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2016 Minerals Yearbook

THAILAND [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

March 2021

The Mineral Industry of Thailand

By Yolanda Fong-Sam

In 2016, Thailand was one of the world's leading producers of gypsum (was the 4th-ranked world producer, with 4% of world production), feldspar (5th-ranked, with 6% of world production), rare earths (5th-ranked, with 1% of world production), barite (8th-ranked, with 3% of world production), and fluorspar (11th-ranked, with almost 1% of world production). Thailand's metal-mining industry produced such metals as antimony, gold, iron and steel, lead, manganese, silver, tin, tungsten, and zinc. In addition, Thailand produced a variety of industrial minerals and mineral products, such as cement, clay, and salt (table 1; Crangle, 2018; Gambogi, 2018; McRae, 2018; Singerling, 2018; Tanner, 2018).

Minerals in the National Economy

In 2016, Thailand's real gross domestic product (GDP) was $1.2 trillion dollars, which represented a growth rate increase of 3.2% compared with an increase of 2.8% in 2015. Although the GDP increased in 2016, the country's economy faced challenges, such as severe droughts, economic uncertainty, and modest trade, according to the Bank of Thailand. In 2016, about 66,470 people, or less than 1% of the total labor force, were employed in the mining and quarrying industry, which was a 16% decrease compared with the number employed in the industry in 2015. The total foreign direct investment (FDI) in Thailand decreased by about 6% compared with that of 2015, to about $199.9 billion from $188.9 billion. FDI in mining and quarry accounted for 1.3% of the total FDI in 2016, and FDI in manufacturing—the sector with the largest share of total FDI—accounted for 45% (Bank of Thailand, 2017, p. 46, 52; 2018a, c; U.S. Central Intelligence Agency, 2018).

Government Policies and Programs

In May, the Government of Thailand issued a resolution that proposed the cessation of gold mining activities by the end of the year. The resolution also indicated that the Government would no longer issue or renew licenses for the mining of gold. On December 13, the National Council for Peace and Order issued Order No. 72/2559, which called for the suspension of gold mining operations and related activities starting on January 1, 2017. The order also included restrictions on the issuing or renewal of gold exploration licenses, mining concessions, and permits for metallurgical processing. All agencies related to the gold industry of Thailand were required to rehabilitate the mining areas according to their environmental impact assessment reports or else face fines or imprisonment; they were also required to provide assistance to people affected by the closure of such mines (Tungsuwan, 2016, 2017).

In December, the Government of Thailand announced that a new mineral bill had passed the National Legislative Assembly and was pending promulgation from the Royal Gazette, after which it would come into effect in 180 days. The new mineral bill includes the consolidation of the Mineral Act, B.E. 2510 (1967, which was last amended in 2002), and the Mineral Royalty Rates Act, B.E. 2509 (1966, which was last amended in 1979) into one law. The new law also describes changes in the types of prospecting licenses and mining leases that are issued, as well as the validity of periods, and the entities authorized to issue the licenses and leases. The law also establishes the creation of the National Minerals Management Policy Committee, which is tasked with proposing strategies, policies, and mineral management plans and also designating the mineral deposit areas allowed to be mined (Tungsuwan, 2017).

Production

In 2016, the production of most metals increased, including that of silver (71%), gold (30%), and mined tin (28%); also, the production of antimony was restarted. Modest production decreases were reported for tungsten (decreased by 7%) and zinc, gross weight (3%); meanwhile, the production of iron ore decreased to zero. The industrial minerals sector recorded increases in the production of rare-earth oxides (by 111%), travertine (93%), ball clay (43%), fluorspar (33%), barite (31%), dolomite (25%), shale (21%), sand and gravel (industrial, granite) (17%), calcite (13%), and cement (10%); and decreases in the production of quartz (73%), feldspar (12%), perlite (9%), and silica (7%). In the mineral fuels sector, production increased for coal (12%) and crude petroleum (8%) (table 1).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities in Thailand. Most of the nonfuel mineral mining and mineral-processing companies in Thailand were privately owned and operated. The Electricity Generating Authority of Thailand (EGAT) and several coal mining companies owned and operated most of the county's major coal exploration and mining businesses. PTT Exploration and Production Public Co. Ltd. (PTTEP) [a subsidiary of state-owned Petroleum Authority of Thailand (PTT)], its joint ventures, and major multinational oil companies owned most of the country's petroleum and natural gas exploration projects and extraction businesses (table 2).

Mineral Trade

In 2016, the value of Thailand's exports increased by 0.5% to approximately $215.4 billion from $214.3 billion in 2015. Exports of metal and steel were valued at $9.2 billion and accounted for 4.3% of Thailand's total exports; nonmonetary gold, $7.3 billion and 3.4% of total exports; and petroleum products, $5.6 billion and 2.6% of total exports. Thailand's main export partners were the United States (accounted for 11.4% of the total export value), China (11.0%), and Japan (9.5%) (Bank of Thailand, 2018b, d, e).

In 2016, the value of imports decreased by 4% to about $194.2 billion from $202.7 billion in 2015. Thailand's imports of mineral fuels (coal, coke, crude petroleum, natural gas, and petroleum products) decreased in value to about $23.0 billion from $29.7 billion in 2015. Fuels accounted for approximately 12% of Thailand's total imports in 2016. The value of imported base metal materials was $16.3 billion (8.4% of total imports), and the value of imported nonmonetary gold was $6 billion (3.1% of total imports). Thailand's main import partners in 2016 were, in order of percentage of total imports supplied, by value, China (21.6%), Japan (15.8%), the United States (6.2%), and Malaysia (5.6%) (Bank of Thailand, 2018b, e).

Commodity Review

Metals

Gold and Silver.—Kingsgate Consolidated Ltd. of Australia owned and operated the Chatree gold mine in central Thailand through its subsidiary Akara Resources Public Co. Ltd. In 2016, the company produced about 3,033 kilograms (kg) of gold and 21,013 kg of silver at Chatree. On May 10, the Government of Thailand announced the mandatory closure of the Chatree gold mine by December 31, 2016. The Government did not offer an explanation for the decision but reassured Kingsgate that it was not related to the company's performance in the operation of the mine. On December 31, the Chatree Mine was put on care-and-maintenance status, and the employees were terminated; meanwhile, the company was requesting a justification for the Government's actions (Kingsgate Consolidated Ltd., 2016, p. 5, 8; Swanepoel, 2016).

Zinc.—Padaeng Industry Public Co. Ltd. (PDI) was engaged in mining, milling, and smelting zinc and producing zinc alloys in Thailand. Padaeng owned and operated the Mae Sod Mine, which was the only zinc mine in Thailand. The Mae Sod Mine is located in the Mae Sod district of Tak Province, Padaeng's smelter was located in the Muang district of Tak Province, and its roaster plant was located in Rayong Province. In June 2016, after 32 years of operation, the Mae Sod Mine completed its last zinc ore and concentrate production, which were then sent for final refining. The mine ceased operations owing to depletion of reserves. PDI's plan after the closure of the mine was to restore the property into a natural forest and release the land to the Royal Forest Department by 2017. The roaster plant ceased operations at the end of 2016. By the end of 2017, the company planned to cease all operations related to the zinc business in Thailand (Padaeng Industry Public Co. Ltd., 2017, p. 8, 13, 25–26).

Industrial Minerals

Cement.—In 2016, a total of seven cement companies operated 12 plants in Thailand with a total production capacity of 60 million metric tons per year of cement. In 2016, the Thailand Cement Manufacturers Association reported total production 39.94 million metric tons (Mt) of cement, which was up by 10.3% from the 36.22 Mt produced in 2015 (Thailand Cement Manufacturers Association, 2016, p. 9).

Mineral Fuels

Coal, Natural Gas, and Petroleum.—In 2016, Thailand's primary commercial energy consumption was about 2.1 million barrels of oil equivalent per day. The distribution of total consumption was natural gas, 43%; petroleum products, 38%; coal and lignite, 17%; and other, 2%. In 2016, the country imported a total of 57% of its energy requirement. The remaining 43% of its energy requirement was produced domestically and included natural gas, 70%; crude petroleum, 19%; and condensate, 11% (Ministry of Energy, 2016, p. 30–31).

Outlook

According to the Bank of Thailand, the country's economy is expected to have steady growth in 2017; exports are expected to increase in line with the economies of its trading partners; and public spending and consumption are also expected to increase. Uncertainties in the gold and zinc industries are expected in the near future as a result of the Government's resolution to require the stoppage of all gold mining activities by the end of 2016 and because of the depletion of the Mae Sod zinc mine (Bank of Thailand, 2017, p. 11, 46–47, 51).

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TABLE 1
THAILAND: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2012	2013	2014	2015	2016
METALS						
Antimony:						
Mine production, Sb content		43	--	--	--	32
Refinery production, metal		-- r	488	706	700 e	700 e
Copper, refinery production		721	--	229	--	--
Gold, mine production, Au content	kilograms	4,895	4,419	4,514 r	3,305	4,293
Iron and steel, raw steel	thousand metric tons	3,328	3,578	4,095 r	3,720 r	3,824
Iron ore, mine production:						
Gross weight		303,233	389,620	347,918	16,483	--
Fe content		188,000 r	242,000 r	216,000 r	10,200 r	--
Lead, refinery production, secondary		86,507	87,385	79,250	86,000 r	90,000 e
Manganese, mine production:						
Gross weight		8,151	14,320	14,330	9,000	9,150
Mn content, 46% to 50% Mn		3,830	6,730	6,900	4,300	4,400
Silver, mine production, Ag content	kilograms	32,047	32,381	31,046	21,047	35,954
Tin:						
Mine production, mineral concentrate, Sn content		199	132	156	72	92
Smelter production, primary		19,996	19,088	16,929	10,502 r	11,088
Tungsten, mine production, concentrate:						
Gross weight		133	252	173	61	57
W content[e]		80	140	100	30	30
Zinc:						
Mine production, ore:						
Gross weight		166,642	172,578	226,893	181,025	175,632
Zn content		29,000 r, e	29,300 r, e	39,140	29,000 e	30,000 e
Alloys, Zn content[e]		30,400	23,000	19,700 r	22,200 r	22,000
Smelter production, primary		97,000	78,000 r, e	70,100 r	74,121 r	72,813
INDUSTRIAL MINERALS						
Barite		64,499	107,437	134,961	170,621	223,101
Cement, hydraulic	thousand metric tons	31,760	35,854	34,980	36,216	39,940
Clay and shale:						
Ball clay		447,348	112,187	123,082	81,245	116,203
Bentonite		30,000 r	150	--	--	--
Kaolin:						
Beneficiated		141,764	119,512	124,094	102,763	101,443
Filler		300	--	--	--	--
Nonbeneficiated		1,000,975	631,133	755,913	655,196	681,630
Shale, for cement	thousand metric tons	4,755	4,307	5,409	6,277	7,578
Diatomite		8,500	--	--	--	--
Feldspar, mine production		1,100,723	1,072,656	1,413,428	1,331,916	1,167,147
Fluorspar		9,602	2,432 r	4,590 r	15,095 r	20,100
Gypsum	thousand metric tons	11,447	12,383	12,445	11,267	10,902

See footnotes at end of table.

TABLE 1—Continued

THAILAND: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2012	2013	2014	2015	2016
INDUSTRIAL MINERALS—Continued						
Lime[e]		800,000	800,000	800,000	780,000	780,000
Perlite		41,400	14,293	54,100	17,200	15,690
Phosphate rock:						
Crude		1,990	350	500	--	--
P_2O_5 content		600	100	150	--	--
Rare earths:						
Mineral concentrate, rare-earth-oxide equivalent		120	130	1,900	760	1,600
Monazite concentrate[e]		200	210	3,200	1,300	2,600
Salt		1,363,539	1,300,156	1,381,067	1,385,911	1,390,548
Stone, sand, and gravel:						
Sand and gravel, industrial, granite	thousand metric tons	6,347	7,068	7,591	8,075	9,459
Silica, mine production, unspecified		434,094	876,085	1,083,174	1,191,612	1,102,699
Stone, crushed:						
Dolomite		2,608,997	2,487,135	2,471,486	2,432,853 r	3,034,860
Limestone	thousand metric tons	150,120	161,440	165,513	176,626 r	174,208
Marl, for cement		100,000	75,500	1,200	--	--
Stone, dimension:						
Calcite		865,800	841,746	991,981	1,281,765	1,452,235
Granite		14,808	7,936	8,005	13,878	14,860
Marble, including fragments		798,308	1,260,465	1,664,978	2,661,207	2,599,875
Travertine		900	--	5,103	1,350	2,600
Quartz		404,800	393,791	194,831	188,650	50,160
Talc and related materials:						
Pyrophyllite		35,000	26,820	49,100	45,500	40,000 e
Talc		5,856	7,880	8,208	6,768	7,126
MINERAL FUELS AND RELATED MATERIALS						
Coal, lignite	thousand metric tons	18,069	18,111	17,991	15,151 r	16,979
Natural gas:						
Condensate	thousand 42-gallon barrels	21,169	33,273	34,430	34,844	35,472
Gross production	million cubic meters	21,766	41,797	42,118	33,460 r	33,586
Petroleum:						
Crude	thousand 42-gallon barrels	37,164	54,561	50,647	55,699 r	59,927
Refinery production	do.	229,000 e	369,713	287,784 r	301,331 r	302,000 e

[e]Estimated. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through February 28, 2018. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

[2]In addition to the commodities listed, gemstones and silicon may have been produced in Thailand, but available information was inadequate to make reliable estimates of output.

TABLE 2
THAILAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Antimony	metric tons	Amco Thai Mining Co. (Hibino Metal Industry)	Antimony smelter, Ban Pin, Phrae Province	555
Barite		Asian Mineral Resources Co. Ltd.	Loei, Mae Hong Son, Nakhon Si Thammarat, and Satun Provinces	60
Do.		P&S Barite Mining Co. Ltd.	Loei and Nakhon Si Thammarat Provinces	60
Cement		Asia Cement Public Co. Ltd.	Saraburi Plant, Phra Phutthabat District, Saraburi Province	4,992
Do.		Globe Cement Co. Ltd.	Saraburi Plant, Chalerm Phrakiat District, Saraburi Province	845
Do.		Jalaprathan Cement Public Co. Ltd. (Cement Francais S.A., 37%; Veatprapat Holding Co. Ltd., 19%; others, 44%)	Takli Plant, Takli District, Nakhon Sawan Province	1,152
Do.		do.	Cha-Am Plant, Cha-Am District, Petchaburi Province	1,190
Do.		Siam City Cement Public Co. Ltd. (Holcim Ltd., 27.5%; Rattanarak family, 27%; other investors, 45.5%)	Kaeng Khoi District, Saraburi Province	14,784
Do.		TPI Polene Public Co. Ltd.	do.	13,000
Do.		Siam Cement (Ta Luang) Co. Ltd. (SCG Cement-Building Materials Co. Ltd.)	Ta Luang Plant, Ban Mo District, Saraburi Province	3,072
Do.		do.	Khao Wong Plant, Praputtabath District, Saraburi Province	3,840
Do.		Siam Cement (Kaeng Khoi) Co. Ltd. (SCG Cement-Building Materials Co. Ltd.)	Kaeng Khoi District, Saraburi Province	7,296
Do.		Siam Cement (Thung Song) Co. Ltd. (SCG Cement-Building Materials Co. Ltd.)	Thung Song District, Nakorn Sri Thammarat	6,912
Do.		Siam Cement (Lampang) Co. Ltd. (SCG (SCG Cement-Building Materials Co. Ltd.)	Chaehom District, Lampang Province	2,112
Do.		Thai Pride Cement Co. Ltd.	Saraburi Plant, Kaeng Khoi District, Saraburi Province	960
Coal, lignite		Electricity Generating Authority of Thailand (EGAT) (Government, 100%)	Mae Moh, Lampang Province	20,000
Do.		Lanna Resources Public Co. Ltd.	Ban Pakha, Lamphun Province	1,000
Copper, refined		Thai Copper Industries Public Co. Ltd. (TCI)	Rayong Industrial Park, Rayong Province	NA
Feldspar, concentrate		Asia Mineral Processing Co. Ltd.	Provinces of Nakhon Si Thammarat	500
Fluorspar, concentrate		do.	Mae Hong Son Province	14
Gas, natural	million cubic meters per day	Esso Exploration and Production Khorat Inc.	Namphong, Khon Kaen Province	4
Do.	do.	TOTAL Exploration and Production (Thailand)	Bongkot, offshore in the Gulf of Thailand	15
Do.	do.	Chevron Corp.	Baanpot, Erawan, Funan, Kaphong, Pladang, Satun, Pailin, Trat, all offshore in the Gulf of Thailand	33
Do.	do.	do.	Platong II project	NA
Gold, mine output, Au content[1]	kilograms	Akara Resources Public Co. Ltd. (Kingsgate Consolidated Ltd., 100%)	Chatree, Phichit Province	5,000
Gypsum		Vanich Gypsum Co. Ltd.	Khlong Prab, Mai Riang. Thoong Yai Mai in Nakhon Si Thammarat and Surat Thani Provinces	8,500
Do.		Siam Cement Group	NA	NA
Do.		Lotus Mines Co. Ltd.	Nakornsawan	NA
Do.		General Mining and Trading Co. Ltd.	Talad, Muang	NA
Iron ore, gross weight[2]		P.T.K. Mining Co. Ltd.	Phu Ang, Loei Province	720
Lead, in concentrate		Kanchanaburi Exploration and Mining Co. Ltd.	Song Toh, Nong Phai, and Bo Ngam in Kanchanaburi Province	55

See footnotes at end of table.

TABLE 2—Continued
THAILAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum, crude, including condensate	thousand 42-gallon barrels per day	Chevron Corp.	Benjamas, Tantawan, offshore in the Gulf of Thailand	35
Do.	do.	do.	Baanpot, Erawan, Funan, Gomin, Jakrawan, Kaphong, Pailin, Platon, Satun, Surat, Trat Plamuk, offshore in the Gulf of Thailand	38
Do.	do.	PTT Exploration and Production Public Co. Ltd. [Petroleum Authority of Thailand (Government, 100%)]	Arthit, Songkhla, Gulf of Thailand	20
Do.	do.	Thai Shell Exploration and Production Co. Ltd.	Sirikit in Kamphaenghet Province	24
Do.	do.	TOTAL Exploration and Production (Thailand)	Bongkot, offshore in the Gulf of Thailand	12
Silicon, metal (gross weight)	metric tons	G.S. Energy Co., Ltd.	Ratchaburi silicon plant	25,000
Silver, mine output, Ag content[1]	kilograms	Akara Resources Public Co. Ltd. (Kingsgate Consolidated Ltd., 100%)	Chatree, Phichit Province	31,000
Steel, rolled		The Bangkok Iron and Steel Works Co. Ltd.	Phrapradaeng, Samutprakarn Province	120
Do.		Bangkok Steel Industry Public Co. Ltd.	do.	300
Do.		Tata Steel (Thailand) Plc (Tata Steel Ltd., 67.9%; McDonald Investment, 6.5%; other investors, 25.6%)	Map Ta Phut, Rayong Province; Sriracha, Chonburi Province; Ban Mon, Saraburi Province	1,700
Do.		Namheng Steel Co. Ltd.	Lopburi Province	300
Do.		Sahaviriya Group Corp. Ltd.	Bang Saphan, Prachuap Khiri Khan Province	2,400
Do.		Siam United Steel Co. Ltd.	Rayong Province	1,000
Do.		G-Steel Plc (formerly Siam Ystrip Mill Plc)	Bann Khai, Rayong Province	600
Steel, rebar		TY Steel Co. (Tycoons Group International Co. Ltd.)	Wire rod and rebar plant, Rayong Province	180
Tantalum, metal powder and oxides	metric tons	H.C. Starck (Thailand) Co. Ltd. (H.C. Starck GmbH, 94.98%, and others, 5.02%)	Map Ta Phut, Rayong Province	250
Tin:				
Concentrate, Sn content		Numerous small companies	Nakhon Si Thammarat, Phangnga, Phuket, and Rayong Provinces	3
Refined		Thailand Smelting & Refining Co. Ltd. (Thaisarco) (Amalgamated Metal Corp. Group, 77.1%, and other, 22.9%)	Phuket, Phuket Province	30
Tungsten, in concentrate	metric tons	SC Mining Co. Ltd. (Som Chai family, 100%)	Ban Pin, Phrae Province	650
Zinc:				
In concentrate[2]		Padaeng Industry Public Co. Ltd. (Bali Ventures Ltd, 21.7%; Thai Ministry of Finance, 13.81%; RAK Minerals & Metals Investments, 12.5%; others, 52%)	Mae Sod district, Tak Province	65
Refined		do.	Smelter in Muang district, Tak Province; roaster plant, Rayong Province	115

Do., do. Ditto. NA Not available.

[1]Mine was in care-and-maintenance status in 2016.

[2]Mine was shut down in 2016.