

Expanding Petroleum Production in Africa

Richard Knight

Richard Knight, Consultant
521 West 122nd Street, Suite 61, New York, NY 10027
Tel: (212) 663-5989 Fax: (212) 280-2442
E-mail: rknight1@juno.com Web: www.richardknight.com

“Deepwater exploration and development initiatives are generally expected to be sustained worldwide, with offshore West Africa emerging as a major future source of production.”

International Energy Outlook 2001

Oil and natural gas provide a significant resource that could be used to promote African development. Currently twelve African countries produce and are net exporters of oil.¹ Approximately 40% of Africa’s population lives in these countries. Yet Africa remains the poorest and most economically marginalized continent.

Both the developed and developing world depend on oil and natural gas for electricity, heating and transportation. Oil provides 40% of the world’s energy consumption – more than any other source. The industrial countries accounted for 58% of world consumption of petroleum in 2000 with the U.S. consuming over 25%, compared to 3.4% for Africa. Despite concern about global warming and the adoption of the Kyoto Protocol that seeks to reduce production of greenhouse gasses, oil production and consumption is projected to increase significantly.²

Africa’s Economy

Africa, with 13% of the world’s population, provides just 2% of world exports. The three largest oil producers, Algeria, Libya and Nigeria, provide 30% of Africa’s exports.³ Africa’s exports consist largely of crude oil, other petroleum products (including natural gas) and minerals. But the majority of people in Africa earn their livelihood through agriculture, primarily with low-input, traditional farming practices.

Africa oil and gas exporting countries have become extremely dependent on the revenues generated. In Algeria oil and natural gas products account for 97% of exports, 30% of GDP and 60% of government revenues, in Nigeria 95% of exports, 20% of GDP and 65% of government revenue. As a result these countries are greatly impacted by the price of oil.

Crude Oil

Africa produced 7, 814,000 barrels per day (bbl/d) in 2001, accounting for 10.3% of worldwide production. The continent has 7.3% of proven world oil reserves. The three African members of the Organization of Petroleum Exporting Countries (OPEC) - Algeria, Nigeria, and Libya - accounted for 66% of the continent’s oil production. As members of OPEC, production quotas theoretically restrict their oil output.

Natural Gas

Africa is also an important source of natural gas producing 12 billion cubic feet per day (bcf/d) in 2001, 5% of world commercial production. Africa holds 7.4% of proven reserves. The majority of proven reserves are in Algeria and Nigeria but some 20 countries have proven reserves.⁴ Algeria accounted for 63% of Africa’s product in 2001, followed by Egypt (17%), Nigeria (11%) and Libya (4%).⁵

Africa Oil Reserves and Production

Country	Proved	Production
	Reserves End 2001	2001
	Thousand million barrels	Thousand barrels daily
Algeria	9.2	1,563
Angola	5.4	731
Cameroon	0.4	80
Rep. Of Congo (Brazzaville)	1.5	271
Egypt	2.9	758
Equatorial Guinea	*	181
Gabon	2.5	301
Libya	29.5	1,425
Nigeria	24.0	2,148
Tunisia	0.3	73
Other Africa	0.9	284
Total Africa	76.7	7,814
Percent of World Total	7.3%	10.3%

* Included in "Other Africa"

Source: *Statistical Review of World Energy 2002* (BP plc, 2002)

U.S. Direct Investment in Africa - 2001

Country	Millions of Dollars		
	Total	Petroleum Industry	Percent Petroleum
Algeria	2,484	2,392	94%
Angola	1,498	1,473	98%
Cameroon	D	D	
Chad	301	D	
Congo (Brazzaville)	155	155	100.00%
Congo (Kinshasa)	76	60	79%
Cote d'Ivoire	141	92	65%
Egypt	3,068	3,068	100%
Equatorial Guinea	1,684	1,684	100%
Gabon	285	D	
Nigeria	1,467	1,801	123%
South Africa	2,950	67	2%
Other	1,763	920	52%
Total	15,872	11,649	73%

U.S. Crude Oil Imports - 2001

Country	Thousand Barrels	Percent Of U.S Imports
Algeria	3,966	0.12%
Angola	117,254	3.44%
Cameroon	1,255	0.04%
Congo (Brazzaville)	14,430	0.42%
Congo (Kinshasa)	345	0.01%
Cote d'Ivoire	1,517	0.04%
Egypt	0	0.0%
Equatorial Guinea	5,465	0.16%
Gabon	51,065	1.50%
Nigeria	307,137	9.02%
Africa Total	507,963	14.92%
World Total	3,404,894	100.00%

D = Suppressed. In Nigeria total investment is less than petroleum. In 2000, Cameroon: U.S. investment was \$266 million (\$265 in petroleum). In 2000, Gabon: 99% of investment was in petroleum, a figure likely to have increased.
Source: U.S. Department of Commerce

Source: Energy Information Administration

U.S. Involvement in African Oil

Petroleum dominates U.S. economic ties with Africa. The U.S. receives approximately 15% by volume (18% by value) of its crude oil imports from Africa. Energy related products, primarily crude oil, was \$14.3 billion and accounted for 67.8% of all imports from Sub-Saharan Africa in 2001. As a result, U.S. imports from Africa are dominated by Nigeria (27%), Angola (14%), Algeria (11%) and Gabon (8%) with South Africa (18%) being the only non-oil exporting country of significance.

Investment in the petroleum industry represents 73% of all U.S. direct investment in Africa. Ironically, one country in Africa where the U.S. has significant direct investment but little in the petroleum industry is South Africa, where Mobil and other U.S. oil companies were forced to pull out as a result of the U.S. anti-apartheid movement. The U.S. currently has oil import and investment sanctions on Libya⁶ and Sudan.

Expanding Production

Africa, especially the West African countries along the Gulf of Guinea, has the fastest rate of discovery of new reserves in the world.⁷ Despite quotas, Africa's OPEC members are seeking to boost production. As *Business Week* noted recently, the governments of Nigeria and Algeria, both members of OPEC, have struck agreements with Western companies that will lead to an additional 1.5 million barrels in capacity. This new capacity represents a 70% increase over their current quotas and both countries are pushing OPEC to increase their quotas.⁸ Nigeria is seeking to double proven reserves and production by 2010. Libya, with the lifting of UN sanctions, can now buy oil equipment and hopes to increase production from its current 1.4 million bbl/d, which is far less than the 3.3 million bbl/d it produced in 1970.

Africa's non-OPEC producers are also increasing production. Angola's production has increased 600% since 1980 and is expected to be more than 1 million bbl/d in 2003. Production in Sudan averaged 227,500 bbl/d in 2002; it could surpass 300,000 bbl/d in 2003 and reach 450,000 bbl/d by 2005. Sudan's estimated current proven reserves of crude oil are 563 million barrels, more than twice the 2001 estimate.⁹ Chad is scheduled to start producing in 2004 with production anticipated at 225,000 bbl/d during the early years of the projected 25-30 years of production. Oil has been found off the coast of Sao Tome and Principe but exploitation has not yet begun. Sao Tome signed an agreement in 2002 with Nigeria to develop oil in the Gulf of Guinea where the two have overlapping territorial claims. Under this agreement Nigeria gets 60% of oil produced, Sao Tome 40%. Sao Tome appears to be unhappy with the agreement and recently it was announced that Angola will lend its know-how in negotiations with Nigeria. Angola will also lend its assistance in the auctioning off of Sao Tome's exploration blocks scheduled for later this year.

A number of other countries are exploring for oil. Morocco has granted a number of exploration contracts including two for off the coast of Western Sahara to Kerr-McGee and TotalFinaElf. Polisario rejected these contracts as it sees Morocco's occupation of Western Sahara as illegal. UN legal council Hans Corell issued an opinion that noted that Morocco did not have sovereignty over the territory and was not the administrative power. In his opinion he said that the contracts were not illegal but that any further exploration and exploitation would be if it did correspond to interests and wishes of the people of Western Sahara. The SARD, the Polisario formed government of Western Sahara, a member of the African Union, subsequently entered into its own agreement for the area with Fusion Oil.

Africa is also increasing its production of natural gas. Production increased by 10.7% in 2000 over 1999 including an 81.4% increase by Nigeria and a 23.1% increase by Egypt. Production in 2001 was about the same as the previous year. Nigeria's production has increased from 0.6 billion bcf/d in 1999 to 1.3 bcf/d in 2001. There are a number of projects planned that will increase

African natural gas production and consumption. The West African Gas Pipeline will supply Nigerian gas to Benin, Togo and Ghana. Nigeria has built a \$3.8 billion liquefied natural gas (LNG) facility on Bonny Island which it is expanding. In Angola, ChevronTaxaco is planning a \$2 billion LNG plant that will convert natural gas from offshore oil fields to LNG for export. Egypt's natural gas production has doubled in the past few years to about 3 bcf/d and several LNG projects are being developed. Pipelines are being planned from gas fields in Mozambique and Namibia to South Africa. Sasol Ltd., the South African company that produces synthetic fuel and chemicals, is in the process of converting its feedstock from coal to gas.

Equatorial Guinea – An Explosion of Growth

Mobil discovered major oil deposits in Equatorial Guinea in 1996. As a result Equatorial Guinea, with a population of just 470,000, has suddenly made it into the big time. In 2001 Equatorial Guinea produced 181,000 bb/d of oil, a one-year increase of 60%. The value of crude oil imports increased from \$28,302,000 in 1997 to \$361,784,000 in 2001. Currently there are no good estimates of total reserves. U.S. direct investment was \$1.7 billion at the end of 2001. The U.S. imported 5,465,000 barrels (14,970 bbl/d) in 2001. In the first six months of 2002 oil imports jumped to 8,390,000 barrels (46,350 bbl/d). In dollar terms, total U.S. imports increased from \$66.64 million in 1998 to \$445.44 million in 2001, almost exclusively in oil.

Equatorial Guinea Oil Production						
Thousands of barrels per day						
1995	1996	1997	1998	1999	2000	2001
7	17	60	83	100	113	181

The largest producer is ExxonMobil, producing 145,000 bbl/d in 2001 from the Zafiro field in which it has a 71% interest. Significant expansion is in the process including a \$695 million in the Zafiro Southern Expansion Area with production scheduled to start in 2003. Nigeria had challenged Equatorial Guinea's claim to sole ownership of the Zafiro field but in September 2000 the two countries signed an agreement on their maritime border in which Nigeria gave up any claim.

Marathon Oil Corporation announced an expansion in December 2002 that will increase gross liquefied petroleum gas (LPG) production to 16,000 bbl/d by October 2004 from 2,700 bbl/d today. The project will also increase gross condensate production by 8,000 bbl/d. The US imported \$65,806,000 of liquefied petroleum gasses in 2001, up from zero in 1997.

It remains an open question if this new wealth will benefit the majority of people. The country's real gross domestic product has been growing at an amazing rate: 65% in 2001, 16.9% in 2000 and 71.2% in 1997. In 1991 agriculture accounted for 58.4% of GDP, in 2001 this fell to just 8.5%. In 1991 Equatorial Guinea had exports of just \$98 million, mostly agricultural goods (cocoa and timber). In 2001 it had exports of \$2,186 million, mostly oil. Per capita GNP was \$1,170 in 1999, up from \$370 in 1994 and is still rising. But as the World Bank has noted "important issues arise associated with the impact and distribution of oil wealth." The majority of the population lives by subsistence agriculture. "While oil discoveries and rapid expansion of oil exports have caused a striking improvement in economic indicators, there has been no impact on the country's dismal social indicators," concludes the World Bank. The government's long-term economic record is poor. President Teodoro Obiang Nguema Mbasogo came to power in a coup in 1979. He was elected in 1996 but those elections were, according to the US Department of State, "marred by extensive fraud and intimidation." He was elected again in December 2002 by over 99% after opposition candidates withdrew claiming irregularities.

Conclusion – The Contradiction of Oil

Petroleum dominates Africa's economic relations with the world. Africa remains the poorest and least developed continent. Some countries have been producing oil and gas for decades, but a number of new countries are just beginning to produce and they will begin to receive significant oil revenues

in the next few years. Nigeria, where 70.2% of the population lives on less than \$1 per day, has a GNP per capita of \$260, less than net oil-importers Ghana (\$390) and Kenya (\$360), and a far cry from South Africa (\$3,170). Western industrialized countries have clearly benefited from African oil, as have the oil companies (and their shareholders) and privileged elites in African countries. The question remains to what extent ordinary Africans can and will benefit, and if African countries will successfully use their oil wealth for economic diversification and development. The track record so far is not good.

The author is a New York based consultant on human rights, economic justice and corporate responsibility. He formerly worked as a research associate for the American Committee on Africa and The Africa Fund. Web: www.richardknight.com. E-mail at rknight1@juno.com.

¹ The African countries that produce and are net exporters of oil are Algeria, Angola, Cameroon, Congo (Brazzaville), Egypt, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan and Tunisia. Congo (Kinshasa) is a small net exporter of some 2,400 bpd. Cote d'Ivoire exports oil, including to the U.S., but is a net importer. Ghana and Morocco produce small amounts of oil but need to import to meet most of their needs. South Africa produces 30,000 bpd plus 184,000 bpd in synthetic oil production but needs to import over one half of its needs. Sao Tome and Principe and Nigeria have agreed to jointly develop oil in a disputed offshore region. Chad is projected to begin exports in 2004. The official name for Congo (Brazzaville) is Republic of Congo. The official name of Congo (Kinshasa), formerly Zaire, is Democratic Republic of the Congo.

² The U.S. Department of Energy projects that world oil consumption will grow between 1996 and 2020 at a rate of 1.8% a year with a growth rate of 1.2% for the U.S. and 2.8% for Africa. Natural gas consumption is projected to grow even faster. See *International Energy Outlook 2001* and Michael T. Klare, *Resource Wars - The New Landscape of Global Conflict* (New York: Metropolitan Books, 2001).

³ United Nations Conference on Trade and Development, *Handbook of Statistics*, (New York and Geneva, United Nations, 2000). Figures are for 1999.

⁴ Algeria, Angola, Benin, Cameroon, Cote d'Ivoire, Congo (Brazzaville), Congo (Kinshasa), Egypt, Equatorial Guinea, Ethiopia, Gabon, Ghana, Mozambique, Morocco, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania. Sources: BP p.l.c., EIA/USDOC, World Bank.

⁵ Production figure does not include gas flared or recycled. BP p.l.c., *Statistical Review of World Energy 2002*

⁶ The UN sanctions on Libya have been lifted but the U.S. sanctions remain. The sanctions were first imposed in 1982 when President Reagan ended U.S. imports of oil from Libya. At the time the U.S. was importing 150,000 barrels per day with a value of \$2 billion a year. Also banned was the export to Libya of sensitive oil and gas technology. A total ban on trade was imposed in January 1986. Exxon and Mobil pulled out of Libya in 1982; five other U.S. oil companies remained until President Reagan forced them to pull out in 1986. U.S. companies hope to return and have, with the U.S. government's permission, met with Libyan officials and visited assets abandoned when sanctions were imposed. See "U.S. Will End Libya Oil Buying, Technology Sales," *Wall Street Journal*, March 11, 1982 and Bureau of Public Affairs, U.S. Department of State, *Background Notes: Libya*, July 1994.

⁷ According to the U.S. Corporate Council on Africa cited in "United States Eyes West African Crude," *Business Day*, December 10, 2002.

⁸ "Is OPEC About to Lose Control of the Spigot?," *Business Week*, January 20, 2003

⁹ The figures here for Sudan are from the Energy Information Administration and vary some from those of BP cited above in part because of date.