THE MINERAL INDUSTRY OF

NIGERIA

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Nigeria, Africa's most populous nation, was the continent's largest oil producer in 1998. According to the U.S. Department of Energy, Nigeria ranked 11th in production of crude petroleum and condensate by volume, accounting for about 3% of world production and about 7% of the Organization of Petroleum Exporting Countries' (OPEC) total production (Energy Information Administration, June 1999, International petroleum statistics report, accessed July 16, 1999, at URL http://www.eia.doe.gov/emeu/ipsr/t11.html). With exports of 251 million barrels of oil to the United States, Nigeria was America's fifth largest supplier of crude petroleum (U.S. Energy Information Administration, June 1999, Table 21—Imports of crude oil and petroleum products into the United States by country, Petroleum Supply Annual 1998, v. 1, accessed July 16, 1999, at URL http://www.eia.doe.gov/oil_gas/petroleum/data_publications/ pet_data_publications.html).

The oil sector was the cornerstone of the Nigerian economy, providing about 80% of total Government revenues and accounting for about 96% of the country's total export earnings (Tola Akinmutimi, Guardian, July 21, 1999, Nigeria's exports drop, reflects economic downturn, accessed July 21, 1999, at URL http://www.nwguardiannews.com/business/bn755603.htm; Bassey Udo, March 12, 1999, Post Express, [untitled], accessed March 16, 1999, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/c17c4d4f2383651f852567320000c205?OpenDocument). Petroleum accounted for more than 40% of the country's gross domestic product (GDP) compared to agriculture's contribution of 30% (Hawkins, 1999; Bassey Udo, Post Express, [untitled], March 12, 1999, accessed March 16, 1999, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/c17c4d4f2383651f852567320000c205?OpenDocument). Other primary mineral production accounted for less than 0.3% of GDP (Tradeport, March 3, 1998, Metals conference, accessed July 14, 1999, at URL http://tradeport.org/ts/countries/nigeria/mrr/mark0017.html).

Despite recurrent disruptions in the availability of petroleum fuels and electrical energy, Nigeria's GDP was reported to have grown by an estimated 2.3% in 1998 compared with a 3.8% growth rate in 1997 (Hawkins, 1999).

Government Policies and Programs

The transitional military Government, installed in June 1998, introduced widespread reforms of Nigeria's mineral industry. The new Government abolished the Ministry of Petroleum Resources, however, many of its functions were assumed by the Department of Petroleum Resources (Bassey Udo, Post Express, August 31, 1998, Scrapping of Petroleum Ministry elicits mixed reactions, accessed September 1, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/93ab6149f4d7ba2685256671005869d7?OpenDocument). A national policy on solid minerals, approved by the Federal Executive Council in April, was confirmed by the Provisional Ruling Council at yearend. In December, the Government also promulgated new mineral laws and regulations (Isa Abdulsalami, December 23, 1998, Government approves solid minerals policy, deregulates coal production, Guardian, accessed January 22, 1999, at URL http://www.ngrguardiannews.com/news/nn7340608.htm).

The Ministry of Solid Minerals Development was involved in the promotion, exploration, and development of Nigeria's solid minerals. (See table 1.) The Department of Petroleum Resources concerned itself with the oil and natural gas segment of the mineral industry. The Ministry of Mines, Power, and Steel administered the iron and steel sector. Environmental regulations were administered by the Federal Environmental Protection Agency and the Department of Petroleum Resources.

All mineral rights were held by the Federal Government, which continued to encourage strongly the diversification of the nation's mineral industry. Only licensed activities were authorized to conduct mining operations; however, decades of Government indifference to the nonfuel mineral industry have resulted in widespread unregulated artisanal mineral operations (Ikenna Nwosu, October 20, 1998, Investment in Nigerian solid minerals sector, Post Express, accessed November 4, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/0c8a3b7d43206160852566ac00595008?OpenDocument).

Profits earned on production of most minerals were subject to a 30% tax rate. Petroleum company profits were subject to an 85% tax. The tax on profits from natural gas production was reduced to 35% in January 1998 (Yahoo, January 6, 1998, Nigeria cuts income tax for gas projects, accessed January 7, 1998, at URL http://biz.yahoo.com/finance/980106/nigeria_gas_1.html). Gas royalty payments were 7% for onshore production and 5% for offshore production. Onshore oil production was subject to a 20% royalty. Offshore oil production royalty rates ranged from 16.67% for operations in water depths of less than 200 meters (m) to 0% for production from water depths in excess of 1,001 m.

Petroleum and water issues resulted in border disputes. Cameroon and Nigeria had taken the ownership of the oil-prospective Bakassi Peninsula to the International Court of Justice. Equatorial Guinea and Nigeria disputed the location of the national boundary in the vicinity of offshore oil development. Niger and Nigeria were negotiating the issue of a decade-old dam on the Zango River in Niger and the resultant desiccated Lake Kalmalo in Nigeria (Oghoghor Obayuwana, Guardian, May 6, 1999, Nigeria, Equitoraal [sic] Guinea opt for peaceful resolution of border dispute, accessed May 6, 1999, at URL http://www.ngrguardiannews.com/news/nn748020.htm; Abubakar Umar, October 8, 1998, Nigeria, Niger disagree on Lake Kalmalo, Post Express, accessed October 8, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/affe1cc7c16a7dbc85256696007ef782?OpenDocument).

The Government's effort to reduce natural gas flaring was augmented by the January 1998 increase in the cost of flaring from $0.006[1] per 28.3 cubic meters (m^3) (1,000 standard cubic feet) to $0.12 per 28.3 m^3 (Hussain, 1998). The lack of natural gas demand when the oilfields were established resulted in little associated gas gathering infrastructure. The oil companies flared an estimated 18.6 billion cubic meters per year of gas (Bassey Udo, August 25, 1998, 45.8 billion kilowatts of heat generated daily in Niger Delta, Post Express, accessed August 25, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/7422028512f7f2848525666a00742ffd?OpenDocument).

The retail fuel shortage continued during 1998. The fuel importers of the old regime, Glencore International AG of Switzerland and Wintershall AG of Germany, were superseded when the new Government authorized African Petroleum Plc; Elf Petroleum Nigeria Ltd., a subsidiary of Elf Aquitaine Group of France; Mobil Oil Nigeria Plc; Shell Petroleum Development Co. Ltd.; Texaco Nigeria Plc; and Unipetrol Nigeria Plc to import refined petroleum products (Africa Energy & Mining, 1999). The shiploads of incoming products overloaded the petroleum handling capacity of the ports (Chijama Ogbu, March 19, 1999, Nigeria lacks capacity to cope with fuel imports, says workshop, Post Express, accessed March 19, 1999, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/f3a8755d9a839dcd85256738006963c3?OpenDocument).

The Government deregulated the liquefied petroleum gas market in October and abolished the petroleum distribution monopoly of the Pipelines and Products Marketing Co. Ltd. (PPMC), a subsidiary of the Nigerian National Petroleum Corp. (NNPC), in December. Also in October, the Government proposed to retain 40% of Calabar Cement Co. Ltd., Jos Steel Rolling Co. Ltd., Katsina Steel Rolling Co. Ltd., National Electric Power Authority (NEPA), NNPC, Oshogbo Steel Rolling Co. Ltd., and the steel plants. Forty percent of each enterprise was to be sold to international investors, and 20%, to local investors (Joseph Latunji, October 19, 1998, Privatization of manufactures, accessed June 30, 1999, at URL http://tradeport.org/ts/countries/nigeria/mrr/mark0009.html).

The Oil Mineral Producing Areas Development Commission (OMPADEC) had been formed in 1992 as the Government's vehicle for funneling oil revenues back to the oil-producing communities. OMPADEC had, in theory, received 3% of the national oil revenue. In 1998, the new Government increased the OMPADEC share of oil revenue to 13%.

[1]Where necessary, values have been converted from naira (₦) to U.S. dollars at the average exchange rate of ₦85.5=US$1.00 in 1998.

At yearend, the Government established a special tribunal to adjudicate oil spill compensation, replacing the regular courts.

Trade

Spot prices for Bonny Light, Nigeria's crude oil export standard, averaged $12.77 per barrel in 1998 compared with $19.40 per barrel in 1997 and $21.24 per barrel in 1996 (Middle East Economic Survey, May 19, 1999, Spot quotations for the OPEC reference basket, accessed July 7, 1999, at URL http://www.mees.com/dotcom/opec_basket). The value of all Nigerian exports in 1998 was $9.7 billion, down from $15.2 billion in 1997. Oil exports were valued at $9.3 billion in 1998 compared with $14.9 billion in 1997 (Hawkins, 1999; Holman, 1999).

Barite, bentonite, gypsum, and kaolin imports were officially prohibited; however, local production of barite and gypsum often did not meet quality specifications of the end-users, and imported material was often used.

Commodity Review

Metals

Aluminum.—Startup of the $2.5 billion smelter of Aluminium Smelter Co. of Nigeria Ltd. (ALSCON) continued to be restrained by funding, gas pricing and supply, and transportation problems. One potline had been energized in 1997. By the end of 1998, the 193,000-metric-ton-per-year (t/yr) capacity smelter was producing at the rate of only 100 metric tons per day. Funding of the 70% state-owned joint venture was constrained by the Government's budget problems. ALSCON continued to negotiate during the year for lower natural gas prices with Shell. ALSCON was seeking natural gas at about $0.77 per 28.3 m^3. Shell was offering to supply gas at $1.53 per 28.3 m^3 of natural gas. Prices charged to industrial consumers for natural gas by Nigeria Gas Co. (NGC) ranged from $1.58 to $1.94 per 28.3 m^3, but NGC reportedly supplied gas to the state-owned NEPA at about $0.04 per 28.3 m^3 (Bassey Udo, October 19, 1998, FG may review prices of gas, Post Express, accessed October 19, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/bcefafff6f9130af852566a3000e1ffa?OpenDocument).

A dredging contract for deepening the Imo River to 14 m was abrogated by the Government in 1998 owing to lack of progress (Post Express, March 9, 1999, Dredging of Imo River resumes at instance of ALSCON, accessed March 9, 1999, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/2838be0e565bf4dd8525672e004cf113?OpenDocument). The shallow Imo River channel forced ALSCON to use barges to transship raw materials in and finished products out from the smelter at Ikot Abasi. Many of the plant's 1,800 workers went on strike in October, demanding that junior staff salaries be adjusted upward after the new Government increased the national minimum wage. Strikers also demanded that $650 be paid to each nonexpatriate worker as a production bonus for keeping the plant in operation for a year (Post Express, October 29, 1998, Strike forces Alscon production down by 10 per cent, accessed October 29, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be 809d4d8a85256436005cf58e/7dfe38bf0b8a8703852566ac0047 cc9e?OpenDocument). Repair costs for equipment damaged during the 1-week strike were estimated to be $100 million (Mining Journal, 1998).

Steel.—The Government authorized funds to resume steelmaking at Delta Steel Co., which had ceased production in 1995. After production resumed, the Government announced that Delta Steel was to be leased to Chinese investors, and Delta Steel announced that it required an additional $18.2 million to renovate the plant, $15.6 million to satisfy its debt to NEPA, and $6 million to pay accrued retirement benefits and staff wages (Post Express, September 11, 1998, Chinese investors to take over Delta Steel, accessed September 11, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec48 85256436005d3eb0/8e9cb1de0bd90b188525667b0065a5e1?OpenDocument).

Former Government ministers and relatives of the former president had bought Ajaokuta Steel Co. Ltd.'s $2.5 billion debt to Russian contractors for $500 million. The new Nigerian Government undertook an investigation to determine if the $2 billion windfall was an attempt to defraud the nation; the contractors and the Russian Government viewed the deeply discounted factoring transaction as a valid means of removing the decade-old debt from the contractor's books (Chris Onuorah, December 21, 1998, Russia may not probe Ajaokuta Steel fraud, Post Express, accessed on February 1, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e987 3ec4885256436005d3eb0/7be1402678612f9b852566e20001da3 a?OpenDocument).

Industrial Minerals

Cement.—The eight Nigerian cement plants were not able to satisfy local demand. Plants were battered by the fuel shortages that adversely affected plant operations and product delivery. The Government proposed to assist with the rehabilitation of inefficient plants and suggested a new cement plant be erected in Guyuk in Adamawa State (Post Express, July 7, 1998, FG sets up task force on Cement Technology Institute, accessed July 13, 1998, at URL http://postexpresswired.com/ postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/ 532036998a64472e8525663900466717?OpenDocument).

Scancem International A.S. of Norway acquired 40% of the shares in Bonny Allied Industries Ltd., a new 25,000-metric-ton-storage-capacity cement import terminal in Port Harcourt. Scancem sold its holdings in the Eastern Bulk Cement Ltd. terminal in Port Harcourt.

Clay.—Kaolin demand was estimated to be 170,000 t/yr. Two kaolin processing plants were commissioned in 1998, the Kankara Kaolin and Chemical Industries near the Kankara Mine in Katsina State and the Crystal Kaolin Factory near the Major Porter Mine in Plateau State. Nigeria Kaolin Ltd. proposed to expand its production to 50,000 t/yr. Other kaolin operations were in Akwa-Ibom, Ekiti, Imo, and Rivers States.

Gemstones.—Nigeria has the potential for becoming a significant gemstone supplier to the world market. There was artisanal recovery of amethyst, aquamarine, beryl, emerald, sapphire, topaz, tourmaline, and zircon. In July, the Igbojaye and Ofiki areas in southwest Nigeria were overrun by Malian and Senegalese nationals illegally mining the community's gemstone deposits.

Glass.—Guinea Glass Plc rebuilt a 38,000-t/yr-capacity glass furnace in Agbara, Ogun State.

Nitrogen.—The effective fertilizer price increase for consumers after the 1997 removal of the federal fertilizer subsidy depressed demand in 1998 and output from the National Fertilizer Co. (NAFCON) plant was marginally reduced by a 2-week strike that ended in August (Iheanyi Amuta, August 19, 1998, Workers' strike costs NAFCON N10.5 billion, Post Express, accessed August 19, 1998, at URL http://postexpress wired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3e b0/ 0340bf5af63545b385256664005b5686? OpenDocument). Sales were expected to rebound and NAFCON was planning a plant expansion adjacent to its original site in Onne, Rivers State. The lead contractor for the NAFCON II expansion was M.W. Kellogg Co. of the United States.

Salt.—Salt was produced from brine by small-scale solar and wood-fired evaporation operations in Plateau State. Local salt production augmented imported salt produced by Brazilian subsidiaries of the Nigerian companies, the Dangote Group and Union Dicon Salt Plc. The Ministry of Solid Minerals proposed development of a rock salt deposit in Kaseyo, Benue State.

Mineral Fuels

Bitumen.—With the Nigerian Bitumen Project, the Government was promoting the development of the surface petroleum seepages and the tar sands of southwestern Nigeria as a source of bitumen for the local road construction and repair market, which in 1998 was wholly dependent upon imported bitumen. Bitumen runs at the Kaduna refinery had ended by mid-1997 when the refinery was closed for rehabilitation. A lease sale for 15 bitumen exploration and development blocks was proposed for 1999.

Coal.—Associated with the new mining laws and policies, the Government deregulated the Nigerian coal industry in 1998, abolishing the monopoly that the underfunded Nigerian Coal Corp. had on coal exploration and production (Isa Abdulsalami, December 23, 1998, Govt approves solid minerals policy, deregulates coal production, Guardian, accessed January 22, 1999, at URL http://www.ngrguardiannews.com/news/ nn734608.htm). Coal output included production from the Enugu underground mine in Enugu State and the open pits of the Okaba Mine in Kogi State and the Owukpa Mine in Benue State. The 36,000-t/yr Okpara Mine in Enugu State underwent an equipment upgrade in 1998. Transportation conditions constrained production, especially the coal storage capacity of the terminal at Port Harcourt (Turner, 1999). There were additional coal deposits at Afikpo in Ebonyi State; Amansiodu, Ezimo, Inyi, and Ogugu in Enugu State; Dekina and Ogboyoga in Kogi State; and Lafialobi in Nassarawa State. Lignite deposits occurred in Abia, Arambra, Delta, and Imo States.

Natural Gas.—The $865 million Oso Condensate Project of Mobil Producing Nigeria Ultd. (51%) and NNPC (49%) shipped its first liquids, about 30,000 metric tons (t) of propane and butane, in 1998 (Goddy Ikeh, September 8, 1998, Mobil exports natural gas liquids to United States, Pan African News Agency, accessed September 11, 1998, at URL http://www.africanews.org/PANA/economics/19980908/feat3.html).

The 5.78-million-metric-ton-per-year (Mt/yr)-capacity[2] Nigeria Liquified Natural Gas Ltd. (NLNG) facility was scheduled to come on-stream in 1999. The NLNG consortium, NNPC (49%), Shell (25.6%), Elf (15%), and Nigerian Agip Oil Co. (10.4%), authorized the construction of a third 2.9 Mt/yr production line to come on stream in 2002 (Turkish Daily News, May 29, 1998, Nigerian LNG firm to expand $3.7 bln plant, accessed May 29, 1998, at URL http://www.turkishdailynews.com/tdn/freedaily_tdn/latest/econ2.htm). The expansion of the plant at Finima on Bonny Island was estimated to cost an additional $1.2 billion (Oil & Gas Journal, 1999). Companies were completing gas wells and installing the gas-gathering infrastructure and compression equipment needed to convey natural gas to NLNG.

During 1998, Shell joined the West African Gas Pipeline consortium of Chevron Nigeria Ltd., Ghana National Petroleum Corp., NGC, Société Beninoise de Gaz S.A., and Société Togolais de Gaz S.A. The consortium initiated a $2 million feasibility study in August for the proposed 5-million-cubic- meter-per-day pipeline. The 1,000-kilometer (km) pipeline was expected to cost about $400 million (Hussain, 1998).

A 20,000-barrel-per-day natural gas-to-liquids plant was proposed by Chevron Overseas Petroleum Inc. and Sasol Ltd. of South Africa. The $700 million synthetic crude oil plant was to be built adjacent to Chevron Nigeria Ltd.'s Escravos gas plant in Delta State (Kingsley Kubeyinje, May 29, 1998, Work begins on gas plant, Business Day, accessed June 11, 1998, at URL http://www.bday.co.za/98/0529/world/w34.htm).

Shell Nigeria Gas Ltd. (SNG) was formed in March 1998 to focus on the downstream gas market. SNG committed $39 million to build 40-km and 70-km gas transmission pipelines from NGC facilities to industrial customers (Post Express, July 20, 1998, Shell Nigeria Gas announces new launch date, accessed July 21, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/ffea7f085689a5f385256647005a76d8?OpenDocument; Bassey Udo, July 24, 1998, Eight firms conclude plans to source gas from Shell, Post Express, accessed July 24, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/e331a56cc19e4fa08525664a00508cd1?OpenDocument).

[2]Upon regasification at the discharge terminals, the proposed annual plant output will be equivalent to 7.15 billion cubic meters of natural gas.

Petroleum.—Six joint ventures with NNPC produced most of the oil in Nigeria, with nearly half of the oil produced by the joint venture operated by Shell Petroleum Development. (See Table 2). Fields controlled by six indigenous companies accounted for about 4% of total production. Since 1993, a number of international oil companies and 48 indigenous oil firms have entered into production-sharing contracts with the Government, which shifted the burden of funding exploration to the oil companies.

Frequent production breaks in 1998 were attributed to accidents or social unrest. The Shell joint venture alone was subject to 325 incidents compared with 150 in 1997 (Shell Nigeria Petroleum Development Co. Ltd., 1999, Security in Nigeria, accessed July 9, 1999, at URL http://www.shellnigeria.com/shell/security_rhs.asp). Production from the Delta region was reduced during community protests through much of August and again in October (Corzine, 1998; Petroleum Economist, 1998b; Associated Press, December 1, 1998, Shell closes part of pipeline, accessed December 4, 1998, at URL http://dailynews.yahoo.com/headlines/ap/international/story.html?s=v/ap/19981201/wl/nigeria_oil_1.html).

For 1998, the NNPC's joint-venture partners proposed exploration and production projects that would require more than $5 million in federal funding for the NNPC; however, the Government's 1998 budget allocated only $2.5 billion to NNPC. During 1998, the Government's income was adversely affected by the decreasing international oil prices, OPEC's reduction of Nigeria's oil production quota, and reduced petroleum production owing to often-violent civil disturbances in the Delta producing region (BBC News, January 1, 1999, Oil prices threaten Nigerian economy, accessed January 5, 1999, at URL http://news.bbc.co.uk/hi/english/world/africa/newsid_246000/246301.stm). Because of the reduced income, the Government was unable to satisfy budgeted funding demands, and funds that were released did not become available until August 1998 (Shell Petroleum Development Co. Ltd., 1999, 1998 in perspective, accessed on July 9, 1999, at URL http://www.shellnigeria.com/info/env_1998/1998t.html; Matthew Tostevin, May 12, 1998, [untitled], Reuters, accessed May 12, 1998, at URL http://biz.yahoo.com/finance/980512/oil_nigeri_1.html). Delayed funding and the drop in oil prices forced a number of the joint ventures to defer proposed operations, caused staff layoffs, and reduced funding for community projects (Mfon Ekefre Uyo, July 8, 1998, Mobil to increase production level, Post Express, accessed July 13, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/0ff084d580ff81a48525663a005ef103?OpenDocument; Yahoo, May 4, 1998, Mobil says cut Nigeria jobs to match budget, accessed May 5, 1999, at URL http://biz.yahoo.com/rf/990504/beg.html). The limitations of multinational business companies apparently have not been perceived by the communities. Many clans were upset and felt that the oil companies were targeting their natives for layoff or retirement and that the reduced community development efforts were directed at them (Mfon Ekefre, June 13, 1999, Akwa Ibom indigenes demand N20b compensation from oil firms, Post Express, accessed on June 29, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3e b0/bec3cc90652d5b71852567920055532d?OpenDocument; Jude Okwe, June 19, 1998, Eket youths plan protest rally against Mobil, Post Express, accessed June 23, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/2a45acc5085b45d48525662b004dc278?OpenDocument).

Oil companies indicated that 90% to 95% of their local employees were Nigerian; however, many communities loudly complained about the oil companies' unfair treatment, including that companies failed to give their clanspersons contract and employment preference over other Nigerians, that not one of their indigenes was on the board of directors or a manager of a company operating in their community, and that of the Nigerians sent out of the country for training, not one was a native of their community (Iheanyi Amuta, November 11, 1998, Egi youths urge Elf Petroleum to abide by agreement, Post Express, accessed November 19, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/64f2c28d807e886a852566c1000f0f2b?OpenDocument; Michael Faloseyi, September 10, 1998, Tension in oil communities blamed on connivance between Govt, oil firms, Post Express, accessed September 19, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/8cae56df74ae6f088525667a007eda72?OpenDocument; Post Express, September 17, 1998, Cause of oil firms, indigenes rift identified, accessed September 17, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/3acf921fba0493eb8525668100555345?OpenDocument).

In 1996, the Government had decreed that all marginal oilfields were to be relinquished to the Ministry of Petroleum Resources. It estimated that there were 183 marginal oilfields, primarily small, undeveloped oil prospects, within the holdings of the joint venture that could be leased to indigenous oil companies. The multinational oil companies countered that the prospects had not progressed beyond exploration drilling because of the Government's failure to fund NNPC's share of development costs compounded by the OPEC production quota. Additionally, the oil companies considered the 1996 decree to be a breach of contract of the original oil mining concession terms (OPEC Bulletin, 1998; Post Express, March 19, 1998, Marginal oil fields' crisis—Oil firms point the way forward, accessed April 1, 1998, at URL http://postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/85864b5b751b99e3852565cc0057d5d3?OpenDocument). Chevron did farm out the undeveloped Ogbelle and Omerelu Fields to Jerez Energy International Inc. of Canada and Niger Delta Petroleum Resources of Nigeria in late 1997; however, throughout 1998, the companies awaited official Government approval of the transaction. Chevron had discovered the Ogbelle Field in 1981 and drilled the discovery well on the Omerelu prospect in 1987. Chevron also farmed out the Ajape Field to African Petroleum Plc, Star Oil Fields, and Nigerian Petroleum Development Co.

Early in 1998, Liberty Technical Services Ltd., a wholly owned subsidiary of Abacan Resources Corp. of Canada, drilled the Ima #9 well. The well tested a different, deeper sand package than the rest of the Ima Field. At midyear, Liberty's partner, Amni International Petroleum Development Co. Ltd. of Nigeria, terminated the joint venture on oil mining lease (OML) 112 and oil prospecting lease (OPL) 237 and became sole owner of the petroleum production from Ima Field's shallow reservoirs. Liberty retained a 10% working interest in the deep Ima sand package (Abacan Resources Corp., 1998).

Ashland Oil Nigeria Ltd. divested its Nigerian operations, including 50% interest in OML 90, 114, 118, and 225, to a subsidiary of Addax Oryx Group Ltd. of Switzerland. Ashland had been producing about 17,000 barrels per day (bbl/d) prior to the Government's revoking its production-sharing license in June 1997 when Ashland attempted to sell its interest to Perenco Investments S.A. of France without official Government approval (Petroleum Economist, 1998a).

The joint venture of Atlas Petroleum International Ltd. of Nigeria; CXY Nigeria Oil Field Services Ltd., a subsidiary of Canadian Occidental Petroleum Ltd.; and Summit Oil and Gas Worldwide Ltd., a subsidiary of TransAtlantic Petroleum Corp. of Canada (formerly Profco Resources Ltd.), began production from the five-well Ejulebe Field on Block OML 109, in 14 m of water about 15 km offshore. Production was piped to Conoco Energy Nigeria Ltd.'s 1.7-million-barrel-storage-capacity floating production and storage offtake tanker on the Ukpokiti Field (Journal of Petroleum Technology, 1998).

The Chevron Nigeria Ltd. joint venture began production from the Dibi, Ewan, Gbokoda, and Opolo Fields in 1998. Gbokoda was the joint venture's first oilfield in the Delta region to be developed without flaring associated natural gas. Produced gas was piped to Escravos. The Opolo Field, in 43 m of water, was developed by horizontal drilling. In October, some of the Chevron/NNPC joint-venture production facilities were occupied by people protesting the Government's policies and lack of investment in local infrastructure. Production of about 100,000 bbl/d was suspended during the occupation (Doggett, 1998). A Chevron Petroleum Nigeria Ltd. joint venture drilled three deepwater wells, two of which discovered oil.

The Government selected Elf to be the operator for the development of the Amenam-Kpona prospect, which straddled Elf's OML 99 and Mobil Producing Nigeria Ultd.'s OML 70 leases. Production was expected to begin in 2000. The Elf/NNPC joint venture brought the Ofon Field on-line in 1998. The Elf (40%), Chevron (30%), and Exxon (30%) venture drilled the Ukot-1 discovery well on OPL 222, about 97 km offshore in 750 m of water.

Mobil suffered a 40,000-barrel oil slick from a pipeline moving crude oil from the Idoho offshore facility to the Qua Iboe terminal. The January 12 spill originated about 20 km offshore and washed ashore on January 19. The ruptured pipeline was shut down and production of about 100,000 bbl/d of crude oil was suspended until repairs had been completed at the end of February (Yahoo, February 27, 1998, Nigeria Mobil says oil output back to normal, accessed March 2, 1998, at URL http:/biz.yahoo.com/finance/980227/oil_nigeri_2.html). The local communities subsequently contended that Mobil failed to comply completely with the original compensation request of $720,000 and increased the compensation demand to $12 million. In December, community youth attacked Shell's Forcados terminal because Mobil's offshore facilities were inconvenient (Reuters, May 4, 1999, Mobil says spent over $52 mln on Nigerian spill, accessed May 5, 1999, at URL http://biz.yahoo.com/rf/990504/be2.html).

In 1998, Shell brought the Ogbotobo and the Agbaya Fields on-stream and continued its pipeline upgrade program, awarding a $32 million contract for coating more than 2,500 km of its oil pipelines (Bassey Udo, September 18, 1998, Shell awards N2.7 billion contract, Post Express, accessed September 21, 1998, at URL http://www.postexpresswired.com/ postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/ 2cb068fbe0e2b8dd8525668200593eb3?OpenDocument). Shell initiated the $65 million Odidi associated gas gathering project, to recover 108,000 cubic meters per day of gas which was being flared. Global Energy and Refining Ltd. of the United States began a $150 million project to strip natural gas liquids from gas supplied by Shell's Bonny Division fields. Shell would sell the resultant dry gas. Shell announced a $500 million rehabilitation and expansion of the Bonny crude oil export terminal (Joseph Ollor-Obari, December 11, 1998, N43 billion expansion for Bonny oil terminal, Guardian, accessed January 22, 1999, at URL http://www.ngrguardiannews.com/business/ bn733401.htm).

Star Deep Water Petroleum Ltd., a subsidiary of Texaco Inc. of the United States, and Famfa Oil Ltd. of Nigeria drilled the Agbami-1 wildcat on OPL 216 in 1,433 m of water. The joint venture of Star Deep Water, the Statoil Group, and BP Amoco Plc (formerly British Petroleum Plc) began drilling the Nnwa-1 on OPL 218 in 1,282 m of water at yearend.

The Niger delta region reportedly lacked much of the infrastructure commonly found on drier ground (Iheanyi Amuta, August 19, 1998, Angry old men, women lock out Agip wokers, Post Express, accessed August 19, 1998 at URL http://post expresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/4206785e9b0d20f385256664005b065f?OpenDocument). The dearth of retail petroleum products outlets in the Delta has resulted in the illegal cottage industry of selling gasoline by the jerrycan. Fuel was typically obtained by gathering puddled fuel from spills. Accelerated corrosion of pipelines in the swamp environment result in spills, but a majority of the 72 spills reported in 1998 were attributed to sabotage by exasperated youths or communities (Post Express, July 14, 1999, NNPC boss links oil spillage to vandalisation, accessed July 29, 1999, at URL http://www.postexpresswired.com/ postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/ 7536a0ff302e7ffe852567af005a7b84?OpenDocument). Additionally, fuel may be obtained from petroleum product pipelines punctured for the occasion or by siphoning off refined products from the pipelines (Chijama Ogbu, November 27, 1998, Petroleum sector—Ways out of the mire, Post Express, accessed November 30, 1998, at URL http://postexpresswired. com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/44ed961363994c51852566c80058bfbc?OpenDocument; Kenneth Ugbechie, October 22, 1998, ...Youths still siphon fuel from burst pipe, Post Express, accessed October 22, 1998, at URL http://www.postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/e2063966519c1bf6852566a50002dfac?OpenDocument).

An estimated 2,068 people were killed in Jesse (population 12,000), near Warri, in Delta State by an explosion and fire on October 17. The people were engaged in gathering fuel leaking from a PPMC pipeline pumping gasoline from the Warri refinery to the storage and distribution facilities at the Kaduna refinery when the fuel caught fire (Iheanyi Amuta and Adagogo Brown, February 10, 1999, Jesse fire—Death toll now 2,068, Post Express, accessed February 10, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/b745bf4f42423f7f85256714001cc4c4?OpenDocument; BBC News, October 29, 1998, Nigeria inferno death toll climbs, accessed November 2, 1998, at URL http://news.bbc.co.uk/hi/english/world/africa/newsid_203000/ 203765.stm).

Because of the fire and pipeline damage, PPMC cut off the fuel supply to northern Nigeria. Petroleum products were moved north by truck until the damage was repaired. There was a respite in pipeline vandalization after the fire, but by October 23, PPMC reported another incident of pipeline sabotage (Post Express, October 25, 1998, Another oil pipe vandalized, accessed October 27, 1998, at URL http://postexpresswired. com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/ 7d45f6a967536469852566a9004b8f50?OpenDocument).

In March, Total S.A. of France was awarded the $214 million contract to repair the closed 110,000-bbl/d Kaduna crude oil refinery. Commercial production was scheduled to resume in January 1999. The New Port Harcourt refinery and the Warri refinery operated intermittently. Equipment often failed, and incidents of pipeline sabotage frequently cut off oil supply.

Infrastructure

NEPA originated more than 99% of the electricity generated in Nigeria. Its five thermal plants and three hydroelectric facilities had an installed electricity generating capacity of 5,876 megawatts (MW), but most plants were in poor condition, and NEPA was unable to meet local demand of about 2,480 MW (Aronze Okafo, June 1, 1997, Electric power generation, accessed July 14, 1999, at URL http://tradeport.org/ts/countries/ nigeria/mrr/mark0033.html; Bassey Udo, August 20, 1998, NEPA still bedeviled with problems...despite FG assurances, Post Express, accessed August 20, 1998, at URL http://www. postexpresswired.com/postexpress.nsf/cae9a9be809d4d8a85256436005cf58e/ d5a4d89fd54782cc85256665004b03ae?OpenDocument). The underfunded state-owned company suffered from high debt, vandalization, and lack of maintenance and spare parts (Chijama Ogbu, March 3, 1999, NEPA seeks to increase capacity to 131 percent, Post Express, accessed March 3, 1999, at URL http://postexpresswired.com/postexpress.nsf/ cae9a9be809d4d8a85256436005cf58e/96ee0e1cee254e82852567280055faee?OpenDocument). The local business response to the lack of electricity supply was to buy small generators; however, the fuel crisis that began in 1997 and extended through 1998 hindered the effectiveness of that option (Wallis, 1999).

The China Civil Engineering Construction Corp. had completed nearly 80% of the rehabilitation of the Nigerian railroad by yearend. About 1% of the nation's freight had been moved by rail prior to the reconstruction of the system

(Timeyin Uwejamomere, March 15, 1999, Lower Niger project to tackle 16 million cu.m dredge spoils, Guardian, accessed March 16, 1999, at URL http://www.ngrguardiannews.com/property/pn742803.htm). In 1998, Nigeria Railway Corp. increased the volume of freight hauled to 1.5 million metric tons compared with 137,000 t in 1996. In addition to rail, signal, and trackbed work, the Chinese delivered 35 locomotives, 320 freight cars, and 118 passenger cars (Josiah Emerole, February 12, 1999, N104b needed to complete rehabilitation of rail tracks, Post Express, accessed February 25, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/2776406b905efd8f852567160005bafe?OpenDoc ument; Post Express, February 26, 1999, Slow pace of railway development blamed on political crisis, accessed on March 3, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/9a790954b9d0b63a85256723007827a5?OpenDocument). An indication that the company was viewed as being viable came in October when a campaigning politician requested that the Nigerian Railway follow the example of the foreign oil companies and provide bridges, employment, hospitals, roads, and scholarships for the communities the rail line passed through (Kalu Okoronkwo, October 25, 1998, Railway, coal corporations urge to emulate oil firms, Post Express, accessed October 27, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/b36ec3b0bb43868d852566a9004c9452?OpenDocument).

In response to an oil production regulation change requiring that oil facilities have at least 30% local content, Nigerdocks Nigeria Plc opened a $16 million shipyard designed for the offshore construction market (OPEC Bulletin, 1998; Walter Ukaegbu, October 4, 1998, New shipyard for commissioning tomorrow, Post Express, accessed October 6, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/d028f28df892ef6f85256694007b7836?OpenDocument).

Outlook

The cost of doing business in Nigeria has been increasing. Attacks on oil facilities are becoming a preferred method to gain a forum to direct the Government's attention to the needs of the population. Many of the 1,500 villages in the Delta region look to the multinational companies to provide physical and social infrastructure, such as bridges, electricity, retail fuel outlets, hospitals, jetties, roads, scholarships, schools, telephone connections, and potable water lines (Iheanyi Amuta and Adagogo Brown, February 10, 1999, Jesse fire—Death toll now 2,068, Post Express, accessed February 10, 1999, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/b745bf4f42423f7f85256714001cc4c4?OpenDocument). International oil companies have community assistance programs in place that addressed some of the needs and traditionally have felt that it was the Federal, the local, or the State government's responsibility to provide infrastructure; however, the new Government began urging companies to do even more community development (Iheanyi Amuta, July 1, 1998, Bayelsa administrator imposes curfew in Brass LGA, Post Express, accessed July 13, 1998, at URL http://postexpresswired.com/postexpress.nsf/7c45df0e9873ec4885256436005d3eb0/b5756eb304f6c3278525663300696ee5?OpenDocument).

The nation's dependence on oil has been highlighted by the economic problems associated with the continued fuel shortage. Development of nonfuel minerals would significantly broaden the country's industrial base. The Government's fiscal and financial incentive programs are designed to attract local and foreign investments in the mineral industry; however, the country's reputation for civil strife, corruption, fraud, political uncertainty, and poor infrastructure has apparently tempered international investor's interest (Ayittey, 1998; Finance Africa, 1997; Metal Bulletin, 1997; Rupert, 1998; Soji Akin, 1998, Nigeria business information—A "policeman" for the Nigerian economy, accessed June 11, 1998, at URL http://www.afbis.com/nigeria/neic.htm; Kingsley Kubeyinje, May 11, 1998, Nigeria establishes zones to boost the country's exports, Business Day, accessed May 12, 1998, at URL http://www.bday.co.za/98/0511/world/w17.htm; United Nations Development Programme, March 27, 1992, Fourth country programme for Nigeria, accessed July 1, 1998, at URL http://www.undp.org/undp/rba/country/cp/3087j.htm).

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Major Sources of Information

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Other Publications

Nigeria Ministry of Solid Minerals Development, 1996, Solid minerals development in Nigeria: Abuja, Nigeria, Ministry of Solid Minerals Development, 34 p.

———1997, Brief on Nigeria's mining potentials: Abuja, Nigeria, Ministry of Solid Minerals Development, 17 p.

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TABLE 1
NIGERIA : PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/		1994	1995	1996	1997	1998 e/
METALS						
Aluminum		--	--	--	2,500 e/	20,000
Columbium and tantalum concentrates: e/						
Gross weight		30	65 3/	57 3/	60 3/	70
Columbium content		17	26	23	23	30
Gold e/	grams	4,800 3/	5,000	6,000	6,000	10,000
Iron and steel: e/						
Iron ore, gross weight	thousand tons	400	168	100	50	--
Steel, crude	do.	105 3/	36	-- r/	--	2
Lead, metal, refined e/	do.	4	4	4	4	5
Tin:						
Mine output, cassiterite concentrate:						
Gross weight		278 e/	357	139	150	200
Sn content e/		185 3/	250	100	100	130
Metal, smelter		179	259	100	100	100
INDUSTRIAL MINERALS						
Barite 4/		--	--	--	4,000 e/	5,000 4/
Cement, hydraulic e/	thousand tons	2,600 3/	2,602 r/	2,545 r/	2,520 r/	2,700
Clays:						
Kaolin		105,000	11,950	102,078	100,000	110,000
Unspecified e/		104,000	100,000	100,000	100,000	100,000
Feldspar		1,000 e/	3,722	800	1,000	500
Gypsum e/		10,000	150,000 3/	383,250	300,000	300,000
Nitrogen: e/						
N content of ammonia	thousand tons	200	170	164	134	167
N content of urea	do.	200	100	114	41	105
Stone:						
Limestone	do.	2,700	3,128	2,095	2,000	2,000
Marble	do.	8	67	29	30	30
Shale e/	do.	32 3/	500	500	500	500
Topaz e/	kilograms	1,022 3/ 5/	1,000 e/	1,500	1,500	1,700
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous		130,000 e/	29,000	7,116	7,000	30,000
Gas, natural: e/						
Gross	million cubic meters	34,000	35,000	37,000	30,000 r/	24,000
Dry	do.	4,600	5,000	6,000	3,000 r/	3,000
Petroleum:						
Crude	thousand 42-gallon barrels	743,500	740,000	798,620	845,000 r/	788,000
Refinery products:						
Gasoline	do.	23,000	24,900	23,000 e/	13,000 e/	11,000
Jet fuel e/	do.	500	350	300	200	200
Kerosene	do.	12,000	14,200	10,000 e/	8,000 e/	6,000
Distillate fuel oil	do.	22,000	23,000	20,000 e/	10,000 e/	9,000
Residual fuel oil	do.	20,000	23,000	18,000 e/	12,000 e/	12,000
Unspecified	do.	13,500	21,200	8,000 e/	7,000 e/	6,800
Total	do.	91,000	106,650 r/	79,300 e/	50,200 e/	45,000

e/ Estimated. r/ Revised.
1/ Includes data available through July 23, 1999.
2/ In addition to the commodities listed, amethyst, aquamarine, barite, bitumen, diamond, emerald, garnet, granite, gypsum, lead, phosphate rock, sapphire, soda ash, talc, tourmaline, zinc, zircon, and a variety of crude construction materials (stone, sand and gravel) are produced, but information is inadequate to estimate output.
3/ Reported figure.
4/ Considerably more barite is produced but is considered to be commercially unusable.
5/ Exports.

TABLE 2
NIGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum		Aluminum Smelter Co. of Nigeria (Government, 70%; Ferrostaal AG of Germany, 20%; and Reynolds International of the United States, 10%)	Ikot Abasi	97 1/
Cement		West Africa Portland Cement Co. (Associated International Cement, 39.4%; Odu'a, 26.8%; public, 17.2%; Government, 16.6%)	Ewekoro	750
			Shagamu	600
Coal		Nigerian Coal Corp. (Government, 100%)	Enugu	150
Iron and steel:				
Iron ore		National Iron Ore Mining Co. (Government, 100%)	Itakpe	5,500
Iron		Delta Steel Co. Ltd. (Government, 100%)	Aladja	2,000
Steel		Ajaokuta Steel Co. Ltd. (Government, 100%)	Ajaokuta	1,350 2/
Do.		Delta Steel Co. Ltd. (Government, 100%)	Aladja	1,000
Steel products		do.	do.	300
Do.		Jos Steel Rolling Co. Ltd. (Government, 100%)	Jos	210 3/
Do.		Katsina Steel Rolling Co. Ltd. (Government, 100%)	Katsina	210
Do.		Oshogbo Steel Rolling Co. Ltd. (Government, 100%)	Oshogbo	210 3/
Natural gas, liquefied		Nigeria Liquified Natural Gas Ltd. (Nigerian National Petroleum Corp., 49%; Royal Dutch/Shell Group, 25.6%, Elf Nigeria Ltd., 15%; and Nigeria AGIP Oil Co. Ltd., 10.4%)	Finima, Bonny Island	5,780 2/
Nitrogen				
Ammonia, nitrogen content		National Fertilizer Co. of Nigeria Ltd. (Ministry of Finance, 63%; Nigerian National Petroleum Corp., 30%)	Onne	300
Urea, nitrogen content		do.	do.	255
Petroleum:				
Crude	million 42-gallon barrels	Joint venture of Shell National Petroleum Corp. (operator), 30%; Agip Energy & Production Nigeria Ltd., 5%; Elf Petroleum Nigeria Ltd., 10%; and Nigerian National Petroleum Corp., 55%	Niger Delta	365
Do.	do.	Joint venture of Mobil Producing Nigeria Unlimited (operator), 40% and Nigerian National Petroleum Corp., 60%	do.	200
Do.	do.	Joint venture of Chevron Nigeria Ltd. (operator), 40% and Nigerian National Petroleum Corp., 60%	do.	150
Do.	do.	Joint venture of Nigerian Agip Oil Co. Ltd. (operator), 20%, Phillips Oil Co. (Nigeria) Ltd., 20%, and Nigerian National Petroleum Corp., 60%	do.	70
Do.	do.	Joint venture of Elf Petroleum Nigeria Ltd. (operator), 40%; and Nigerian National Petroleum Corp., 60%	do.	50
Do.	do.	Joint venture of Texaco Overseas Nigeria Petroleum Co. Unlimited (operator), 20%; Chevron Oil Co. Nigeria Ltd., 20%; and Nigerian National Petroleum Corp., 60%	do.	25
Do.	do.	Joint venture of Express Petroleum and Gas Co. Ltd., (operator), Camac International (Nigeria) Ltd., and Conoco Energy Nigeria Ltd.	do.	7
Natural gas liquids	do.	Joint venture of Mobil Producing Nigeria Unlimited, 51%, and Nigerian National Petroleum Corp., 49%	Oso Field	15
Do.	do.	Joint venture of Chevron Nigeria Ltd., 40%, and Nigerian National Petroleum Corp., 60%	Escravos	3
Refinery products	do.	Port Harcourt Refining Co. Ltd. (Nigerian National Petroleum Corp., 100%)	Port Harcourt (new refinery)	55
Do.	do.	Warri Refinery and Petrochemicals Co. Ltd. (Nigerian National Petroleum Corp., 100%)	Warri	43
Do.	do.	Kaduna Refinery and Petrochemicals Co. Ltd. (Nigerian National Petroleum Corp., 100%)	Kaduna	38 4/
Refinery products	do.	Port Harcourt Refining Co. Ltd. (Nigerian National Petroleum Corp., 100%)	Port Harcourt (old refinery)	22 3/
Tin		Makeri Smelting Co. Ltd. (Government, 100%)	Jos	1

1/ One potline of the two-potline 193,000-metric-ton-per-year-capacity smelter was operating at yearend.
2/ Under construction.
3/ Idle during 1998.
4/ Undergoing rehabilitation, test runs only in 1998.