The Mineral Industry of Burma

By Gordon L. Kinney [1]

Burma's economic situation showed a modest but encouraging upswing in fiscal 1976.[2] The gross domestic product (GDP) in 1976 was estimated at $3.7 billion[3] in current dollars. At constant 1969 prices the GDP rose an estimated 5.6% to $1.8 billion.[4] This was a considerable improvement over Burma's 10-year average growth rate of less than 3%, which had barely exceeded the population growth, leaving per capita GDP growth negligible during the decade. Per capita income at current prices rose an estimated 15% during 1976 to about $118, over twice the 1975 gain of 7%. The balance of payments showed a $28 million deficit in 1975, and estimates for 1976 indicated a slight increase in the deficit to around $30 million.

Inflation was still the main economic problem as the amount of currency in circulation continued to increase and bottlenecks in production, transportation, and distribution kept the supply of goods low. Speculators, hoarders, smugglers, and black marketeers added to inflation. In recent years, the inflation rate has been well over 20%. The consumer price index in Rangoon (1972=100) was at 222 in 1975, an increase of nearly 35% over that of the previous year. In 1976, however, consumer prices were held to a 20% increase, closing the year at about 266. Similarly, the wholesale agricultural price index climbed 20% in 1976.

The major bright spot in the economic picture was the vital agricultural sector, which had an increase in output of about 7% over that of 1975, the largest increase in the past 15 years. Production of all major crops except jute rose for the 1975–76 crop season, mainly because of excellent climatic conditions during the year. These favorable conditions continued throughout the 1976–77 crop season, and Burma was expected to have a record harvest for the second consecutive year. Rice production in 1976 could be over 9 million tons and again contribute the major portion of Burma's export income.

Burma's mineral production was mixed during the year, with some products making modest gains. These included antimony, copper, mixed tin-tungsten concentrates, gypsum, limestone, and crude petroleum. A number of the minerals most important to the economy, however, showed declines in production. Foremost among these were the products from the famed Bawdwin mine—lead, zinc, and silver. Silver was particularly disappointing, with production falling 73% to 211,000 troy ounces.[5]

Substantially increased crude oil production was a great help in keeping fuel import bills from contributing to the already high rate of inflation. The Government had not imported crude oil since 1974, thereby saving millions of dollars in foreign exchange but causing a decline in production in many industries because of recurring petroleum shortages. The shortages were caused not so much by lack of crude oil production capacity as by a continuing difficulty in transporting and distributing the petroleum products on a timely basis.

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[2] The Burmese fiscal year begins April 1 of the year stated.

[3] Where necessary, values have been converted from Burmese kyat (K) to U.S. dollars at the rate of K6.7=US$1.00.

[4] U.S. Embassy, Rangoon, Burma. Economic Trends: Burma. State Department Airgram A-5, Feb. 1, 1977, p. 3.

[5] U.S. Embassy, Rangoon, Burma. Industrial Outlook Report: Minerals. State Department Airgram A-44, June 17, 1977, pp. 1-7.

The value of output of the mineral sector was not available for 1976. However, the order of magnitude at constant prices should be approximately the same as in the previous year. A decrease in the value of metallic minerals produced was balanced by the increase in value of petroleum and natural gas production. The significance of the mineral sector has gradually declined in recent years, contributing only a little over 1% of the GDP in 1976. The reported output value of the mineral sector for 1975 was $49 million at current prices, a slight decrease from $51 million in 1974.[6]

About 67,000 people or 0.6% of the 12-million-person labor force in Burma were employed in the mining sector during 1975. They produced about 1.5% of the net output of goods and services during the period.

In an effort to develop and promote the mining industry, the Government of Burma and the United Nations Development Program (UNDP) allocated $480,000 and $640,000, respectively, to strengthen the technical capability of the Planning and Research Department of the Myanma Mineral Development Corp. (MMDC). MMDC is responsible for exploiting Burma's mineral resources and developing new mining enterprises.

The immediate objectives of the project will be to establish and equip research and development facilities for mineral beneficiation and metallurgy, to train engineers and technicians in production-oriented research and the planning of mineral development projects, and to prepare a feasibility study for the establishment of a 20,000-ton-per-year metallurgical works based on the Monywa copper prospect.

The electric power industry continued to expand in 1976. Total installed capacity was provisionally reported at 452,000 kilowatts, a 15% increase over that of 1975. Total power generated during 1976 was about 850 million kilowatt-hours, about 5% over that of 1975. A major new use of natural gas in Burma was for the generation of electric power at gas turbine powerplants. The installed capacity of turbines fueled with natural gas nearly doubled in 1976 to over 103,000 kilowatts. These plants now account for over 23% of Burma's total capacity, one of the highest proportions of natural gas-fueled turbines to total capacity in the world.

PRODUCTION

Burma's overall production of metallic ores and coal decreased in 1976. Petroleum and natural gas had significant increases. Again in 1976 the value of oil production was estimated at more than twice that of other mineral output. Total tin-tungsten production was apparently up about 3%. Neither the grade of the concentrates nor the value of the production was available from official sources in 1976, making comparisons and conclusions difficult and liable to change. Production of lead, zinc, and silver, mainly from the Bawdwin mine, dropped. Antimony continued a 5-year climb to a record high production for Burma. Industrial minerals had a mixed year: Cement, limestone, bentonite, industrial white clay, and gypsum all had healthy increases, while barite, talc, and fire clay showed moderate decreases for the year.

Total onshore petroleum production in 1976 increased more than 20% over the 1975 figure. The increase came from the Mann oilfield; other producing fields declined in output. There was no offshore petroleum or natural gas production in 1976.

Natural gas production jumped an impressive 42% to meet increased demand from fertilizer and cement plants and gas turbine powerplants.

[6] Ministry of Planning and Finance. Report to the Pyithu Hluttaw on the Financial, Economic, and Social Conditions of the Socialist Republic of the Union of Burma for 1976–77. 1976, pp. 10–21.

Table 1.—Burma: Production of mineral commodities

(Metric tons unless otherwise specified)

Commodity [1]	1974	1975	1976 [p]
METALS			
Antimony, mine output, metal content [e]	[r] 420	[r] 540	570
Copper:			
Mine output, metal content [e]	[r] 70	[r] 85	90
Matte, gross weight	159	191	205
Iron and steel:			
Crude steel [e]	[r] 40,000	[r] 40,000	40,000
Semimanufactures	[e] 30,000	[e] 35,000	NA
Lead:			
Mine output, metal content [e]	9,300	[r] 10,000	3,350
Smelter:			
Refined lead	[r] 9,295	9,955	3,331
Antimonial lead (18% to 20% antimony)	359	251	187
Manganese ore, gross weight	[e] 280	--	--
Nickel:			
Mine output, metal content [e]	22	19	24
Speiss, gross weight	87	77	94
Silver, mine output thousand troy ounces	722	775	211
Tin, mine output:			
Metal content of tin concentrate	[r] 482	545	262
Metal content of tin-tungsten concentrate	252	277	523
Total	[r] 734	822	785
Tungsten, mine output:			
Metal content of tungsten concentrate	[r] 220	217	108
Metal content of tin-tungsten concentrate	173	253	479
Total	[r] 393	470	587
Zinc, mine output, metal content	[r] 4,361	4,115	2,211
NONMETALS			
Barite [2]	[e] 15,000	15,444	13,696
Cement, hydraulic thousand tons	172	228	233
Clays: [2]			
Ball clay	[r] 2,055	4,296	5,080
Bentonite	[r] 512	915	955
Fire clay [3]	[r] 2,496	3,617	2,792
Industrial white clay	[r] 1,536	2,489	4,393
Feldspar [2]	[r] 198	762	904
Graphite [2]	305	87	--
Gypsum [2]	30,085	39,260	45,296
Precious and semiprecious stones: [2]			
Jadeite kilograms	8,808	7,598	9,046
Unspecified thousand carats	NA	76	NA
Salt thousand tons	125	96	[e] 100
Sand: [2]			
Glass sand, brown	NA	5,283	NA
Glass sand, white	NA	2,710	NA
Stone: [2]			
Dolomite	[r] 420	887	1,016
Limestone, crushed and broken thousand tons	[r] 524	595	802
Quartz	[r] 151	386	177
Talc and related materials, soapstone [2]	[r] 347	418	355
MINERAL FUELS AND RELATED MATERIALS			
Coal	16,811	24,588	20,930
Gas, natural: [e] [4]			
Gross production million cubic feet	[r] 5,320	[r] 7,130	9,410
Marketed production do	[r] 4,900	[r] 5,500	7,800
Petroleum:			
Crude thousand 42-gallon barrels	7,581	6,700	8,183
Refinery products:			
Gasoline do	[r] 1,497	1,506	1,645
Jet fuel do	223	166	[e] 188
Kerosine do	1,686	1,440	1,117
Distillate fuel oil do	1,691	1,463	2,045
Residual fuel oil do	1,020	1,489	[e] 2,002
Other do	519	619	[e] 719
Refinery fuel and losses do	763	307	[e] 461
Total do	[r] 7,399	6,990	8,177

[e] Estimate. [p] Preliminary. [r] Revised. NA Not available.

[1] In addition to the commodities listed, Burma also produces pottery clay, common sand and gravel, other varieties of crude construction stone, and other varieties of gem stones, but available information is inadequate to make reliable estimates of output levels.

[2] Data are for fiscal years beginning April 1 of that stated.

[3] Includes fire clay powder.

[4] Based on reported figures for fiscal years beginning April 1 of that stated.

TRADE

Mineral products ranked third in value of exports after agriculture and forestry products in 1976. The estimated value of Burma's exports was over $235 million and import values were estimated at $296 million, giving a balance-of-trade deficit of about $60 million. Exports of base metals and ores and silver were provisionally reported at $6 million or about 2.6% of total exports. Imports of base metals and base metal manufactures were valued at over $20 million. This was 30% less than in 1975, reversing the steady increase of the last 2 years. Coal and coke imports dropped to an insignificant level from 1975's record high value of $12 million.

Table 2.—Burma: Exports and reexports of mineral commodities

(Metric tons unless otherwise specified)

Commodity	1973	1974	Principal destinations, 1974
METALS			
Antimony ore and concentrate	582	476	Japan 217; Belgium-Luxembourg 203.
Copper matte	--	350	All to West Germany.
Lead metal, unwrought, refined	7,500	4,713	People's Republic of China 4,463; Malaysia 200.
Nickel matte and speiss	--	350	All to West Germany.
Silver, unwrought ----thousand troy ounces--	722	420	United Kingdom 126; Netherlands 101; Japan 99.
Tin ore and concentrate	2,365	334	Malaysia 212; Spain 91.
Tungsten:			
Tungsten concentrate	955	809	West Germany 303; Japan 300; United States 175.
Mixed tin-tungsten concentrate	342	432	Netherlands 203; Belgium-Luxembourg 132; United Kingdom 97.
Zinc ore and concentrate	6,487	6,947	All to Belgium-Luxembourg.
Other metals including alloys, all forms	3	71	Singapore 64.
NONMETALS			
Cement	(1)	5,000	All to India.
Diamond, industrial ----------value--	NA	$42,281	All to West Germany.
Fertilizer materials, unspecified	--	25,040	Indonesia 15,000; Pakistan 5,000; Philippines 2,540.
Gem stones, excluding diamond:			
Jade:			
Uncut ----------thousand carats--	96	7,979	Mainly to Hong Kong.
Cut but not set ----------do----	3,227	1,940	Israel 1,447; Hong Kong 299; Switzerland 147.
Ruby ----------carats--	NA	1,994	Lebanon 1,134; Switzerland 174.
Sapphire ----------do----	NA	2,755	Italy 1,985; Switzerland 344; People's Republic of China 185.
Unspecified ----------do----	10,000	89	All to Switzerland.
Salt	4,015	2,011	All to Singapore.
Other nonmetals	26,626	(1)	All to People's Republic of China.
MINERAL FUELS AND RELATED MATERIALS			
Petroleum refinery products thousand 42-gallon barrels--	196	152	Japan 65; Spain 6.

NA Not available.
[1] Less than ½ unit.

Table 3.—Burma: Imports of mineral commodities [1]

(Metric tons unless otherwise specified)

Commodity	1973	1974	Principal sources, 1974
METALS			
Aluminum:			
Oxide and hydroxide	r 16	2	Mainly from Japan.
Metal including alloys:			
Unwrought	r 2	227	Hong Kong 198; U.S.S.R. 29.
Semimanufactures	r 420	321	West Germany 116; U.S.S.R. 60.
Chromium oxide and hydroxide	1	(2)	All from Japan.
Copper:			
Ore and concentrate	--	4	Netherlands 2; United Kingdom 2.
Copper sulfate	1	(2)	All from Japan.
Metal including alloys:			
Unwrought	3	7	India 5.
Semimanufactures	r 250	230	Japan 128; United Kingdom 34.
Iron and steel including alloys:			
Pig iron, including cast iron	2,957	1,548	Finland 1,331; Japan 217.
Ferroalloys	46	--	
Steel, primary forms	r 13,253	2,965	All from Republic of Korea.
Semimanufactures	31,923	31,294	Japan 19,389; People's Republic of China 2,525.
Lead metal including alloys, all forms	4	16	Hong Kong 13.
Manganese oxide	r 89	182	All from Japan.
Mercury ---76-pound flasks	1,045	94	Japan 44; Denmark 38.
Nickel metal including alloys, all forms	r 5	31	All from West Germany.
Silver metal including alloys, all forms ---troy ounces	147	--	
Tin metal including alloys, unwrought and semimanufactures	3	150	Mainly from Japan.
Titanium oxide	r 33	36	West Germany 26; People's Republic of China 10.
Zinc:			
Oxide	r 140	68	West Germany 43; United Kingdom 16.
Metal including alloys, all forms	r 476	308	Japan 273; India 26.
Other:			
Ores and concentrates, n.e.s	1	1	All from Hong Kong.
Oxides, hydroxides, peroxides of metals, n.e.s	r 216	201	Japan 172.
Base metals including alloys, all forms	r 12	(2)	All from United Kingdom.
NONMETALS			
Abrasives, natural, n.e.s ---value, thousands	$58	$69	People's Republic of China $27; Japan $15.
Asbestos	r 662	150	All from People's Republic of China.
Boric acid	1	13	United States 11.
Bromine	(2)	--	
Cement	2,024	699	West Germany 656.
Chalk	1	136	People's Republic of China 76; India 49.
Clays and clay products:			
Crude:			
Kaolin (china clay)	29	8	All from United Kingdom.
Other	88	58	Japan 34; United Kingdom 24.
Products:			
Refractory ---value, thousands	$149	$325	Japan $312.
Nonrefractory ---do	$63	$92	People's Republic of China $82.
Fertilizer materials:			
Manufactured:			
Nitrogenous	27	--	
Phosphatic	11,248	7,497	All from Tunisia.
Ammonia	r 100	20	West Germany 8.
Graphite, natural	r 9	(2)	All from India.
Gypsum ---value, thousands	(2)	(2)	All from People's Republic of China.
Iodine	(2)	1	All from United Kingdom and Japan.
Mica, all forms	r 11	1	All from Japan and People's Republic of China.
Precious and semiprecious stones, except diamond ---carats	33	--	
Salt	40	408	Japan 407.
Sodium and potassium compounds, n.e.s.:			
Caustic soda	r 5,254	5,400	People's Republic of China 2,864; West Germany 1,163; Netherlands 965.
Caustic potash, sodic and potassic peroxides	1	4	Belgium-Luxembourg 3.

See footnotes at end of table.

Table 3.—Burma: Imports of mineral commodities [1]—Continued
(Metric tons unless otherwise specified)

Commodity	1973	1974	Principal sources, 1974
NONMETALS—Continued			
Stone, sand and gravel:			
Quartz and quartzite	r 15	46	People's Republic of China 36; United Kingdom 10.
Sand excluding metal bearing	425	--	
Sulfur:			
Elemental	r 1,732	832	West Germany 819.
Sulfuric acid	4	1	Mainly from United Kingdom.
Other nonmetals, crude	r 11	1	All from West Germany.
MINERAL FUELS AND RELATED MATERIALS			
Carbon black	r 182	113	Japan 99; People's Republic of China 10.
Coal and briquets:			
Anthracite and bituminous	64,460	151,842	India 66,946; Australia 56,199; People's Republic of China 28,697.
Lignite and lignite briquets	12,340	--	
Coke and semicoke	2,032	--	
Hydrogen, helium, rare gases	r 7	1	All from United States and Japan.
Petroleum:			
Crude ---thousand 42-gallon barrels--	--	1,486	All from Indonesia.
Refinery products:			
Kerosine and jet fuel ---do---	350	(2)	All from United Kingdom.
Residual fuel oil ---do---	115	16	Mainly from Bahrain.
Lubricants ---do---	131	20	Singapore 5; United Kingdom 3; United States 3.
Other:			
Mineral jelly and wax ---do---	1	(2)	Mainly from West Germany.
Nonlubricating oils ---do---	5,245	25	All from People's Republic of China.
Petroleum asphalt and pitch ---do---	243	49	Japan 39.
Unspecified ---do---	(2)	--	
Mineral tar and other coal-, petroleum-, or gas-derived crude chemicals	r 6	266	Mainly from Italy.

r Revised.
[1] Imports for consumption only; does not include imports into bond.
[2] Less than ½ unit.

COMMODITY REVIEW

METALS

Antimony.—Production of antimony ore increased for the fifth consecutive year. The 1,122 tons of ore mined in 1976 was nearly double the 1971 figure. The UNDP was conducting an exploratory drilling program at Lebin in an effort to evaluate the ore body. The site has long been worked by individual miners.

Copper.—Detailed drilling of the Monywa copper prospect (22°07′ N, 95°08′ E), about 80 kilometers west of Mandalay, continued during the year. The drilling, undertaken with assistance from the UNDP and a Japanese firm, is expected to be completed by mid-1978. Preliminary estimates of the size and grade of the deposit have ranged from 60 million to 200 million tons of ore and from 0.7% to 1.0% copper in the form of easily milled chalcocite. Pyrite occurs with the copper mineralization in sufficient quantity to produce sulfuric acid as a byproduct. The Japanese proposed construction of an 8,000-ton-per-day mine and a mill producing 20,000 tons of concentrate per year, but this was apparently not satisfactory to the Government of Burma. The Government wanted to obtain copper smelting facilities as well as the concentration plant. West Germany continued the interest shown in 1975 to invest in the project and could be chosen to finance and build the mill and smelter.

Exploration of a copper prospect at Shangalon (23°42′ N, 95°31′ E), 190 kilometers north of Mandalay, was abandoned because of disappointing results from the exploratory drilling.

Lead, Zinc, Silver.—Production of most of Burma's lead, zinc, and silver continued to come from the Bawdwin mine over 200 kilometers northeast of Mandalay. Production of lead and zinc concentrates dropped about 66% and 46%, respectively. Refined lead and byproduct silver production also fell. The higher-grade ores were becoming less plentiful and harder to recover. Much of the mining equipment was of pre-World War II vintage and no longer operated efficiently. Topping the equipment problems at the mine were the unstable security conditions in the northern Shan State area. West Germany was reluctant to invest in a large-scale modernization of the mine in 1975, and the security conditions apparently had not improved significantly in 1976. A small amount of equipment updating was planned for 1976, but no results were evident by yearend, as seen by the poor production figures.

Some of West Germany's loan commitment for 1975 was reportedly scheduled for use in construction of a small zinc smelter at Ela (19°37′ N, 96°13′ E). The smelter, which would be Burma's first, would presumably refine zinc from the Bawdwin mine's slag and tailings piles. The tailings have been accumulating since the startup of modern mining activity in 1905.

Tin and Tungsten.—Modernization of the Myanma Tin and Tungsten Corporation's Heinda mine was nearly completed and the mine should begin operating in 1977. The project was financed by West Germany with Krupp Industries as the major contractor. The new capacity was planned at 1,000 tons per year of tin concentrate.

The World Bank's International Development Association (IDA) was reportedly ready to approve a $16 million loan to cover the foreign exchange costs of developing tin-tungsten production at the Heinze Basin, 280 kilometers southeast of Rangoon. The project was to include construction of a dredge and associated support facilities for the Basin. In addition, facilities at the nearby Kanbauk mine were to be improved, a new tin and tungsten concentrating plant built at Tavoy (14°05′ N, 98°12′ E), 80 kilometers south of the Heinze Basin, and the gravel mines at Tavoy rehabilitated. Completion of the project could increase mineral export earnings by $6 million annually. Current production from the area is mostly by small-scale private miners who sell their production to the State.

Overall production of tin concentrate, tungsten concentrate, and mixed tin-tungsten concentrate was nearly 2,100 tons, an increase of about 3% over the 1975 figure.

NONMETALS

The country's three cement kilns labored during the year to keep up with increased domestic demand. Production took a sizable jump to 255,000 tons in 1976, a 43% increase over the 178,000 tons (revised) in 1975. The three kilns were all located at Thayetmyo (19°19′ N, 95°11′ E) on the Irrawaddy River about 310 kilometers north of Rangoon.

Gypsum production increased 15% in support of the increased cement output.

Ceramic Industries Corp. was negotiating with Asahi Glass Co., Ltd., of Japan for a sheet glass plant at yearend. The plant would be located at Bassein (16°47′ N, 94°44′ E) and could make Burma self-sufficient in sheet glass by 1979. Glass sand would be obtained locally.

MINERAL FUELS

Coal.—Despite an increased demand for coal from industry and the Burma Railway system, production decreased 15% to under 21,000 tons in 1976. The major mines located at Kalewa and Nama were unable to supply the demand. A reported 177,000 tons of coal was imported during 1976.

Petroleum and Natural Gas.—Development of oilfields continued during the year with a total of 26 onshore development wells completed. Most of the 18 wells drilled at the Mann oilfield proved to be good producers. Four wells at the Letpando oilfield proved unproductive, further dimming hopes of significant production from the field. Four wells were drilled at Myanaung and Shwepyitha with only one at Shwepyitha showing good natural gas production.

Despite the efforts at further development, production at the Chauk, Prome, and Myanaung Fields continued to decline. The introduction of gas-lift and water-drive secondary recovery systems at the

Yenangyaung Field arrested that Field's production decline.[7]

Exploration drilling was apparently down slightly from 1975 levels; however, areas of the Irrawaddy Delta and the upper Chindwin River drainage basin were explored by Myanma Oil Corporation's geological survey and seismic teams. By the end of June 1976, six exploration wells had been drilled throughout the country. Only one of these was encouraging, a hole drilled at Yenanma south of the Mann oilfield.

Of the 19 offshore wells contracted, 17 unsuccessful wells had been drilled off the western and southern coasts of Burma by yearend. Because of the poor results, no further offshore wildcat drilling was planned. The four international firms operating in the offshore area had ceased drilling by autumn 1976. Esso Co. drilled four wells to complete its eight-well contract, Total CFP Birmanie drilled two wells to complete its requirement of three wells, and Arakan Oil Development Corp. drilled one well to complete its required five wells. Martaban-Cities Service, Ind., drilled one well in 1976 but did not drill the final two holes required to fulfill its contract obligations. No oil was discovered in commercial quantity in any of the areas drilled. Total struck a potentially commercial natural gas deposit off the Arakan coast, but its offshore location will make exploitation presently impractical.

It was expected that during 1977 the Government would offer international tender announcements for both relinquished areas and some choice new offshore drilling blocks.

Chronic transport problems continued to disrupt the flow of crude oil and refined products during the first half of 1976. However, after midyear the water transport fleet was rejuvenated by the addition of 10 imported push tugs, 10 imported self-propelled barges, and 20 domestically built oil barges. New rail tank cars and highway tanker trucks were also to be added to the system as funds become available.

To further upgrade the transport system, several additions to the pipeline network were begun or completed during the year. The most important was the start of construction of the 218-kilometer crude oil pipeline (25.4 centimeters in diameter) from the Mann oilfield to Prome. By midyear, the first 88 kilometers had been completed. The project was continuing at yearend and was to be completed by mid-1977. A 51-kilometer pipeline from the Yenangyaung oilfield to the Chauk refinery was completed in October. A 112-kilometer pipeline was completed in April between the Letpando oilfield and the Chauk refinery. The line was idle, however, as there was no production from the Letpando oilfield.

A Chase Manhattan banking consortium agreed to lend Burma $39 million toward construction of a 280-kilometer pipeline and the purchase of five drilling rigs. The pipeline will connect the oil facilities at Prome with the refinery at Syriam south of Rangoon. Construction of the pipeline would eliminate the slow and costly river barge traffic presently used to deliver most of the crude oil to the Syriam refinery.

The Japanese Government agreed to loan Burma nearly $100 million toward equipment and services for the construction of a 25,000-barrel-per-day refinery. Total cost of the refinery will be $132 million. It will replace the present 6,800-barrel-per-day Chauk refinery, which is to be scrapped. The new refinery will process the increased crude oil production from the Mann oilfield.

A production record of 8.2 million barrels was set for crude oil in 1976, representing a 22% increase over the 1975 figure of 6.7 million barrels. The production target for 1977 was set at 10.95 million barrels. Burma's crude oil production was small by world standards but ranked fifth in the Far East area.

Both of Burma's refineries, Syriam and Chauk, continued to process all of the country's crude output, but final 1976 product output breakdowns were not available.

Petroleum product supplies from the refineries, however, did not satisfy the increasing domestic demand, particularly during the first half of 1976. Shortages of diesel oil and furnace fuel caused many industries to close temporarily or operate well below normal capacity. The situation was improving toward yearend; the transport improvements noted earlier provided

[7] U.S. Embassy, Rangoon, Burma. Petroleum Outlook Report: Burma. State Department Airgram A-22, Apr. 12, 1977, pp. 1-12.

a smoother flow of crude oil to the refineries and of petroleum products to consumers.

Marketed natural gas production reached 7.8 billion cubic feet (221 million cubic meters) in 1976, a 42% increase over the 1975 figure. Gas production at Ayadaw and Chauk was stepped up to meet the increased requirements of the Kyunchaung (Ayadaw) and Sale (Chauk) fertilizer plants. The Shwepyitha gasfield near Myanaung was brought into production during the year to supply the new units at the Myanaung gas turbine powerplant and the Kyangin cement mill.