

COUNTRY ANALYSIS BRIEFS

Cote d'Ivoire

Last Updated: May 2007

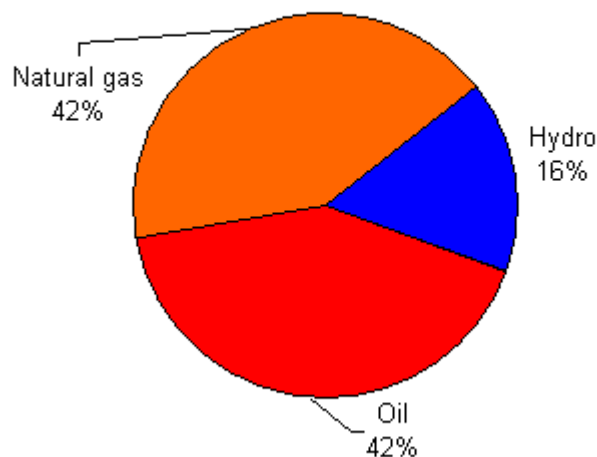
Background

Côte d'Ivoire relies on oil and natural gas to meet a large share of energy demand.

Côte d'Ivoire relies on oil, natural gas and hydropower to satisfy energy consumption demand. In addition to satisfying domestic demand, Côte d'Ivoire's oil exports bolster overall economic activity in the country, and represents 28 percent of the country's total export revenue. According to the World Bank, oil exports have surpassed cocoa exports, which traditionally have been the mainstay of Cote d'Ivoire's economy. Côte d'Ivoire's oil production, which is primarily located offshore, should increase slightly in 2007 and 2008.



**Total Energy Consumption in Cote d'Ivoire (Ivory Coast),
by Type (2004)**

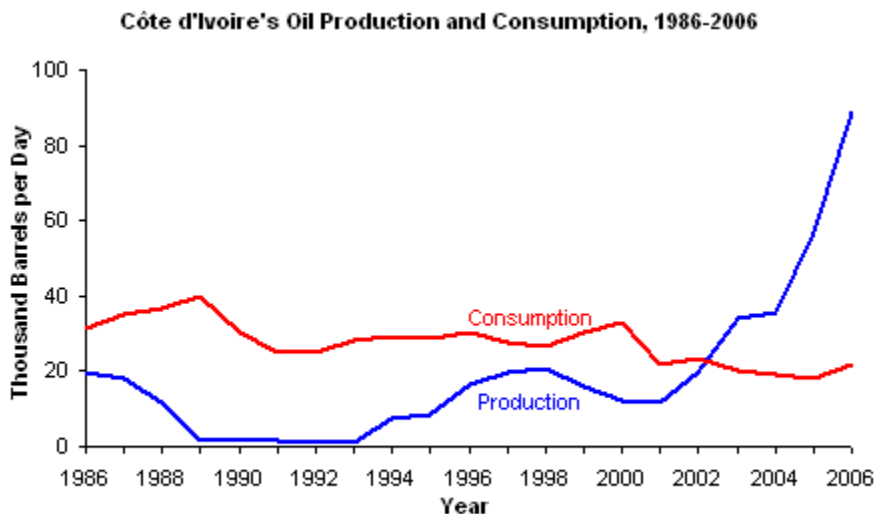


Source: EIA International Energy Annual 2004

The majority of Côte d'Ivoire's oil wells are located offshore.

Oil Production

Côte d'Ivoire's oil production increased from 56,000 barrels per day (bbl/d) in 2005 to 89,000 bbl/d in 2006. New fields coming online, as well as field enhancement work allowed for the increasing oil production. Production is forecast to increase slightly over the next 2-year period, with the possibility of reaching 110,000 bbl/d by 2008. According to estimates by *Oil and Gas Journal* (OGJ), Côte d'Ivoire had 100 million barrels of proven crude oil reserves as of January 2007. The vast majority of reserves are located offshore in shallow marine areas and in deep offshore waters.



Source: *International Energy Annual 2004*,
Short Term Energy Outlook April 2007

Exports

In 2006, Côte d'Ivoire consumed 22,000 bbl/d and exported approximately 67,000 bbl/d of crude oil. According to official trade statistics as reported to the *Global Trade Atlas*, Western Europe imported over 50 percent of the country's crude exports, with the majority going to Germany (16,000 bbl/d) and France (10,000 bbl/d). The United States imported 5,000 bbl/d of crude oil from Côte d'Ivoire in 2006. According to FACTS Global Energy, China imported 3,000 bbl/d. Côte d'Ivoire's crude export blends are primarily medium and sweet with an API of 33°.

Field Development and Exploration

In August 2005, Canadian Natural Resources (CNR) brought its Baobab oil field onstream, with initial production averaging 48,000 bbl/d. According to *IHS Energy GEPS Reports*, Baobab achieved peak production of 52,000 bbl/d during the first quarter of 2006. However, due to sand control problems, Baobab was producing only 25,000 bbl/d during the later half of 2006. The offshore field is located in Block CI-40. CNR is operator of the block with a 57.6 percent interest and is joined with partners Svenska Petroleum Exploration (27.4 percent), and Petroci (15 percent). CNR also operators the Espoir field, which is located in Block CI-26. In 2006, the Espoir field produced an average of 31,000 bbl/d of oil. The field has a life expectancy of 20 to 25 years, with production expected to peak at 35,000 bbl/d of oil. The West Espoir field began producing in mid-2006 and is expected to peak at around 13,000 bbl/d of oil in 2007. CNR holds 58.7 percent interest in Block CI-26 and is joined with partners Tullow Oil (21.3 percent) and Petrosi (20 percent).

Devon Energy Corporation operates the Lion and Panthere fields on Block CI-11, which, according to *IHS Energy GEPS Reports*, netted the company 3,600 barrels of oil equivalent per day (boe/d) in 2006. Devon's partners on Block CI-11 include Petroci, Pluspetrol of Argentina, and International Finance Corporation. In addition to Block CI-11, Devon holds interests (ranging from 35 percent to 80 percent) in several other blocks in Côte d'Ivoire. As of April 2007, Devon was considering selling its Côte d'Ivoire interests.

Refining and Downstream

According to *OGJ*, Côte d'Ivoire's one refinery, the SIR refinery, has refining capacity of 65,200 bbl/d and is located in Abidjan. An oil pipeline connects the SIR refinery to the Lion and Panther fields. The state currently owns 47.3 percent of SIR, and expects to retain a 10 percent interest if privatization occurs in the future. Burkina Faso owns a 5.39 percent stake in SIR, and Total, Shell, ExxonMobil and Chevron own the remainder. A petroleum products depot, adjacent to SIR, stores petroleum products for domestic use as well as for export. The depot is owned by the Société de Gestion des Stocks Pétroliers de Côte d'Ivoire (Gestoci) and supplies products to Mali, Burkina Faso, Niger and Chad. Gestoci also operates fuel depots in Bouake and Yamoussoukro.

Sector Organization

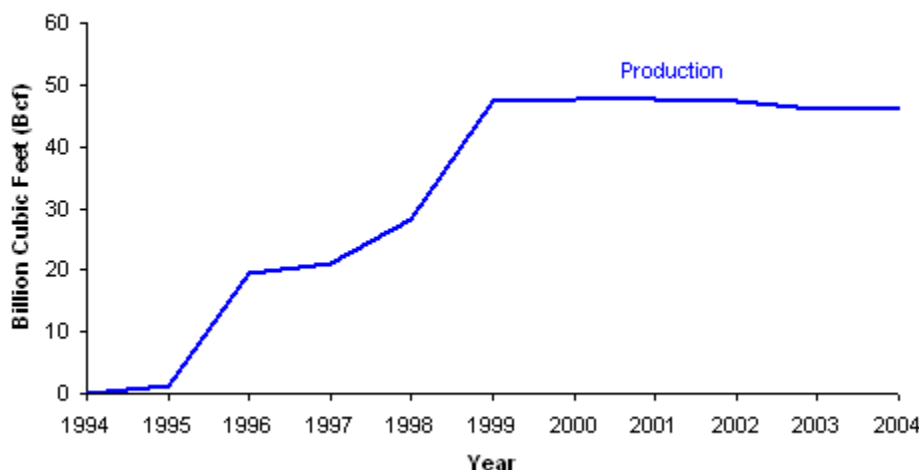
In 1975, Côte d'Ivoire established the Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (Petroci) to oversee the country's oil operations. In 1998, the government re-structured Petroci by dividing it into four entities, which include: Petroci Holding (responsible for portfolio management of the oil sector), Petroci Exploration-Production (responsible for upstream hydrocarbon activities), Petroci-Gaz (responsible for the natural gas sector), and Petroci Industries-Services (responsible for all other related services). Foreign companies involved in Côte d'Ivoire's oil sector include CNR, Dana Petroleum (U.K.), Devon Energy (U.S.), Oil India, Pluspetrol (Argentina), Sinopec (China), and Tullow Oil.

Natural Gas

Côte d'Ivoire primarily uses natural gas as feedstock for electricity production.

According to 2007 estimates by *OGJ*, Côte d'Ivoire had one trillion cubic feet (Tcf) of proven natural gas reserves. Although exploration teams first discovered natural gas in Côte d'Ivoire in the 1980s, it was not until the mid-1990s that companies began to develop the resource. In 2004, Côte d'Ivoire produced 46 billion cubic feet (Bcf) of natural gas, all for domestic consumption. Côte d'Ivoire primarily uses its natural gas in the generation of electricity.

Côte d'Ivoire's Natural Gas Production, 1994-2004



Source: *International Energy Annual, 2004*

Côte d'Ivoire's largest producing natural gas field is the Foxtrot field in offshore Block CI-27. According to IHS Energy, Foxtrot contains estimated natural gas reserves in place of 950 Bcf, and the field produced around 30 Bcf in 2005. The Block is operated by Foxtrot International (24 percent interest) and partners include Petroci (40 percent), SECI; a member of the Bouygues group of France (24 percent), and Energie de Côte d'Ivoire (Enerci); a joint venture of Gaz de France and EdF Group (12 percent).

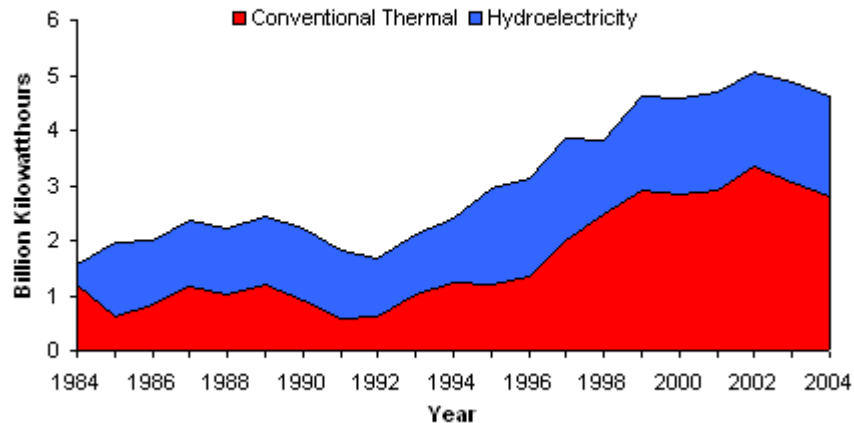
CNR operates the Espoir field, which is located offshore in Block CI-26. CNR estimates Espoir's proven natural gas reserves to be 150 billion cubic feet (Bcf). CNR announced that development of the West Espoir field began in mid-2005, with first production online in July 2006. CNR holds 58.7 percent interest in the block and is joined with partners Tullow Oil (21.3 percent) and Petroci (20 percent).

Electricity

The majority of Côte d'Ivoire's electricity is generated through natural gas-powered stations.

As of January 1, 2004, Côte d'Ivoire had installed electric generation capacity of 919 megawatts (MW). In 2004, Côte d'Ivoire generated 4.6 billion kilowatthours (Bkwh) of electricity, while consuming 3.2 Bkwh. The majority of electricity is generated through conventional thermal stations (60 percent), with hydroelectricity comprising the remainder (40 percent). The 288-MW Azito power station, brought online in 1999, is located in Abidjan's suburbs and produces more than a third of the country's power. The phased construction of a third turbine in Azito has been delayed pending a rise in domestic and regional demand for electricity through the West African Power Pool (WAPP). Côte d'Ivoire's main hydroelectric plants include Ayame I and II, Kossou, Taabo, Buyo and Grah.

Côte d'Ivoire's Electricity Generation, by Source, 1984-2004



Source: *International Energy Annual 2004*

Profile

Country Overview

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|---------------------------|---|
| President | Laurent Gbagbo (since October 26th, 2000) |
| Location | Western Africa, bordering the North Atlantic Ocean, between Ghana and Liberia |
| Independence | 7 August 1960 (from France) |
| Population (2007E) | 17,298,040 |

Economic Overview

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|---|---|
| Minister of Economy and Finance | Charles Diby Koffi |
| Currency/Exchange Rate (5/23/07) | 1 Communauté Financière Africaine franc (XOF) = \$0.0021 USD |
| Inflation Rate (2006E) | 3.2% |
| Gross Domestic Product (2006E) | \$28.5 billion |
| Real GDP Growth Rate (2006E) | 1.2% |
| Exports (2006E) | \$7.83 billion |
| Exports - Commodities | cocoa, coffee, timber, petroleum, cotton, bananas, pineapples, palm oil, fish |
| Exports - Partners (2005E) | France 18.3%, US 14.1%, Netherlands 11%, Nigeria 8%, Panama 4.4% |
| Imports (2005E) | \$5.55 billion |
| Imports - Commodities | fuel, capital equipment, foodstuffs |
| Imports - Partners (2005E) | France 27.7%, Nigeria 24.5%, Singapore 6.6% |
| Current Account Balance (2006E): | \$460 million |

Energy Overview

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|---|--|
| Minister of Mines and Energy | Léon Emmanuel Monnet |
| Proven Oil Reserves (January 1, 2007E) | 100 million barrels |
| Oil Production (2006E) | 89 thousand barrels per day |
| Oil Consumption (2006E) | 22 thousand barrels per day |
| Crude Oil Refining Capacity (2006E) | 65.2 thousand barrels per day |
| Proven Natural Gas Reserves (January 1, 2007E) | 1 trillion cubic feet |
| Natural Gas Production (2004E) | 46 billion cubic feet |
| Natural Gas Consumption (2004E) | 46 billion cubic feet |
| Electricity Installed Capacity (2004E) | 919 megawatts |
| Electricity Production (2004E) | 4.6 billion kilowatt hours |
| Electricity Consumption (2004E) | 3.2 billion kilowatt hours |
| Total Energy Consumption (2004E) | 0.1 quadrillion Btus*, of which Natural Gas (42%), Oil (42%), Hydroelectricity (16%), Coal (0%), Nuclear (0%), Other Renewables (0%) |
| Total Per Capita Energy Consumption (2004E) | 6.5 million Btus |
| Energy Intensity (2004E) | 3,043.1 Btu per \$2000-PPP** |

Environmental Overview

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|--|---|
| Energy-Related Carbon Dioxide Emissions (2004E) | 5.8 million metric tons, of which Oil (56%), Natural Gas (44%), Coal (0%) |
| Per-Capita, Energy-Related Carbon Dioxide Emissions (2004E) | 0.34 metric tons |
| Carbon Dioxide Intensity (2004E) | 0.16 Metric tons per thousand \$2000-PPP** |
| Environmental Issues | deforestation (most of the country's forests - once the largest in West Africa - have been heavily logged); water pollution from sewage and industrial and agricultural effluents |
| Major Environmental Agreements | party to: Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands signed, but not ratified: none of the selected agreements |

Oil and Gas Industry

| | |
|------------------------------------|--|
| Organization | Petrolières de la Côte d'Ivoire (Petroci) has four operation subsidiaries (Petroci-holding, Petroci-Exploration/Production, Petroci-Gaz, and Petroci-industries/Services) |
| Foreign Company Involvement | Addax, Canadian Natural Resources, Dana Petroleum, Energy Africa, ENI-Agip, ExxonMobil, Gentry, Gulf Canada, Mondoil, Devon Energy, PanCanadian Petroleum, Pluspetrol, Shell, Santa Fe Snyder, Stratic Energy, Total, Tullow, Vanco Energy |
| Major Oil Fields | Espoir, Baobab, Lion, Panther |
| Major Natural Gas Fields | Foxtrot, Kudu, Panther |
| Major Refineries | Société Ivoirienne de Raffinage (SIR) – Abidjan, Société Multinationale des Bitumes (SMB) – Abidjan |

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

U.S. Government

[CIA World Factbook](#)

[Library of Congress - Côte d'Ivoire Country Study](#)

[U.S. State Department Background Notes on Côte d'Ivoire](#)

[U.S. State Department's Consular Information Sheet on Côte d'Ivoire](#)

[U.S. Embassy in Côte d'Ivoire](#)

General Information

[Abidjan Post](#)

[allAfrica News - Côte d'Ivoire](#)

[Columbia University - Côte d'Ivoire information page](#)

[Economic Community of West African States \(ECOWAS\)](#)

[IMF - Côte d'Ivoire Information page](#)

[Mbendi - Côte d'Ivoire Profile](#)

[University of Pennsylvania - Côte d'Ivoire Information page](#)

[Washington Post Côte d'Ivoire page](#)

[World Bank - Côte d'Ivoire Information page](#)

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CIA World Factbook

Dow Jones

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International Monetary Fund

International Oil Daily

Mbendi Information Services

New York Times

Oil & Gas Journal

Petroleum Economist

Petroleum Intelligence Weekly

Platts Oilgram News

Reuters News Wire

UN Integrated Regional Information Networks (IRIN)

U.S. Energy Information Administration

U.S. Department of State

Washington Post

Weekly Petroleum Argus

World Bank

World Markets Online

XE.com

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