources of rare earths were dominated by China. Lynas Corp. Ltd. of Australia planned to develop the rare-earth deposit at Mount Weld in Western Australia and to ship 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 underway and was scheduled to be completed in late 2009. Owing to financial problems, the company suspended the construction of the concentration plant in Australia and the advanced materials plant in Malaysia in February 2009. After the company issued new shares in Lynas to raise funds in the stock exchange, the construction work restarted in November 2009, and the plant was scheduled to be put into operation in 2011. The plant would have an initial output capacity of 11,000 t/yr of rare-earth-oxide-equivalent products. Local residents objected to the construction of 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. They feared that the Lynas's plant would be a repeat of the Mitsubishi Chemical rare-earth plant in the area, which was shut down in 1992. The Government decided to withhold issuing a final permit. The Government invited experts from the International Atomic Energy Agency to review the rare-earth project. Lynas put construction of the rare-earth separation plant on hold (Industrial Minerals, 2011; Lynas Corp. Ltd., 2011, p. 3).

Mineral Fuels

Coal.—Malaysia's coal resources are located in the States of Perak, Perlis, Sabah, Sarawak, and Selangor. 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. Mining and exploration for coal were conducted only in Sarawak. Power-generating plants consumed about 70% of the total supply of coal (domestic production and imports), and the remaining supply was consumed by the cement and iron and steel sectors. Despite Malaysia's position as a natural

gas exporter, Tenaga Nasional Berhad planned to decrease the use of natural gas at its powerplants to 49% from 72% and to shift to the use of coal because of a shortage in the supply of natural gas in the domestic market. Coal demand for powerplants would likely increase; as a result, coal consumption was expected to increase to 19.5 Mt in 2010. The supply of domestic coal would likely not be sufficient to meet the demand, and the country was expected to increase coal imports to fill the gap. In 2009 (the latest year for which data were available), Malaysia imported 9.5 Mt of coal, which was about 5 Mt more than in 2008. Coal imports from Indonesia accounted for 81.7% of the total imports followed by Australia, 9.8%; South Africa, 3.3%; Vietnam, 2.4%; and others, 2.8% in 2009. Coal consumption was expected to increase during the next several years because the demand for electricity was expected to increase and the Government planned to build another coal-fired powerplant (Minerals and Geoscience Department, 2010, p. 99–100).

Natural Gas and Petroleum.—Malaysia remained a net exporter of natural gas and crude oil. Production of natural gas increased by about 7% to 62.7 billion cubic meters in 2010. The increase in natural gas production was caused by the growth of external demand for LNG from China and Japan. Production of crude oil and condensate decreased slightly in 2010 compared with that of 2009. Lundin Petroleum of Sweden and state-owned Petronas discovered natural gas resources in the eastern area offshore Sabah. These discoveries were expected to enhance the exploration potential offshore Sarawak. The Malaysian Government offered incentives for companies to explore deeper and less-profitable fields in a bid to increase reserves as energy demand increased (Bank Negara Malaysia, 2011, p. 34).

Outlook

With the global economy recovering only slowly, Malaysia's economy is projected to grow at a slower rate during the next 3 years than in the previous several years. Private and public spending, however, will likely continue to support economic growth. The Government is aware of the country's economic 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 during the next several years. In accordance with the National Depletion Policy, the production of oil is expected to decrease or to remain at the same level as in previous years (Economic Planning Unit, The, 2010).

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TABLE 1
MALAYSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2006	2007	2008	2009	2010
METALS					
Aluminum, bauxite, gross weight	91,806	156,785	295,176	263,432	124,274
Copper, Cu content	--	--	--	240	250 ^e
Gold, mine output, Au content ³	3,497	2,913	2,489	2,794	3,766
Iron and steel:					
Iron ore, gross weight	667,082	802,030	981,932	1,470,186	3,465,895
Pig iron, direct-reduced iron, and hot-briquetted iron	1,277	1,872	1,957	2,388	2,390
Steel, crude	5,834	6,895	6,423	5,354 ^f	5,693
Lead metal, secondary ^e	73,000	73,000	73,000	72,000	72,000
Manganese, gross weight	6,500	56,500	536,675	468,963	899,703
Niobium (columbium)-tantalum metals, struverite, gross weight	93	52	216	176	84
Silver, mine output, Ag content ³	410	295	349	367	354
Tin:					
Mine output, Sn content	2,398	2,263	2,605	2,412	2,668
Metal, smelter	22,850	25,471	31,691	36,407	38,737
Titanium:					
Ilmenite concentrate, gross weight	45,649	59,310	36,779	15,983	19,064
Rutile	16,921	1,450	1,834	1,502	7,567
Dioxide ^e	56,000	56,000	56,000	56,000	56,000
Zirconium, zircon concentrate, gross weight	1,690	7,393	984	1,145	1,261
INDUSTRIAL MINERALS					
Barite	910	--	4,372	22,390	1,000 ^e
Cement, hydraulic	19,457	21,909	19,629	19,457	19,762
Clays and earth materials	25,081	28,291 ^f	25,065	22,966 ^f	25,000 ^e
Feldspar	142,358	358,775	457,377	410,053 ^f	438,846
Kaolin	341,223	587,508	506,462	487,632 ^f	530,331
Mica	5,152	6,118	5,593	4,323	4,415
Nitrogen, N content of ammonia	950,000	950,000	950,000	950,000	950,000
Rare-earth metals, monazite, gross weight	894	682	233	25	732
Sand and gravel	25,225	22,370	24,472	17,382 ^f	29,374
Silica sand, Peninsular Malaysia and Sarawak	512,277	719,221	1,466,904	630,394 ^f	932,159
Stone:					
Aggregate	79,912	79,118	75,883	86,497 ^f	75,000 ^e
Dolomite	37,702	49,320	57,900	49,000 ^e	49,000 ^e
Limestone	33,471	33,688	35,228	35,808 ^f	34,000 ^e
MINERAL FUELS AND RELATED MATERIALS					
Coal	901,801	1,074,936	1,166,525	2,138,390 ^f	2,397,340
Gas, natural:					
Gross	70,191	71,170	68,000	65,000	73,000
Net ⁴	59,668	60,804	61,004	58,560	62,670
Liquefied natural gas	21,948	22,900	23,422 ^f	22,452 ^f	24,363
Petroleum:					
Crude and condensate	243,455	249,295	251,811	240,479 ^f	232,100
Refinery products ^{e,5}	208,000	220,000	210,000	200,000	210,000

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

¹Table includes data available through October 5, 2011.

²In addition to the commodities listed, a variety of crude construction materials, which include clays and stone, fertilizers, and salt, is 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.

⁵Gross less volume of reinjected and flared.

Sources: Ministry of Primary Industry, Minerals and Geoscience Department (Kuala Lumpur), Malaysian Minerals Yearbook 2009; U.S. Geological Survey Minerals Questionnaire, 2010; and Southeast Asia Iron and Steel Institute, Steel Statistical Yearbook, 2010.

TABLE 2
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
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, and Bahau, Negeri Sembilan	3,400 cement; 2,800 clinker.
Do.		CMS Cement Sdn Bhd (subsidiary of Cahya Mata Sarawak Bhd)	Bintulu and Kuching, Sarawak	1,750 cement; 600 clinker.
Do.		Holcim (Malaysia) Sdn Bhd (Holcim Ltd.)	Pasir Gudang, Johor	1,200 cement.
Do.		Lafarge Malayan Cement Bhd. (subsidiary of Lafarge S.A.)	Rawang, Selangor; Kanthan, Perak, Langkawi, Kedah; and Pasir Gudang, Johor	12,950 cement; 8,200 clinker.
Do.		YTL Cement Berhad (subsidiary of YTL Group)	Bukit Sagu, Pahang; Padang Rengas, Perak; and Pasir Gudang and Wesport, Johor	5,700 cement; 4,200 clinker.
Do.		Perak-Hanjoong Simen Sdn. Bhd. (Gopeng Bhd., 45%, and Korea Heavy Industries and Construction Co. and others, 55%)	Padang Rengas, Perak	3,400 cement; 3,000 clinker.
Do.		Tasek Corp. Bhd (publicly owned company)	Ipoh, Perak	2,300 cement; 2,300 clinker.
Copper, mine		Malaco Mining Sdn Bhd	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, 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, 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, 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	Specific Resources Malaysia Sdn. Bhd. (Avocet Mining Plc)	Penjom, Pahang	4,000.
Iron and steel:				
Direct-reduced iron		Lion DRI Sdn Bhd (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 (Lion Group)	Labuan Island, offshore Sabah	880.
Crude steel		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. (Lion Grop)	Pasir Gudang, Johr	600.
Do.		Kinsteel Sdn Bhd	Kuantan, Pahang	500.
Do.		Megasteel Sdn Bhd (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		CVM Minerals Ltd.	Kamunting Raya, Perak	15,000.

See footnotes at end of table.

TABLE 2—Continued
MALAYSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Nitrogen, ammonia		Asean Bintulu Fertilizer Sdn. Bhd. (Petroliam Nasional Berhad, 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 Petroliam Nasional Berhad)	Gurun, Kedah	378.
Do.		Petronas Ammonia Sdn. Bhd. (wholly owned subsidiary of Petroliam 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.	do.	do.	184.
Do.	do.	Petronas Carigali Sdn. Bhd.	Offshore Terengganu	22.
Do.	do.	Murphy Sarawak Oil Co. Ltd.	Offshore Sarawak	15.
Tin:				
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 Bhd.	Klian Intan, Perak	1.2.
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. (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 Tiioxide)	Kemaman, Terengganu	56.

Do., do. Ditto.

¹All companies operated integrated plants.