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## Chad and Cameroon

*With the completion of the 650-mile Chad-Cameroon pipeline in July 2003, Chad has become a significant energy producer. The pipeline has also created new opportunities for Cameroon to revive its declining petroleum sector.*

*Note: Information contained in this report is the best available as of October 2004 and can change.*



### GENERAL BACKGROUND

Cameroon is located on the coast of West Africa's Gulf of Guinea, with landlocked Chad bordering it to the northeast. Although Chad encompasses more than twice the area of Cameroon, it is significantly less populous. Both countries gained independence from France in 1960. While Cameroon has experienced relative political stability since its independence, stability in Chad did not come until the 1990s, following decades of civil war. As a result, Chad is one of the poorest countries in the world, and tensions between the government and opposition groups persist. Both Chad and Cameroon

are members of the Central African Economic and Monetary Union (CEMAC), created in 1991 to improve economic and political cooperation in the region. Paul Biya, Cameroon's president since 1984, was reelected to a seven-year term in October 2004.

Cameroon's economy has exhibited strong growth since the 1990s. Real gross domestic product (GDP) grew 4.3% in 2003 and is forecast to grow 4.6% in 2004. Improvements in fiscal spending and efforts to address Cameroon's high external debt have improved the country's economic health in recent years. The government's 2004 budget shows a commitment to increasing non-oil revenues and improving the efficiency of government outlays. Because many companies have relocated due to turmoil in the Cote D'Ivoire, foreign investment in Cameroon has recently increased.

A 2000 World Bank debt relief package under the Heavily Indebted Poor Countries (HIPC) initiative and a 2002 loan from the International Monetary Fund (IMF) under its Poverty Reduction and Growth Facility program have increased Cameroon's social expenditures. Further economic growth may be undermined, however, as Cameroon has yet to meet conditions for reaching the completion point under the HIPC initiative.

Chad has been politically unstable since its independence and only recently achieved relative peace. In the past, Chad's economy has been dominated by the agricultural sector (38% of GDP in 2002). The country has experienced consistently high economic growth rates over the last five years, largely due to foreign investments surrounding development of the Doba Basin oil fields and the construction of the Chad-Cameroon pipeline. As a result, petroleum production is expected to become the major driver of economic growth within the country. In 2003, Chad's GDP grew 9.7%, while 2004 growth is forecast at 39.5%. Chadian per capita income is expected to double by 2005.

The IMF loaned Chad US\$46 million in 2000, while the World Bank and International Development Association (IDA) awarded Chad HIPC status and interim debt relief in 2001. Each organization has encouraged Chad to lessen poverty using objectives in the Poverty Reduction and Strategy Paper, maintain macroeconomic stability in accordance with IMF policy, and improve health education and national infrastructure.

In May 2001, President Idriss Deby was elected to a second term in Chad's second-ever presidential election. Parliament has passed constitutional amendments allowing him to run for a third term in 2006, but the proposed changes have been met with resistance from opposition parties. Despite the fact that President Deby has signed ceasefires with the National Resistance Army (ANR) and the Movement for Democracy and Justice in Chad (MDJT), the political climate remains unstable and heavy fighting continues in northern Chad.

## **OIL**

### **Reserves/Exploration/Production**

Cameroon is sub-Saharan Africa's sixth largest oil producer, with reserves estimated at 400 million barrels (*Oil and Gas Journal*, 1/1/04). Reserves are located offshore in the Rio del Rey Basin of the Niger Delta, offshore and onshore in the Douala/Kribi-Camp basins on Cameroon's western coast, and onshore in the Logone-Birni basin in the northern part of the country.

As a result of its maturing oil fields, crude oil production has fallen in recent years to 67,000 barrels per day (bbl/d) in 2003, down from 84,800 bbl/d in 2000. Production is expected to fall to 50,000-60,000 bbl/d by 2005. If no major oil fields are discovered, current major oil fields will be depleted by 2010. A lack of petroleum exploration in Cameroon during the 1980s and 1990s contributed to the current decline in oil production and is reflected by the exhaustion of maturing fields.

In an effort to encourage investment, the government revised its petroleum laws to include financial incentives and tax breaks on exploration in both 1999 and 2002. A May 2004 Trade Mission to the United Kingdom ended in the signing of a cooperation agreement between the Cameroon Chamber of Commerce and the Staffordshire Chamber of Commerce to increase British investment in Cameroon.

Renewed interest in oil investment has led to exploration in all three of Cameroon's major petroleum basins. Cameroon has committed to privatization of its state oil company, the National Hydrocarbons Company (SNH). SNH engages in exploration and production in conjunction with several Western oil companies. In December 2002, Tullow Oil and Addax Petroleum Cameroon, Ltd. signed a contract with SNH for exploration in the Ngosso area of the Rio del Rey Basin. Production based on an estimated 10 million barrels of oil found at Bao South in the Rio del Rey Basin began recently as well. ConocoPhillips also announced a new petroleum discovery in the Douala Basin in late 2002. Other exploration activity in the Douala Basin has been carried out by Australian-based Fusion Oil. Recent petroleum discoveries in Equatorial Guinea's nearby Rio Muni basin have increased confidence in the potential of the Logone Birni and Douala basins, two areas that until recently have remained largely unexplored. Because the Chad-Cameroon Pipeline is

located near Cameroon 's Logoni basin, the government is hopeful that its construction will facilitate future petroleum production in the area as well.

Cameroon and Nigeria have long been in dispute regarding territorial rights in the oil-rich Bakassi Peninsula . Although the International Court of Justice (ICJ) ruled in favor of Cameroon in October 2002, Nigeria rejected the ruling. All oil operations have been suspended in the 600-square mile area until the dispute is resolved. Cameroon and Nigeria have discussed alternative resolutions under UN-mediated conditions, including the possibility of sharing revenues from Bakassi oil production. The Joint Bakassi Peninsula Committee recommended transfer of the area's sovereignty to Cameroon by February 2005, but a scheduled handover in September 2004 was delayed by protests. UN officials hope that the handover will be complete by mid-November 2004.

Chad began pumping its first oil in July 2003 following the completion of the Chad-Cameroon pipeline. Chad 's proven oil reserves are situated mainly in the Doba basin, near its border with the Central African Republic . The Doba basin's three oil fields (Bolobo, Komé, and Miandoun) are estimated to contain reserves of 900 million barrels. A foreign consortium led by ExxonMobil (40% interest) is in charge of developing the Doba basin. Malaysia 's Petronas (35%) and ChevronTexaco (25%) joined the consortium in April 2000, after Shell and Total withdrew from the project. Current development focuses on the Bolobo field, as both the Komé and Miandoun fields are fully operational. In May 2004, the consortium indicated promising developments in its pursuit of additional oil resources in the area. In June 2004, members of the Doba consortium were awarded four new exploration permits in the Chari , Doseo, and Salamat basins, north of Lake Chad .

The two consortia controlling oil exploration and production-- ExxonMobil/ChevronTexaco/Petronas and Clivenden/Encana-- plan to relinquish several concessions to the Chadian government in the near future. The ExxonMobil-led consortium has already given up 20% of its area surrounding the Doba region. Small firms wishing to enter the Chadian oil sector are anxiously awaiting Encana's handover of 50% of its acreage by February 2005.

Chad also contains oil reserves (150 million bbl) in the Sedigi field in the Lake Chad Basin , which also includes the Kanem and Kumia fields. Development of the Sedigi field was planned in conjunction with proposals for a petroleum refinery and power plant in the capital, N'Djamena. Concorp International, the firm in charge of its development, constructed a conduit from Sedigi to N'Djamena of such poor quality that it is unable to transport oil. As a result, the development of Sedigi reserves to reduce the country's domestic petroleum costs has been delayed.

In an effort to attract new investors to its oil industry, Chad recently revised its Code for Oil Production to allow for production sharing agreements (PSA) between foreign companies and the Chadian government rather than requiring foreign investors to bear all exploration costs.

### **Chad-Cameroon Pipeline Project**

Chad 's petroleum production success depends on its ability to access international markets through the [Chad-Cameroon pipeline project](#). The pipeline runs from the Doba basin through southern Chad to the Cameroon border, where it continues through the Logone Birni Basin until it reaches the port of Kribi for export. Eighty-five percent of the pipeline is located in Cameroon . Export facilities in Kribi include an onshore-pressure reducing station and a subsea pipeline connected to a floating production storage and offloading vessel (FPSO). The Tchad Oil Transport Company (TOTCO) and the Cameroon Oil Transport Company (COTCO) have respective ownership of each country's portion of the pipeline. Pipeline capacity is estimated at 225,000 bbl/d; production exceeded 200,000 bbl/d at times in 2004.

The total cost of development and construction of the Chad-Cameroon pipeline and export facilities has been estimated at \$3.5 billion. The foreign consortium dedicated \$2.2 billion to the project (59.2% of total costs). Commercial banks and export credit agencies contributed \$600 million (16.1%), and capital markets financed \$400 million (10.7%). The International Finance Corporation (IFC) lent \$100 million to the foreign consortium and made another \$300 million available through commercial banks. The World Bank's approval of the project, a prerequisite for a \$93 million loan to fund each country's government stake in the project, was also essential in securing the support of outside countries. Soon after World Bank approval, the U.S. Export-Import Bank approved a \$300 million loan guarantee to finance exports to build the pipeline. Improvements to the infrastructures of both countries, especially Chad, were necessary for transport of construction materials. Repairs were made to existing roads and rails and a new bridge was built across the Mbéré River. In September 2004, the World Bank's Africa department submitted a proposal to its board for another \$10 million loan to prevent Chad's oil institutions from failing.

Construction of the Chad-Cameroon pipeline was completed in July 2003, and Chad's first petroleum exports departed for the international market in October 2003. In November 2003, the country received its first oil payment into an account at Citibank London for dispersal according to World Bank expenditure terms. Chad is expected to receive \$3.5 billion in revenues during the first ten years of exporting oil through the pipeline, increasing annual government revenues by more than 50%. Recent increases in worldwide oil prices will likely increase Chadian revenues. Cameroon will earn an estimated \$0.46 on every barrel of oil transported through the pipeline, more than \$500 million during the 25 to 30-year lifetime of the pipeline.

Chad is the first country to accept a conditional loan from the World Bank based on oil-revenue spending restrictions. The country's Petroleum Revenues Management Law (PRML), adopted in 1999 as a prerequisite for World Bank financing, outlines the planned allocation of new oil revenues. Eighty percent of Chad's oil revenues are to be allocated to health, education, rural development, environmental concerns, and other social services. The remaining 20% is divided between government expenditures (15%) and a supplement to the Doba region (5%). The government plans to use oil revenues to improve Chad's infrastructure, including construction of paved roads from N'Djamena to Abeche and Bisney to Bokoro.

Anxiety about Chad's commitment to the PRML increased following reports that the government purchased using a signing fee received from the foreign consortium in November 2000. Concerns that revenue from oil exports will fund military expenditures rather than needed social programs continue to date. Despite a negative report from its International Advisory Group (IAG) regarding civil society participation, the World Bank decided to continue its backing of the Chad-Cameroon project in September 2002. Although the PRML currently applies only to oil flowing through the Chad-Cameroon pipeline, in June 2004, Chad suggested applying it to nationwide petroleum developments.

Human rights organizations were strongly opposed to construction of the Chad-Cameroon pipeline. Because the pipeline was set to traverse areas of the Atlantic Littoral Forest inhabited by Cameroon's Bagyeli and Bakola ethnic groups, the consortium made numerous adjustments to the proposed route and offered compensations for lost land. Environmental groups expressed their concern with the project as well. The route chosen for the pipeline was considered the least environmentally disruptive, but concerns about pollution, deforestation, and loss of land remained. The project made environmental allowances, including the creation of two national parks to compensate for loss of woodland. The World Wildlife Fund issued a statement praising the completed pipeline, noting, "it is, environmentally speaking, one of the best planned pipelines in the world."



After Chadian President Deby accused the Chad-Cameroon Pipeline consortium of selling Chadian crude below the market price in October 2004, the government called for a change in the relationship with the ExxonMobil-led consortium.

### **Downstream**

Cameroon's downstream oil sector plays a significant role in its economy. In 2002, the country's petroleum consumption was estimated at 23,000 bbl/d. Cameroon's only refinery, operated by the Société Nationale de Raffinage (SONARA), is located in the port city of Limbe and produces up to 42,000 bbl/d. Because all of Cameroon's crude oil production is exported, crude oil used in the refinery is imported from Equatorial Guinea and Nigeria. Newly upgraded port facilities now allow tankers with capacity as large as 90,000 tons to access the refinery. Total, ExxonMobil, ChevronTexaco, and Shell market refined products within Cameroon. Petroleum products are distributed domestically by the Cameroon Petroleum Depot Company (SCDP). Cameroon's government holds a 66% interest in SONARA and a 51% interest in SCDP.

Chad's downstream oil sector is completely dependent on petroleum products imported from Nigeria and Cameroon. Although nearly all commercial energy requirements, including power generation, are fueled by petroleum, overall demand for the commodity is very low. In 2002, Chad consumed only 2,000 bbl/d of petroleum. Local companies control 35% of petroleum distribution and marketing in Chad, followed by Shell (25%), Exxon Mobil (20%) and Total (20%). Taiwan's Chinese Petroleum Corporation has expressed an interest in constructing an oil refinery in Chad to strengthen relations between the two countries.

### **NATURAL GAS**

Cameroon has estimated natural gas reserves of 3.9 trillion cubic feet (Tcf) (*Oil and Gas Journal*, 1/1/04) located in the Rio Del Rey, Douala and Kribi-Campo basins, but they have yet to be utilized. Cameroon's growing industrial sector and reoccurring energy shortages have encouraged the government to increase the use of gas for power generation in the future.

In March 2004, Syntroleum Corporation and Euroil, Ltd. announced plans to begin development of the 600 billion cubic feet (Bcf) Sanaga Sud natural gas field, located in the Douala/Kribi-Campo basin. Prior to the announcement, Syntroleum studied the feasibility of developing a gas-to-liquids (GTL) plant in Cameroon.

Chad is not known to possess any natural gas reserves. Due to its lack of reserves and infrastructure, Chad has no plans to develop a gas industry at the present time.

### **ELECTRICITY & RENEWABLE ENERGY**

Cameroon has installed electric generation capacity of 817 megawatts (MW), of which 88% is hydroelectric and 12% is thermal. The country's two main hydro stations, Edea and Song-Loulou, are located on the Sanaga River, while the smaller Lagdo station is located near Garoua. Successful development of Cameroon's estimated 500,000 MW of hydroelectric potential could make the country a net electricity exporter in the future. Presently, however, Cameroon's heavy reliance on hydropower leaves its electricity sector extremely vulnerable to droughts. Cameroon relies on approximately 30 aging diesel power stations as back-up facilities, the largest of which are located in Garoua (20.0 MW), Douala (15.4 MW), and Yaounde (10.8 MW).

AES-SONEL has managed generation and distribution of Cameroon's electricity has since 2001 when US-based AES Corporation purchased a majority stake in the state-run Société Nationale d'Electricité de Cameroun (SONEL). Although AES-SONEL maintains a customer base of

approximately 427,000, most of Cameroon's population does not have access to electricity. Those who have electricity are often subject to brownouts. AES-SONEL plans to invest US\$500 million between 2003 and 2009 to improve the Cameroonian network, starting with the completion of a new 85-MW, oil-fired plant at Limbe in August 2004. The company has plans for additional hydroelectric plants, as well as Cameroon's first natural gas-fired plant at Kribi, to be operational by 2007. In October 2003, AES-SONEL and the government adopted a new electricity tariff structure to reduce electricity costs for residential customers.

Cameroon is a member of the Energy Pool of Africa, which aspires to eventually connect the electricity grids of all members of the Central Africa Economic Community (CEEAC). AES-SONEL and France's Électricité de France (EDF) have conducted studies concerning a Chad-Cameroon interconnector project in the near future.

In March 2004, AES-SONEL announced plans to increase Cameroon's energy supply through the extension of the Logbaba thermal station in Douala and the conversion of the heavy oil thermal station in Oyomabong, Yaounde. Construction has yet to begin on a proposed dam over the Lom and Pangar rivers. The Cameroonian government, in conjunction with AES-SONEL, expects completion of the dam by 2008.

Less than 2% of Chad's population has access to electricity, and most of the population relies on wood for fuel requirements; use of wood for fuel contributes to deforestation. The majority of Chadians with access to electricity reside in N'Djamena, where the country's only major power station (22 MW) is located. Only nine percent of households in N'Djamena have electricity. The high cost of importing petroleum to fuel power generation makes Chad's electricity prices among the highest in the world. World Bank loans to develop the electricity sector have focused on increases in sustainable energy (\$5.3 million) and improvements in equipment renovation (\$55 million).

Generation and distribution of electricity in Chad is handled by the state-run Société Tchadienne D'eau et D'électricité (STEE). France's Veolia, who manages STEE, is expected to purchase a majority share when the company is privatized in accordance with World Bank reforms.

Attempts to utilize oil from the Sedigi field in electricity generation have been unsuccessful, as the Concorp International-constructed pipeline between Sedigi and N'Djamena is unusable. Both Libya and France have provided generators to increase Chadian electricity supply in the short-term, and Libya has offered to export electricity to the country. In February 2004, the French Development Agency (AFD) agreed to a €4 million to improve the Chadian energy sector.

*Sources for this report include: AllAfrica, Inc.; CIA World Factbook 2004; Economist Intelligence Unit ViewsWire; Global Insight; International Monetary Fund; International Oil Daily; Oil and Gas Journal; Petroleum Intelligence Weekly; Platt's Oilgram News; Reuters News Service; U.S. Energy Information Administration; World Bank; World Markets Analysis*

<b>Table 1. Demographic Data</b>					
<b>Country</b>	<b>Head of State</b>	<b>Independence</b>	<b>Size (Square Kilometers / Square Miles )</b>	<b>Population 2004E (Millions)</b>	<b>Major Cities</b>
Cameroon	<b>President:</b> Paul Biya (since 1984)	January 1, 1960	475,440 / 183,520	16.1	Yaounde (capital), Douala, Nkongsamba,

		(from France )			Maroua, Garoua
Chad	<b>President:</b> Idriss Deby (since 1990)	August 11, 1960 (from France )	1,284,000 / 495,000	9.5	N'Djamena (capital), Sarh, Moundou, Abeche

Source: Central Intelligence Agency World Factbook 2004

Country	Gross Domestic Product (GDP), 2003E (Billions of US \$)	Real GDP Growth Rate, 2003 Estimate	Real GDP Growth Rate, 2004 Projection	Per Capita GDP, 2003E (PPP)	Inflation Rate, 2003 Estimate	Merchandise Exports, 2003E (Billions of US \$)	Merchandise Imports, 2003E (Billions of US \$)	Total External Debt, 2003E (Billions of US \$)
Cameroon	\$27.8	4.3%	4.6%	\$1800	-0.4%	\$2.3	\$1.9	\$7.2
Chad	\$10.7	9.7%	39.5%	\$1200	-1.9%	\$0.3	\$1.1	\$1.3

Sources: Global Insight; Central Intelligence Agency World Factbook 2004

Country	Total Energy Consumption (Quadrillion Btu)	Coal	Petroleum	Natural Gas	Nuclear	Hydro-electric	Other Renewable Electric	Net Electricity Imports	Carbon Dioxide Emissions (Million metric tons of carbon dioxide)
Cameroon	0.082	0.03%	57.2%	0.0%	0.0%	42.8%	0.0%	0.0%	6.24
Chad	0.003	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.21

Source: Energy Information Administration

Note: Percentages may not add up to 100% due to rounding.

Country	Crude Oil Reserves, 1/1/04 (Million Barrels)	Natural Gas Reserves, 1/1/04 (Billion Cubic Feet)	Coal Reserves (Million Short Tons)	Petroleum Production, 2003 (Thousand Barrels Per Day)	Natural Gas Production, 2002 (Billion Cubic Feet)	Coal Production, 2001 (Million Short Tons)	Electric Generating Capacity, 2002 (Million Kilowatts)	Crude Oil Refining Capacity, 1/1/04 (Thousand Barrels Per Day)
Cameroon	400	3.9	0	67	0	0	0.81	42
Chad	900	0	0	36	0	0	0.03	0

Source: Energy Information Administration

Note: Petroleum production figures for Chad (2003E) are only evocative of July 2003 to December 2003, as Chadian oil did not come online until that date.

## LINKS

For more information on Chad or Cameroon , see these other sources on the EIA web site:

[EIA - Country Information on Chad](#)

[EIA - Country Information on Cameroon](#)

Links to other U.S. government sites:

[CIA World Factbook - Chad](#)

[Library of Congress Country Studies - Chad](#)

[U.S. State Department Consular Information Sheet - Chad](#)

[U.S. State Department: Human Rights Report - Chad](#)

[CIA World Factbook - Cameroon](#)

[U.S. State Department Background Notes - Cameroon](#)

[U.S. State Department Consular Information Sheet - Cameroon](#)

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[Esso Exploration and Production Chad, Inc.](#)

[World Bank Chad-Cameroon Project](#)

[World Bank Country Brief: Chad](#)

[World Bank Country Brief: Cameroon](#)

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