

## THE MINERAL INDUSTRY OF

# NIGERIA

By David Izon<sup>1</sup>

Nigeria was Africa's largest oil producer in 1994, and ranked tenth in world production of crude oil. Nigeria accounted for about 3% of world production and about 8% of the Organization of Petroleum Exporting Countries' total production. The oil sector remained the mainstay of the economy, accounting for about 35% of GDP of about \$95 billion.<sup>1</sup> The oil sector accounted for 83% of total government revenues in 1994, and about 97% of the country's total export earnings. The value of exports from the oil sector amounted to about \$10 billion in 1994. The country had considerable mineral wealth and potential for diversified development of the mineral industry. Natural gas reserves in the range of 6,000 billion cubic meters (m<sup>3</sup>) were barely exploited. However, efforts to increase crude oil reserves to about 25 billion barrels (bbl) by 1995 were emphasized, with the country giving concessions to several companies for prospecting. Although some diversification was underway in the oil and gas industries, the Nation's economy still reflected the dominance of a single product, crude petroleum.

Development of the country's nonfuel mineral resource bases for barite, gold, iron ore, lead and zinc, and tin could help diversify the economy. The Raw Materials Research and Development Council (RMRDC) started a rigorous campaign to attract investors for the development of these deposits. Ongoing revision of the mining laws and investment codes was expected to provide adequate incentives for prospective investors. The country had adequate manpower and resources to enable the development of its minerals industry.

### Government Policies and Programs

In 1994, activities in Nigeria's mining and minerals processing industry declined significantly due to high production costs. To counter this decline and encourage private sector participation in areas other than petroleum, the Government created a new Ministry of Solid Minerals from the Ministry of Petroleum and Mineral Resources. Minerals policy is governed by the Mineral Act and Regulations of 1946, as well as the Quarries Act, and Gold and Diamond trading Acts and Regulations of 1969. The country's ongoing reorganization and revision of the mineral laws received U.S. Government assistance. Nigeria was determined to attract enough foreign investors and a new National Minerals Policy

was formulated to revitalize the solid minerals sector. The coal industry was the first sector slated for review, followed by the tin industry. Allocation of oil mining licenses was completed in 1994 to oil companies willing to develop new fields both on and offshore. Other major projects of importance to the Government were an aluminum plant, an liquefied natural gas (LNG) project, an iron ore project, and the issuance of mining licenses to local and foreign investors for solid minerals, particularly gold. The Government also continued planning to privatize the distribution of fuel and gas in Nigeria, and export natural gas via pipeline to neighboring west African countries. Hence, the Government negotiated the construction of the Nigeria-Ghana natural gas pipeline, and reduced the amount of royalties payable on solid minerals. Government policy was directed at revitalization of existing companies that produce minerals such as barite, kaolin, gold, marble and tin.

### Environmental Issues

The Federal Environmental Protection Agency (FEPA) Act was promulgated in 1988, following the Koko incident in which toxic waste from Italy was dumped at the fishing port of Koko, near Warri. The FEPA Act gave the agency overriding authority for the protection and development of the environment and environmental technology. FEPA's wide ranging powers included giving grants, entering into agreements that would permit it to fulfil its duties, and providing technical assistance when necessary. FEPA also could search premises, seize items, and make arrests without warrants to enforce the provisions of the FEPA Act or any subsidiary regulations.

Several specific regulations or guidelines were issued since the 1988 FEPA Act took effect. These guidelines or regulations provided specific standards for industrywide operations in the country. They included Pollution Control Guidelines of 1991, Pollution Abatement Regulations of 1991, Solid and Hazardous Waste Regulations of 1991, Effluent Limitation Regulations of 1991, and Harmful Waste Act of 1992.

### Production

The oil and gas industry remained stable in spite of the apparent worsening political climate, and continued to experience growth as more crude oil reserves were found. In

other sectors, pilot projects to produce industrial minerals continued and the Raw Materials Research Development Council advertised for investors to explore and develop several mineral deposits. Also, special efforts were being made to attract investors to the iron and steel and coal industries. (See table 1.)

## Trade

Nigeria's oil revenues for 1994 were about \$11 billion, accounting for about 97% of foreign exchange and about 80% of total Government revenues. Major mineral exports included coal, crude oil, steel billets, tin, and some industrial minerals.

The United States continued to be the largest importer of Nigerian crude oils, accounting for about 57% of the country's oil exports. In 1994, U.S. imports from Nigeria totaled about \$6.6 billion. Other major consumers of Nigerian crude were France, Netherlands, Spain, and the Economic Community of West African States (ECOWAS) member countries. The United States was Nigeria's major export market, accounting for about 40% of total exports in 1994. Germany and Spain were the second and third most important export markets respectively.

Nigerian imports consisted mainly of manufactured goods. Machinery and transport equipment accounted for the largest share of total imports, followed by chemicals and other manufactured products. Germany and the United Kingdom were the most important sources of imports, each accounting for about 14% of total imports, followed by the United States with about 12%. Others included France, 9%; and Southeast Asian countries as a group, about 15%.

Major factors affecting the trade imbalance in Nigeria were inflation, a shortage of raw materials for manufacture of goods, limited credit markets due to large government fiscal deficits, and an external debt of about \$30 billion.

## Structure of the Mineral Industry

The Government had a 51% to 60% controlling interest in all foreign mineral companies operating in the country. In an effort to privatize its parastatal (Government-controlled or owned) companies, Nigeria restructured its largest corporation, Nigerian National Petroleum Corp. (NNPC), into 10 subsidiary companies. They were run on a profit-and-loss basis without Government intervention. Other principal mineral agencies of the country included the Nigerian Mining Corp., Nigerian Coal Corp., and the Nigerian Steel Development Authority. All important minerals, such as coal, tin, and columbite, were mined by parastatal companies, or joint-venture/partnership companies. (See table 2.)

## Commodity Review

### Metals

**Aluminum.**—The \$1,200 million, 180,000 metric ton (mt) aluminum plant being built at Ikot Abasi in Cross Rivers State, in southeastern Nigeria was 50% complete. Construction was reported delayed for lack of funding, hence extending the expected production startup date to early 1996 (instead of the initial date of 1993). The Aluminum Smelter Co. of Nigeria (Alscon) was 70% owned by the Government, and 30% by the main contractors, divided between Ferrostaal Ag of Germany, 20%, and Reynolds Metals Co. of the United States, 10%. The plant was expected to reach full capacity of 180,000 mt in 1998, starting with 45,000 mt.

The cost was high because of the added cost of building fresh infrastructure and the initial cost of importing all raw materials to be used<sup>2</sup>. The Government intended to use locally produced bauxite, and subsequently import some of the bauxite from neighboring west African countries. The project included a 536-megawatt powerplant that would supply energy using cheap and abundant local natural gas.

**Gold.**—The Nigerian Mining Corp. (NMC) announced the discovery of new gold deposits in Niger, Oshun, and Sokoto States. The extent of the discoveries surprised the NMC so much that the Government set aside large tracts of the country for prospecting under special exclusive licenses. This recent find prompted the Government to renew its interest in activating an old state-owned Mine at Iperindo, near Ilesha. Production at the mine was about 124 grams/month in 1992, the last known period of production. However, production by artisanal miners, reported by the Government in 1993, was about 1,381 grams (g) from alluvial deposits. Production figures for 1994 were not available. The total unexploited deposits were estimated at 20,933 kilograms, from the Itakumodu alluvial deposit in Osun State.

**Iron and Steel.**—The heart of Nigeria's steel industry, Ajaokuta, was 98% complete as of December 1994. It was estimated that the plant could become operational at an additional cost of \$1 billion. The Government was holding discussions with Ferrostaal Ag of Germany over a deal whereby the steel company would lease and manage the Ajaokuta complex. The Ajaokuta complex comprised 1.3 million metric tons per year (Mmt/a) of light sections, bars, and rods, a central workshop, and a thermal powerplant. Total combined capacity of billets and rolled products was reportedly 2 Mmt/a. The complex was expected to be expanded in the second phase to 2.5 Mmt/a and in the third phase to 5.0 Mmt/a. The Nigerian integrated iron and steel industry was comprised of Ajaokuta Steel Complex and the Delta Steel Co. at Aladja, near Warri, with three inland rolling mills at Jos, Katsina, and Oshogbo. Other allied organizations included the National Metallurgical Development Center, Jos; the National Steel Raw Materials

Exploration Agency, Kaduna; the National Iron Ore Mining Project, Itakpe; the Metallurgical Training Institute, Onitsha; and the Aluminum Smelter Co. of Nigeria, Ikot-Abasi. These allied organizations were responsible for providing the basic raw materials for the efficient operation of the integrated plants at Ajaokuta and Aldja.

The National Iron Ore Mining Co. (NIOMC) continued to stockpile iron ore required to serve the Ajaokuta Steel Plant and the Delta Steel Co. According to the Government, work on the beneficiation plant was progressing on schedule, as were the rail links from Itakpe to Ajaokuta and from Port Harcourt to Ajaokuta. The Itakpe-based Iron Ore Co. produced 2.8 Mmt of ore grading between 36% and 38% iron (Fe) at yearend 1994. About 0.7 Mmt of ore was crushed and beneficiated to about 171,000 mt of concentrates grading 63% to 67% Fe. The beneficiation plant had three production lines originally designed to produce iron ore concentrates of 63% Fe, but was upgraded to accommodate higher quality ore to meet higher ore requirements of the Delta Steel Plant. The production of 63% to 67% Fe grade concentrates started in 1993. The handling facilities of Ajaokuta were tested in 1994 with a supply of 12,000 mt of 63% Fe concentrate. Delta Steel Co. had received a total of 15,000 mt of 66% to 67% Fe from Itakpe during the last three months of 1994. Ore and concentrates were transported by rail, river, and road. A 51-kilometer (km) Itakpe-Ajaokuta rail line was completed and commissioned in 1990 and an Ajaokuta-Warri rail line was under construction to transport concentrates to Aladja. Concentrates were transported either via the Niger River by barges or by road to Warri for Delta Steel Co. at Aldja.

**Lead and Zinc.**—Lead, zinc, and silver were produced at the Ishiagu Mine about 20 km southeast of Enugu by Geominex Mining and Exploration Co. of Nigeria. Geominex, a domestic company, was seeking investors to increase its production by 100%. The 1994 production figures were about 5,000 mt/a of ore averaging 65% to 70% lead, 62% to 67% zinc, and about 250 grams per metric ton (g/mt) to 300 g/mt of silver. The Ishiagu Mine could increase output by mid-1995 if equipment and funding were in place.

**Tin.**—Production of tin in 1994 remained very low at 278 mt/a, much less than the 1993 figure of about 580 mt/a. The tin industry continued to experience a shortage of spare parts, mine flooding, and low prices. The Makeri Tin Smelter, which produced about 180 mt/a, exported about 75% and retained the remaining for domestic consumption. However, because only refined tin could be exported from Nigeria and local miners preferred selling to smugglers for hard currency, it was difficult for the smelter to produce at its installed capacity. Smuggling had flourished so much that the Government was considering the legal exportation of tin concentrates. Other possible reasons for the weak domestic tin industry were attributed to the depletion of minable reserves and a world decrease in demand for tin. External factors contributed to the weak industry, including

production and exports from China and the former Soviet Union.

### ***Industrial Minerals***

The RMRDC enumerated a number of mineral commodities that have proven reserves or adequate resources for industrial development. Among minerals identified in commercial quantities for investor consideration were asbestos, barite, bauxite, bentonite, clay, kaolin, fire-clay, diatomite, dolomite, feldspar, fluorspar, graphite, gypsum, ilmenite, kyanite, limestone, phosphate, salt, soda ash, sulphur and talc. Other industrial minerals reported in commercial quantities were gemstones including amethyst, aquamarine, sapphire, topaz, and tourmaline.

The RMRDC's pilot plants produced about 105,000 mt/a of kaolin at Katsina, 15,000 mt/a of phosphate rock at Katsina, 3,000 mt/a of soda ash at Maiduguri, and 3,000 mt/a of talc at Maiduguri in 1994. Other commodities produced in 1994 included limestone, 2.7 Mmt; marble, 7.3 Mmt; and various gemstones including aquamarine, corundum, tourmaline and emerald.

**Fertilizer.**—Nigeria had two fertilizer plants, the National Fertilizer Co. of Nigeria (NAFCON) in Onne, which was the sole producer of ammonia and urea, and the Federal Superphosphate Fertilizer Co. in Kaduna. The average capacity utilization at the plants in 1994 was 98%. The Ministry of Agriculture and Natural Resources bought fertilizer from NAFCON on commercial terms and distributed it to State Government stations and other authorized customers. Fertilizer smuggling was widespread because the Government sold fertilizer at subsidized prices.

Construction work continued on the \$450 million NAFCON II plant adjacent to the existing plant. At completion, the plant would produce 1,000 metric tons per day (mt/d) of ammonia, 1,500 mt/d of Urea, and 50 mt/d of methanol. The plant's equity sharing partners were the Government, 62%; NNPC, 30%; and M. W. Kellogg of the U.S., 8%.

### ***Mineral Fuels***

**Coal.**—Variable quality coal is found in the Enugu Coalfields, ranging from high-sulfur/high ash coals to the low sulfur/low ash, non-coking sub-bituminous coals. Coal seams are not usually very thick, ranging from less than 1.0 meter (m) to 2.3 m.

The Government continued to pursue its efforts to divest by inviting private investors to participate in development of the coal industry. Terra Explorations Nigeria Ltd., a joint-venture partnership between the Government of Nigeria and South Africa's Terra Explorations Co., reopened some dormant mines in the Enugu Coalfields. Production in 1994 was estimated at about 30,000 mt/a and was expected to be increased to 50,000 mt/a, which is the maximum tonnage the Port Harcourt port could handle. Terra is expected to handle

the operations of the mines via a South African Co. under contract to Terra and also construct rail links and improve other handling facilities at the port.

Production at the Onyeama Mine was expected to be increased to between 400,000 mt/a and 500,000 mt/a by 1995. Reserves at the Onyeama Mines were reported at 254 Mmt.

**Natural Gas.**—Nigeria ranks 12th in the world with proven natural gas reserves of more than 3 trillion m<sup>3</sup>. Most of the natural gas produced was associated gas, of which about 79% was flared and 9% marketed, while another 9% was reinjected. The remainder was used in the field for energy generation. Nigeria also had probable reserves of about 1.8 trillion m<sup>3</sup>.

The Government actively encouraged local consumption and the reinjection of gas into reservoirs for enhanced oil recovery. Only the Nigerian Gas Co. (NGC) bought gas from producing joint ventures and sold it to local customers. NGC sold 69% of its gas to five powerplants, four of which were near the gas wells. The fifth powerplant, Egbin, served the Lagos area and was connected by a 357-km Egbin-Lagos pipeline that was to be extended to Kaduna via Ajaokuta and Abuja. The pipeline had a capacity of about 27 million cubic meters per day (Mm<sup>3</sup>/d) of natural gas to Lagos for industrial use; and to Kaduna through Ajaokuta, where the steel complex would be a major consumer; and to the Federal Capital Territory. The other main customer was NAFCON, which uses natural gas as a feedstock. Future customers may include the LNG plant, Eleme petrochemical plant, the aluminum smelter, and phase 2 of the NAFCON project. Other noteworthy natural gas projects were Mobil Oil Co.'s Oso condensate project, Chevron's proposed natural-gas-liquids extraction project, and a Nigerian National Petroleum Corp. (NNPC) joint compressed natural gas project with NGC, for use as a source of automotive fuel.

The Nigerian Liquefied Natural Gas (NLNG) board continued with plans to build a 5.3 Mmt/a LNG liquefaction plant, using the American "Air Process." The \$4.5 billion two-train LNG plant was a joint venture between Nigerian LNG Ltd., a subsidiary of NNPC, holding 49%; Shell Oil Co. of the United States, 24%; ELF Aquitaine Oil Co. of France, 15%; AGIP oil of Italy, 10%; and International Finance Corp., 2%. The plant was to be built in Rivers State at Finima, a village near Bonny. The cost of the project included five LNG tankers and more than 200 km of pipelines. The NLNG was under agreement to transport and market the LNG through a subsidiary, Bonny Gas Transport Ltd. The NLNG had purchased four LNG tankers that were earmarked for hire on the world market. The company was expected to buy the fifth tanker before the plant comes on-stream.

**Petroleum.**—Production of crude petroleum remained stable even though the country was suffering from strikes and unrest following the removal of petroleum subsidies in last

half of 1994. Production of crude oil was from small fields and many wells. Wells produced between 500 and 5,000 bbl/d. About 65% of all oil produced in Nigeria was light, sweet crude with an API gravity of 35 or higher. Also, about 65% of output was onshore in the Niger Delta areas, with nearly all the rest produced from offshore wells in the shallow continental shelf. The Government continued to pursue its agenda of increasing the country's oil reserves to 25 billion bbl by 1995. Hence, successful bidders who were equity partners with NNPC on deep-water concessions, began exploration and development work in 1994. The result was an addition of about 1.5 Mbbbl to the proven reserves. Production of crude petroleum in 1994 averaged 1.9 Mbbbl/d, of which about 1.865 Mbbbl/d was exported, meeting Nigeria's OPEC quota. The balance of production was used locally to manufacture petroleum products.

Nigeria had 4 oil refineries, 1 in Kaduna, 2 in Port Harcourt, and 1 in Warri, with a combined capacity of 445,000 bbl/d. Most of the petroleum products refined in the country were intended for domestic consumption, but the heavier products were exported. Nigeria also exchanged about 50,000 bbl/d of light crude with Saudi Arabian heavy crude for production of base oil and lubricants at the Kaduna refinery. The Kaduna refinery was closed in July 1994 due to a fire in the refinery's fluid catalytic cracking unit. The Warri refinery was also under repairs in 1994, leaving only one of the Port Harcourt refineries operational.

### Reserves

Nigeria's proven oil reserves at yearend 1994 were about 20 billion bbl. Known natural gas reserves were about 3 trillion m<sup>3</sup>, ranking Nigeria fifth in the world in natural gas reserves. Nearly 70% of the oil and gas reserves were onshore in the Niger River Delta area.

The total *in situ* reserves of Nigerian coal were reported at 1.5 billion mt. A lignite belt exists across the southern portion of the country. Reserves of the lignite deposits were estimated to be as much as 250 Mmt.

Total iron ore resources were estimated at about 2.5 billion mt with an average iron content of 37%. About 2 billion mt of the total iron ore reserves are at Agbaja with an average iron content of 45% to 47%.

### Infrastructure

The Nigerian railway system, the fifth largest in Africa, consists of 3,510 km of 1.067 m-gauge track. The two main north-south lines, from Lagos to Kano (1,126 km), and from Port Harcourt to Maiduguri (1,443 km) were connected by a 179-km east-west line from Kaduna to Kafanchan. Lines such as the Ajaokuta-Port Harcourt line were used to transport goods and mineral commodities to ports. Roads totaled about 120,000 km, of which 35,000 km were paved. Inland waterways of about 9,000 km consisted mainly of the Niger and Benue Rivers; these also served as routes for

commodity transport.

The Kainji dam and powerplant with a capacity of about 11,500 megawatts was the major source of hydroelectric power for the country. Major ports included Apapa and Tin Can Island in Lagos, Port Harcourt, and Koko near Warri.

## Outlook

The Government's fiscal and financial incentive programs designed to attract local and foreign investors into new investments and developments in the mineral industry was expected to continue. Petroleum and natural gas were expected to continue dominating the economy for the foreseeable future. Major changes in policy and programs owing to the political situation in the country could affect industrial development, particularly the nonfuel minerals industry. Development of the steel industry could enhance the growth of heavy equipment and metal-working industries, and could provide jobs for the available large labor force.

Revitalization of the coal industry could add to reserves and provide additional source of foreign exchange when fully exploited. Joint-venture agreements signed with foreign investors were expected to increase production of coal and reduce importation of coal.

The mineral industry as a whole should continue to enjoy considerable growth because of increasing activity in the mineral fuels sector. The planned output of 2.5 Mbb/d of

crude oil by 1995 was expected to be achievable if the political situation did not deteriorate. The abundance of natural gas could provide a new energy source and feedstock for the chemical and petrochemical industries. Completion of Nigeria-Ghana pipeline would provide additional revenue.

Development of other nonfuel minerals would broaden the country's industrial base, particularly with favorable mining and investment codes, which were under review.

---

<sup>1</sup>Where necessary, values have been converted from Nigerian naira (N) to U.S. dollars at N22.00=US\$1.00 in 1994, the official rate. Conversion on parallel markets was at N80.00=US\$1.00 in 1994.

<sup>2</sup>Africa Economic Digest, "Nigeria's aluminium project back on track", December 1994,p.24.

## Other Sources of Information

Federal Ministry of Mines and Power  
Six Storey Building,  
Lagos, Nigeria

Nigerian National Petroleum Corporation  
NNPC Building Falomo  
Lagos, Nigeria

Federal Ministry of Petroleum and Mineral Resources  
Federal Secretariat Building  
Ikoyi, Lagos  
Nigeria

TABLE 1  
NIGERIA : PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993	1994 e/
<b>METALS</b>					
Columbium and tantalum concentrates:					
Gross weight	44	36	40	40	30
Columbium content e/	19	15	17	17	13 3/
Iron and Steel:					
Iron ore, gross weight	374	398	400 e/	400	400
Steel, crude	220	250	200 e/	150	105 3/
Lead:					
Mine output, Pb content e/	106	100	100	100	3,500 3/
Tin:					
Mine output, cassiterite concentrate:					
Gross weight	200	350	568	580	278
Sn content	145	255	415	400	185 3/
Metal, smelter	130	230	370	350	179 3/
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic e/	3,500	3,500	3,500	3,500	2,600 3/
Clays:					
Kaolin e/	1,360 3/	1,300	1,300	1,300	105,000 3/
Unspecified e/	60,100 3/	60,100	60,100	60,100	60,100
Feldspar e/	714 3/	700	700	700	700
Nitrogen:					
N content of Ammonia	405	367	337	350	350
N content of Urea	573	373	486	400	400
Stone:					
Limestone	1,140	1,440	1,400	1,400	2,700 3/
Marble	1,610	1,600 e/	1,600 e/	1,600	7,300 3/
Shale e/	67 3/	70	70	70	70
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal, bituminous	78	138	140	140	140
Gas, natural:					
Gross	27,600 r/	31,300	32,000	31,300	31,300
Dry	3,230 r/	2,570	2,897	2,600	2,600
Petroleum:					
Crude	660,000 r/	689,000	715,000	715,000	715,000
Refinery products:					
Gasoline	30,700	30,800	33,200	30,800	30,800
Jet fuel e/	700	900	900	500	500
Kerosene	14,600	14,800	14,600	14,500	14,500
Distillate fuel oil	17,400	26,500	16,000	15,500	15,500
Residual fuel oil	24,000	13,500	877	800	800
Unspecified	3,800	1,620	1,600	1,000	1,000
Total	91,200	88,100	672,000	63,100	63,100

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; many not add to totals shown.

2/ Includes data available through July 14, 1995.

3/ Reported figure.

TABLE 2  
NIGERIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Million metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Coal	thousand metric tons	Nigerian Coal Corp. (Government, 100%)	Enugu	150.
Iron ore	do.	National Iron Ore Mining Co., (Government, 100%)	Itakpe, near Okene	325
Iron and Steel	do.	Ajaokuta Steel Co. Ltd. (Government, 100%)	Ajaokuta City	1.3. 0.7. (Rolled Steel)
	do.	Delta Steel Co. Ltd. (Government, 100%)	Aladja	1.00. (Liquid Steel) 0.32. (Rolled Steel)
	do.	Jos Steel Rolling Co. Ltd. (Government, 100%)	Jos	0.21.
	do.	Katsina Steel Rolling Co. Ltd. (Government, 100%)	Katsina	0.21.
	do.	Oshogbo Steel Rolling Co. Ltd. (Government, 100%)	Oshogbo	0.21.
Nitrogen	thousand metric tons	National Fertilizer Co. of Nigeria (Government, 63%; M.W. Kellogg, 37%)	Onne	548, N content of ammonia. 360, N content of urea.
Petroleum, crude	million barrels	Nigerian National Petroleum Corp. (Government, 60%; Private, 40%)	Lagos	695.
Petroleum refinery products	thousand barrels	Kaduna refinery (Government, 100%)	Kaduna	40.
	do.	Warri refinery (Government, 100%)	Warri	46.
	do.	New Port Harcourt refinery (Government, 100%)	Port Harcourt	55.
	do.	Old Port Harcourt refinery (Government, 100%)	Port Harcourt	22.
Tin	thousand metric tons	Makeri Smelting Co. Ltd. (Government, 100%)	Jos	1.