



2012 Minerals Yearbook

CHAD

THE MINERAL INDUSTRY OF CHAD

By Philip M. Mobbs

Hydrocarbons were a leading segment of Chad's economy in 2012. Exploration and production of hydrocarbons were covered by the conventions governing research, exploration, production, and transportation of hydrocarbons dated December 19, 1988, and May 10, 2004, and amendments, including law No. 028/PR/00 of December 5, 2000. The Petroleum Revenue Management Law (law No. 001/PR/99 of 1999) and amendments, such as law No. 002/PR/06 of 2006, defined the allocation of petroleum revenues. Mining of minerals, which was a negligible contributing sector of the national economy, was regulated by the Mining Code (law No. 011/PR/95 of 1995). Law No. 014/PR/98 of 1998 covered the general principles for the protection of the environment.

Petroleum produced in the Doba Basin was exported by way of the Chad-Cameroon export pipeline to an export terminal at Kribi, Cameroon. With the exception of crude oil produced from the oilfield on Permit H (Block H), which was moved by pipeline to the Djermaya refinery, new oilfield development projects were expected to export their production through the Chad-Cameroon pipeline. Most official nonfuel exports from landlocked Chad were trucked to seaports in Cameroon and Nigeria.

Production

Production of crude oil far exceeded the output of the country's limited suite of other mineral commodities, which included cement, clay, gold, lime, limestone, salt, sand, soda ash (natron), and stone. Estimates of Chad's mineral production are in table 1.

Structure of the Mineral Industry

The Ministère des Mines et de la Géologie and the Ministère du Pétrole et de l'Énergie monitored the activity of various sectors of the mineral industry. Société des Hydrocarbures du Tchad S.A. was the national oil company. Société Nationale de Cimenterie (SONACIM) was the national cement company. Small-scale domestic mining and quarrying operations produced most of the country's nonfuel minerals. International companies were involved in the exploration for and production of crude oil.

Commodity Review

Industrial Minerals

Cement.—Ciment du Tchad, which was a subsidiary of Government-owned SONACIM, operated the Baore cement plant. The 200,000-metric-ton-per-year-capacity plant opened in 2011 and increased its output to full capacity in 2012 (Xinhua News Agency, 2012).

Mineral Fuels

Petroleum.—Exxon Mobil Corp. of the United States reported that Esso Exploration and Production Chad, Inc. (Esso Chad) produced an average of 90,000 barrels per day (bbl/d) of crude oil in 2012 compared with an average of 115,500 bbl/d in 2011. To offset the decreased production that could be attributed to natural reservoir decline and increased water cut, Esso Chad drilled an additional 67 production wells in the Doba Basin oilfields in 2012 (Esso Exploration and Production Chad, Inc., 2012, p. 11–12, Exxon Mobil Corp., 2013a, p. 42; 2013b, p. 14).

CNPC International (Chad) Ltd., which was a subsidiary of China National Petroleum Corp., operated the Koudalwa and the Ronier oilfields on Block H. A 311-kilometer (km) pipeline connected the fields to the petroleum refinery at Djermaya, which was operated by a joint venture of CNPC International (Chad) Ltd. and Société des Hydrocarbures du Tchad S.A. The 7-million-barrel-per-year-capacity refinery, which was located about 30 km north of N'Djamena, began operations in mid-2011. Refinery operations temporarily were suspended several times in 2011 and again in January 2012 owing to a conflict concerning product pricing; CNPC preferred to sell refined petroleum products at a price sufficient to recover its investment in the refinery and other facilities in a timely manner, but the Government mandated that official fuel prices must be in the range of about \$1.50¹ to \$2.90 per gallon for gasoline and about \$4.00 per gallon for diesel fuel. The pricing dispute was resolved in early 2012 (China National Petroleum Corp., 2011; Reuters Africa, 2011; Bailong, 2012; Radio France Internationale, 2012; Notre Temps, 2013).

In 2011, Griffiths Energy (Chad) Ltd., Griffiths Energy (DOH) Ltd., and PetroChad (Mangara) Ltd., which were subsidiaries of Griffiths Energy International Inc. of Canada, signed production-sharing contracts with the Government that covered the Borogop, the DOB, the DOH, and the DOI Blocks. Griffiths obtained a 75% working interest in the Exclusive Exploitation Authorization for the DOI Block; Société des Hydrocarbures du Tchad retained a 25% working interest. On the DOI Block, PetroChad reentered and successfully tested the Badila–1 well in 2012 (which had been drilled and temporarily abandoned in 2002). In early 2013, PetroChad expected to complete the Badila–2 exploration well and to drill a third well on the Badila prospect. Griffiths planned to complete a 14,000-bbl/d-capacity blending and export facility, which would handle initial production from the Badila field, in early 2013. A 16-km pipeline, which would connect the Badila facility to the Chad-Cameroon export pipeline, was expected to be completed by the third quarter 2013. PetroChad also reentered and tested one of the three previously drilled wells in

¹Where necessary, values have been converted from Communauté Financière Africaine franc (XAF) to U.S. dollars (US\$) at the average rate of XAF1.00=US\$0.002.

the Mangara field on the DOB Block and planned to drill two development wells at Mangara in 2013. Production from the Mangara field was scheduled to begin in late 2013. Mangara field production facilities and a 95-km oil pipeline to the Badila export terminal were scheduled to be completed by mid-2013. In September, Glencore International plc of Switzerland agreed to acquire a 25% interest in the Badila and the Mangara Exclusive Exploitation Authorizations from Griffiths and a 33.3% working interest in the Exclusive Exploration Authorizations for the Borogop, the DOB, and the DOH Blocks (Griffiths Energy International Inc., 2012; 2013a, b).

Overseas Petroleum and Investment Corp. (OPIC), which was a subsidiary of CPC Corp., Taiwan, continued its oil exploration program. In 2012, OPIC drilled the Karin-1 well.

Other exploration activity in Chad included that of ERHC Energy Inc. of the United States, which began to reinterpret existing geologic and geophysical data for the BDS 2008, the Chari-Ouest III, and the Manga Blocks. ERHC proposed to drill an exploration well by 2017 or 2018. Simba Energy Inc. of Canada signed production-sharing contracts with the Government that covered the Chari Sud Block I and the southern half of Chari Sud Block II, which were located south of Esso Chad's and PetroChad's operations in southern Chad, and the Erdis Block III, which was located in northeastern Chad. Simba planned to complete geologic and geophysical studies of the concession areas by 2017 (ERHC Energy Inc., 2012, p. 11).

Outlook

In the past few years, the Government has resumed its encouragement of mineral exploration, especially for metals. Petroleum exploration and development is expected to continue.

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TABLE 1
CHAD: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2008	2009	2010	2011	2012
Cement	--	--	--	10,000	200,000
Petroleum:					
Crude ⁴ thousand 42-gallon barrels	46,500	43,600	44,500	44,000	37,000
Refined do.	--	--	--	1,000 ^r	4,000
Soda ash, natron	12,000 ^r	12,000 ^r	12,000 ^r	13,000 ^r	13,000

^rRevised. do. Ditto. -- Zero.

¹Estimated data are rounded to no more than three significant digits.

²Table includes data available through April 30, 2013.

³In addition to the commodities listed, other minerals and construction materials, such as aggregate, clay, gold, lime, limestone, salt, sand, and stone are produced, but information is inadequate to make reliable estimates of output.

⁴Includes reported crude shipments from the Doba Basin in Chad, which was metered on a floating storage-and-offloading vessel that was located offshore Kribi, Cameroon.

TABLE 2
CHAD: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Metric tons unless otherwise specified)

Commodity		Major operating companies and and major equity owners	Location of main facilities	Annual capacity
Cement		Ciment du Tchad [Société Nationale de Cimenterie (SONACIM)]	Baore plant, Bisi Keda, Mayo-Kebbi Ouest Department	200,000
Gold	kilograms	Artisanal placer operations	Mayo Dala Department	150
Petroleum:				
Crude	million 42-gallon barrels	Esso Exploration and Production Chad, Inc. (Esso Chad) (Exxon Mobil Corp., 40%; Petronas Carigali Overseas Sdh. Bhd., 35%; Chevron Overseas Petroleum Inc., 25%)	Bolobo, Kome, Maikeri, Miandoum, Moundouli, and Nya, and Timbre fields, Doba Basin	79
Do.	do.	CNPC International (Chad) Ltd. (a subsidiary of China National Petroleum Corp.)	Permit H, which includes the Koudalwa and the Ronier fields	22
Refined products	do.	CNPC International (Chad) Ltd. (a subsidiary of China National Petroleum Corp., 60%, and Société des Hydrocarbures du Tchad S.A., 40%)	Djermaya refinery, about 30 kilometers north of N'Djamena	7
Salt		Various local operators	Various locations	10,000
Soda ash		do.	Lake Chad, near Liwa	13,000

Do., do. Ditto.