

# The Mineral Industry of Burma

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Burma has an agricultural economy, but has long been considered a potentially mineral rich region, with its oil, gas, lead, zinc, silver, tin, and tungsten resources in 1965 less than fully developed. Mineral output had fallen behind that of neighboring Thailand, whose production in 1964 was of about the same order of value. Production of crude oil, the major item, failed to keep pace and output declined in 1965, and petroleum refinery output, which was partly from imported crude oil, strained to supply domestic demand. At the same time, greater efforts went into increasing crude oil supplies by exploration and secondary recovery experiments. Cement and salt production continued at a steady level, but metallic output appeared to be declining.

In trade, payments for some imports were withheld, which led to temporary constraints by suppliers, even though the Government's Central Deposit financial reserves position appeared quite sound. Following completion of Japanese war reparations in April, Japan initiated a 12-year \$140 million<sup>2</sup> economic assistance program. Mainland China assisted Burma with the construction of bridges over the Salween River at Ta-Kaw, at Kunhing, and at Kunlong. The U.S.S.R. offered assistance in mining, was interested in a dam to be built on the Baluchaung River, near Moby, Kayah State, and helped with the construction of the Kyetmauktaung dam. This assistance moved the anticipated completion date to August 1966. Burma's gross national product was probably even lower in 1965 than the \$1.63 billion reported in 1963-64, its mineral industry contributed an estimated 3 percent of the overall product. For this country of about 25 million people, only metallic lead and silver had international significance and

the country's output of each of these was less than 1 percent of world demand.

Burma's Minister of Mines in 1965, Commander Thauang Tin, was connected with the military leadership, as were most other members of the Government. The Revolutionary Government, which came to power on March 2, 1962, was committed to socialism and nationalization and in 1965 took another step in that direction when General Ne Win, Chairman of the Union of Burma Revolutionary Council, Rangoon, signed into law on October 18 the 1965 Socialist Economic System Construction Rights Act. This reserved to the Government the right to set up any economic undertaking as a new nationalized enterprise, and to nationalize, take over temporarily, step in and supervise, and/or prescribe rules and regulations for all or part of an economic enterprise. A new Trade Council, which succeeded the People's Stores Corp. in October, exercised increasing control over domestic commerce and took actions to overcome the widespread illegal trading. Mineral products were included in an expanded list of controlled commodities; Burma's chronic problem of purchase and distribution of goods continued to hamper growth of the mineral industry. Moves toward greater centralization left a gap in supervision, and reliable trade and production data became scarce. The National Planning Ministry submitted a draft of a 5-year economic development plan for fiscal years 1965-66 to 1969-70 (Burma's fiscal year runs from October 1 to September 30), in which the emphasis on minerals was expected to be

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<sup>2</sup> Where necessary values have been converted from Kyats (K) to U.S. dollars at the rate of K4.73=US\$1.00.

increased. Capital investment due for mining had been raised previously from \$7.6

million in 1964-65 to \$12.3 million in 1965-66.

## PRODUCTION

The level of mineral production declined in 1965, with the industry's contribution to the economy probably \$40 to \$45 million, and with petroleum and gas accounting for one-half or more of this. About one-fourth of the total was from nonferrous metals and ores produced by the famous Bawdwin mines, now in Government hands, and Mergui-Tavoy area tin-tungsten properties. Metallic production showed little evidence of responding to higher world prices, because of domestic controls. Iron

and steel was a single plant industry. Cement production continued at about capacity, and Japanese machinery arrived for an addition at the Thayetmyo cement plant to increase output to 1,000 tons daily. Burma's electric power generation was higher in 1965, reaching 33,158 million kilowatt hours in the first 10 months; in 1964 it totaled 37,730 million kilowatt hours. Industrial users consumed about one-fourth of the total. Installed capacity remained at 191,000 kilowatts.

**Table 1.—Burma: Production of metals and minerals**  
(Metric tons unless otherwise specified)

Commodity	1961	1962	1963	1964	1965 <sup>e</sup>
<b>Metals:</b>					
Antimonial lead (18 to 20 percent antimony) <sup>1</sup>	413	459	578	<sup>e</sup> 500	560
Antimony ore (40 to 50 percent antimony)	151	68	NA	NA	50
Copper matte (40 percent copper) <sup>1</sup>	279	370	NA	<sup>e</sup> 300	340
Gold, refined..... troy ounces	194	<sup>e</sup> 200	<sup>e</sup> 200	<sup>e</sup> 200	200
<b>Iron and steel:</b>					
Iron ore..... <sup>e</sup>	15,000	9,162	NA	NA	5,000
Steel ingot <sup>e</sup>	11,000	13,000	15,000	15,000	15,000
Rolled steel <sup>e</sup>	8,000	10,000	12,000	12,000	12,000
<b>Lead:</b>					
Concentrate (50 to 60 percent lead) <sup>1</sup>	29,007	33,449	32,936	31,002	30,000
Refined metal (99.99 percent lead) <sup>1</sup>	15,763	17,385	17,738	18,053	16,000
Manganese ore	178	193	<sup>e</sup> 200	NA	600
Nickel speiss (20 to 22 percent nickel)	650	536	462	<sup>e</sup> 300	200
Silver, refined <sup>1</sup> ..... thousand troy ounces	1,325	1,498	1,511	<sup>2</sup> 1,867	1,120
Tin concentrate (68 to 72 percent tin)..... long tons	1,030	909	795	830	880
Tin-tungsten concentrate (35 percent tin and 30 percent tungsten trioxide)..... long tons	1,222	1,161	1,279	957	600
Tungsten concentrate (55 to 65 percent tungsten trioxide)	378	215	89	86	100
Zinc concentrate (54 to 56 percent zinc) <sup>1</sup>	13,122	15,119	15,224	14,666	13,600
<b>Nonmetals:<sup>1</sup></b>					
Barite	2,039	4,048	NA	NA	3,000
Cement	39,570	53,282	124,130	<sup>2</sup> 129,541	120,000
Gypsum	853	2,084	NA	NA	1,000
Limestone	36,065	65,289	NA	NA	50,000
Marl	23,171	26,293	NA	NA	20,000
Salt	126,544	155,697	160,700	127,000	174,000
<b>Mineral fuels:</b>					
Coal	1,611	2,423	<sup>e</sup> 5,000	<sup>e</sup> 8,000	20,000
Natural gas..... million cubic feet	333	440	NA	NA	500
<b>Petroleum:</b>					
Crude oil..... thousand 42-gallon barrels	4,218	4,366	4,761	<sup>2</sup> 4,164	4,100
<b>Refinery products:<sup>4</sup></b>					
Gasoline..... do	1,312	1,292	1,238	1,216	1,300
Kerosine..... do	718	702	854	923	1,050
Other..... do	1,260	1,229	1,280	1,356	1,450
<b>Total..... do</b>	<b>3,290</b>	<b>3,223</b>	<b>3,372</b>	<b>3,495</b>	<b>3,800</b>

<sup>e</sup> Estimate. <sup>2</sup> Revised. NA Not available.

<sup>1</sup> Output of Burma Corp. (1951). Ltd. as reported in 1961-63; figures tantamount to national production. Other companies sporadically produce small quantities of lead, zinc, and silver.

<sup>2</sup> Crude silver; compares with 2,076,000 ounces produced in 1963.

<sup>3</sup> Burma also produces a variety of semiprecious and precious stones, including amber, jade, ruby, sapphire, and spinel.

<sup>4</sup> For 1962 and 1963, residual fuel is apparently not included and "Other" is comprised mainly of distillate fuel.

## TRADE

Publication of detailed trade data was at a standstill but it was known that most metallic ores and concentrates, except tin, continued to go to Japan and silver presumably to the United Kingdom. Japan imported 14,387 tons of zinc concentrate and 71 tons of tungsten ore and concentrate from Burma in 1965. Tin ore continued to go to Malayan smelters for refining. Mineral exports made up less than 5 percent of Burma's total shipments; the balance was chiefly rice. It was necessary to import crude oil to meet expanding refinery demand at Syriam, and paraffin wax remained an exported byproduct. U.S. S.R. was the principal source of such crude oil. Jade was handled by Myanma Export/Import Corp., a Government agency, and, along with other gems, about 70 tons

of unpolished jade was being exported annually to Hong Kong. Fertilizers were imported, of which about 34,000 tons, mostly phosphatic, was consumed in the 1964-65 season. Imports of coal and coke in 1964 were valued at \$3.1 million and cement at \$700,000. Base metal manufacture imports, valued at \$26.6 million in 1964, comprised nearly 10 percent of all imports and were second only to machinery and transport equipment, emphasizing the undeveloped state of such domestic industries. It was announced in October that People's Stores Corp. was dissolved, and activities were taken over by the new Trade Council, which proceeded to bring strict controls to sales of mineral products and industrial raw materials, as well as other goods.

## COMMODITY REVIEW

## METALS

**Iron and Steel.**—Burma's only steel mill, at Ywama, Insein, continued to use domestic scrap iron, but supplies were about depleted. Its 12-ton electric furnace was capable of producing 20,000 tons of steel ingot annually. Steel mill products in the 1963-64 fiscal year included:

Product	Quantity (metric tons)
Bars and rods -----	6,330
Sheets -----	6,400
Wire nails -----	1,320
Barbed wire -----	560

No progress was reported on iron ore developments following earlier West German surveys in the Pangpet area by Krupp Industries and Japanese studies of deposits in the Mergui, Toungoo, and Thaton areas of southern Burma.

**Lead, Zinc, and Silver.**—Burma Corp. Ltd., formerly British-owned in part, and nationalized in early 1965, was renamed People's Bawdwin Industry and continued to operate about as before. Compensation to be paid former stockholders was not immediately determined. Details on production were not available, since issuance of regular monthly company reports stopped in mid-1964, but output probably was maintained at about the same or at a slightly lower rate. A proposal to invest

about \$2 million in a mill to produce 40,000 tons or more of lead-zinc concentrates annually and to build a zinc smelter at Namtu was reported in a *Burmese newspaper*. Japan was again successful in bidding on zinc ore and concentrate exports and continued to take virtually all of the Bawdwin mine output. Smelted lead was exported as in the past. Depletion has made mining more difficult but large ton-nages of low-grade ores remain.

**Tin and Tungsten.**—Ore buying centers were operated by the Government in the southern tin-tungsten producing area of Burma since mid-1964, but prices were too low to encourage mining, and several step increases appeared to have little inducement. The once large producer, *Mawchi* mines, in southern Shan States, continued operating; the Yawa tin lode mine and Tenasserim Mining Co. operations had been combined into the Kyaukmedaung Mine Project; and Anglo-Bruma Tin Co. Ltd., was now the Heinda Mine Project. Shipments took place from several ports; Tavoy exports alone were reported in 1964 to include 195 long tons of tin concentrate, 32 long tons of tin blocks, and 621 tons of tungsten (probably tin and tungsten) concentrates.

## MINERAL FUELS

**Coal.**—Limited work was done on developing the Kalewa coalfield, which sup-

plied coal for local use by a brick plant and railroad. At least seven workable seams are known in northern Burma. Coal and coke were imported at the rate of about 300,000 tons annually.

**Petroleum.**—Crude oil production continued to decline as outputs dropped at the Chauk and Lanywa oilfields, although intensified exploration was beginning to bring results. Three waterflood projects were in operation at Chauk, and projects for hydraulic fracturing and hot oil injection were planned at both the Chauk and Yenangyaung fields. The latter field reportedly produced at a rate of about 4,600 barrels per day in 1964, supplying 40 to 45 percent of Burma's output.

In addition to contract oil studies by foreign firms, several Burmese field groups were making geophysical surveys, and a total of five exploratory drill units, including two that were Rumanian-equipped, were active in the Myanaung, Prome, Chauk, and Yenangyat areas. A successful 8,500-foot hole was drilled at the north-

ern edge of Yanangyaung's Pin Chaung field, adding to its extent. Pin Chaung has a number of free-flowing wells and during high water from monsoons its old and new sections become isolated. Myanaung reportedly had a 300-barrel-per-day exploratory hole. After oil was discovered in the Henzada district, road construction was started to the Irrawaddy River to move equipment and transport oil. Also promising was an oil discovery in the Kogwe Hills, near Inma, in the Prome district. Rumanian-assisted explorations at Chauk were said in early 1966 to have found additional oil at 6,000 feet, and natural gas was expected at deeper levels.

Burma's refining capacity was estimated at 21,900 barrels per day; 11,900 barrels were from the new section of the Syriam plant. Overall operations were considerably below capacity, but were considered adequate for the country's requirements. Crude oil from U.S.S.R. continued to go to the Syriam refinery in 1965. Construction of liquefied petroleum gas and lubricating oil plants was contemplated.