



Home > Country Analysis Briefs > Horn of Africa Regional Country Analysis Brief



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[Djibouti](#) | [Eritrea](#) | [Ethiopia](#) | [Somalia](#) | [Links](#)

Horn of Africa

The following provides a brief overview of the energy sectors of the Horn of Africa region -- Djibouti, Eritrea, Ethiopia and Somalia.

Note: Information contained in this report is the best available as of August 2003 and is subject to change.



DJIBOUTI

The French Territory of the Afars and the Issas became Djibouti in 1977. In November 1991, the mainly Afar-supported Front for the Restoration of Unity and Democracy (FRUD) began fighting the Issa-dominated government. Sporadic attacks continued in 1997 and 2000. On May 12, 2001, President Ismail Omar Guelleh presided over the signing of the final peace accord officially ending the decade-long civil war. France maintains one of its largest military bases outside France in Djibouti with some 2,800 troops as well as warships, aircraft and armored vehicles. In addition to French troops, Djibouti has become a launching point for the US war on terrorism in the Middle East. United States troops have been stationed and passing through the country since late-2002. In exchange for use of territory, the United States has offered monetary assistance to

help Djibouti improve its counterterrorism operations.

Djibouti's main economic asset is its strategic location. The city of Djibouti, capital and home to nearly two-thirds of the country's population, is a major transshipment port and bunkering facility. Good transportation infrastructure with the country and links to neighboring African states earns Djibouti much-needed transit taxes and harbor fees. Trade through Djibouti increased significantly during the Ethiopian-Eritrean war when Djibouti became the only significant port for landlocked Ethiopia.

Djibouti is working to significantly expand the capacity of its ports by building a new oil jetty to

accommodate oil products, LPG, edible oils, and bitumen on vessels up to 120,000 deadweight tons (DWT) and have the capacity to handle 100,000 cubic meters of petroleum products. This first phase of port expansion will begin in September 2003, with operations beginning a year later. The second phase of the project adds a \$300 million, 2,000 meter long, mega container port. The new additions to Djibouti's ports, supported by Emirates National Oil and Dubai Ports International, will enable the port of Djibouti to meet growing cargo requirements over the next 20 years.

Djibouti's real gross domestic product (GDP) is expected to grow 2.8% in 2003, following estimated growth of 2.4% in 2002, and 1.9% in 2001. Strong growth has been fueled by the transportation and communication sectors as well as the trade and tourism sectors, which together make up more than 40% of GDP. An unemployment rate of 40% to 50% continues to be a major problem for Djibouti's economy. In December 2002, the International Monetary Fund (IMF) approved the third disbursement of funds (\$6 million) from a Poverty Reduction and Growth Facility (PRGF) signed with Djibouti in 1999.

OIL

Although there is currently no upstream (exploration or production) oil activity in Djibouti, the government has tried to generate interest in offshore oil exploration without success. The downstream oil sector, however, is an important aspect of Djibouti's economy, given the role the capital city plays as a significant regional bunkering and refueling facility. Three companies-- ExxonMobil, Shell and Total-- handle refueling at Djibouti's port. The companies, along with ChevronTexaco, also distribute and market petroleum products in the country. Storage capacity at the port facility is 1.26 million barrels (200,000 cubic meters). The Dubai Ports Authority (DPA) was awarded a 20-year contract in June 2000 to manage the port. DPA hopes to increase Djibouti's handling capacity from 125,000 metric tons to 300,000 metric tons per year and to make it the leading transshipment point on the African continent.

ELECTRICITY

Djibouti currently has installed electricity generating capacity of 85 megawatts (MW), all of which is thermal (oil-fired). In January 2001, U.S.-based Geothermal Development Associates (GDA) announced that it had completed a feasibility study on the development of a 30-MW geothermal power plant in Djibouti. The study, which commenced in August 2000, established the commercial viability of the proposed generating facility. The \$115 million plant, to be located in the Lake Assal region west of the capital, will be constructed on the build own operate (BOO) financing scheme. The Global Environmental Facility (GEF), a joint initiative of the World Bank and the United Nations (UN), has approved a \$280,000 financing package to pay for contract negotiations required for the project. To date, however, these funds have not been released. At the same time, however, Electricite de Djibouti, the national electric company, has begun to remove aging diesel-fired generating units. To continue to provide power to rural residents, the government, with the help of a grant from a number of Arab financial institutions, is installing solar and wind capacity. The primary goal of the project is to replace old diesel powered rural water pumps with new ones powered by renewable resources, but excess energy will be used for electrification.

ERITREA

In 1952, a UN resolution federating the former Italian colony of Eritrea with Ethiopia went into effect. In 1962, Emperor Haile Selassie unilaterally dissolved the Eritrean parliament and annexed the country. The Eritrean fight for independence continued even after



Haile Selassie was ousted in a coup in 1974. A 30-year struggle for independence ended in 1991, with Eritrean rebels defeating the governmental forces led by Mengistu Haile Miriam. On April 23-25, 1993, Eritreans voted overwhelmingly for independence from Ethiopia in a UN-monitored free and fair referendum. The Eritrean authorities declared Eritrea an independent state on April 27, 1993. The National Assembly was elected in national, freely contested election and then chose former liberation movement leader Isaias Afwerki as President.

When Eritrea and Ethiopia separated amicably in 1993, several border issues remained unresolved. Fighting broke out between the two countries in May 1998 and continued until June 2000 when both sides accepted an Organization of African Unity (OAU) peace proposal. The formal treaty ending the war was signed on December 12, 2000 and an independent entity, the Eritrea Ethiopia Boundary Commission (EEBC) was established to determine the new border. The EEBC released its report on April 13, 2002, but Ethiopia is contesting some of the commission's decisions.

Growth of the Eritrean economy was hampered by the war. Eritrea's real GDP growth in the two years prior to the conflict averaged 7.4%. Real GDP growth fell to 4.0% in 1998, 0.8% in 1999 and -8.2% in 2000. With the cessation of hostilities, real GDP growth of 9.7% was observed in 2001, and growth of 8.8% in 2002. Continued growth of 7.1% is expected in 2003. Inflation is an ongoing problem, it was 24% in 2002, but it is expected to decline to less than 15% in 2003. Multilateral and bilateral donors have pledged nearly \$132 million towards the demobilization of 200,000 Eritrean soldiers and the social and economic recovery of the country. Donor development funding is seen as crucial in the improvement of the country's economy.

OIL

Hydrocarbon exploration, primarily offshore in the Red Sea, began in the 1960's when Eritrea was still federated with Ethiopia. In 1995, Eritrea signed a production sharing contract (PSC) with U.S.-based Anadarko Petroleum (Anadarko) for the offshore Zula Block. Anadarko signed a second PSC for the offshore Edd Block, located south of the Zula Block, in September 1997. Anadarko announced, in December 1997, that it had reached an agreement with ENI/Agip (Agip) to swap interests in exploration acreage. Anadarko received a 25% interest in a Tunisian block operated by Agip, and Agip received a 30% share in the 6.7-million acre Zula Block and 30% interest in the Edd Block. Burlington Resources, a U.S.-based independent, later joined the consortium by acquiring a 20% interest in both acreages. Anadarko's first two exploration wells, both drilled on the Zula Block, were unsuccessful. In January 1999, a third dry well, Edd-1 on the Edd Block, was drilled. Citing the disappointing exploration results, Anadarko and its partners ceased exploration activities and relinquished their rights to the offshore blocks.

A more recent attempt also did not meet with success. In May 2001, U.S.-firm CMS Energy signed an exploration agreement for a 14,000-square kilometer block in northeastern Eritrea but the company has released its claim as it put its entire oil exploration and production unit up for sale in May 2002.

Bab el-Mandeb (Mandab)

The [Bab el-Mandeb](#) is a narrow waterway situated between Eritrea, Djibouti and Yemen that connects the Red Sea with the Gulf of Aden and the Arabian Sea. In 2000, it was estimated that around 3.2-3.3 million barrels per day (bbl/d) of oil flowed through the Bab el-Mandeb. Disruptions or closure of the Bab el-Mandeb could keep tankers from the Persian Gulf from reaching the [Suez Canal/Sumed Pipeline](#) complex, diverting them around the southern tip of Africa (the Cape of Good Hope). This would add greatly to transit time and cost, and effectively tie up spare tanker capacity. The Bab el-Mandeb could be bypassed (for northbound oil traffic) by utilizing the East-West oil

pipeline, which traverses [Saudi Arabia](#) and has a capacity of about 4.8 million bbl/d. However, southbound oil traffic would still be blocked. In addition, closure of the Bab el-Mandeb would effectively block non-oil shipping from using the Suez Canal, except for limited trade within the Red Sea region.

In December 1995 and again in August 1996, Eritrean and Yemeni forces clashed over control of the Hanish Islands, located just north of the Bab el-Mandeb. In October 1996, the two countries signed an agreement over the islands. The two sides agreed to put their case before an international court of arbitration ([Permanent Court of Arbitration-PCA](#)). The court will then issue two rulings; one on who has sovereignty over the disputed area, and one on the demarcation of the two sides' maritime boundary. In October 1998, the PCA ruled that the Hanish Islands are subject to the territorial sovereignty of Yemen. In December of 1999, the PCA issued its ruling on the [maritime boundary](#).

Downstream and Refining

Eritrea has crude refining capacity of 18,000 bbl/d, but the refinery located in the Red Sea port of Assab has been shut down since 1997 due to the high operating and maintenance costs. Ethiopia and Eritrea, joint operators of the facility, decided to close the Assab refinery in August 1997 and import refined petroleum products to meet domestic needs.

Eritrea's petroleum consumption was estimated at 6,000 bbl/d in 2001. Marketing and distribution of petroleum products is performed by ExxonMobil, Shell and Total. In June 2000, Shell purchased the downstream operations of Agip in several African countries including Eritrea and Ethiopia. The Eritrean assets included service stations, two petroleum product depots and an LPG (liquefied petroleum gas) filling station.

In August 2000, Sudan's National Petroleum Company announced plans to lay pipelines to supply Eritrea and Ethiopia with petroleum products from its Khartoum refinery. Eritrea has not yet benefited from Sudanese oil and relations between the two countries soured in April 2003 when Sudan accused Eritrea of supporting Sudanese rebels in the eastern part of Sudan. Although Eritrea denies the charges, future trade relationships are unlikely under the current climate.

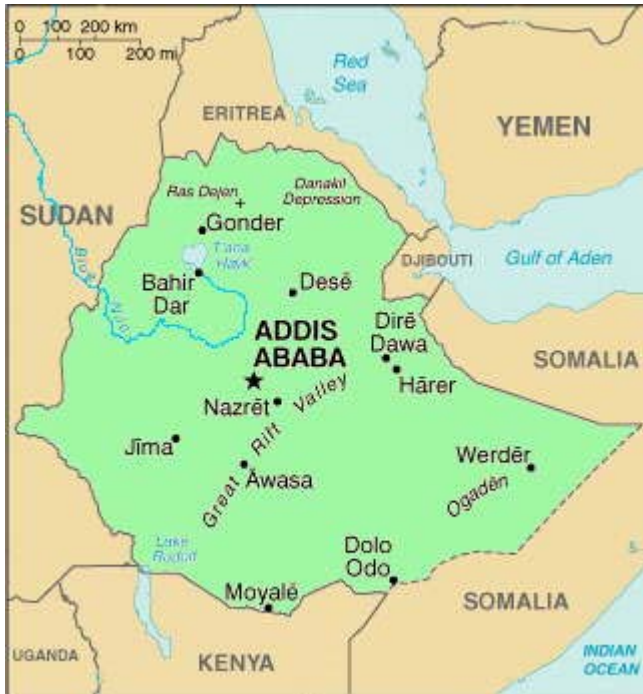
ELECTRICITY

Eritrea has approximately 60 MW of diesel-fired generating capacity. The Eritrean Electricity Authority (EEA) handles generation, transmission and distribution of electricity. In 1997, South Korean firms Daewoo and Hanjung signed an agreement to build a heavy oil-fired plant in at Hirgigo, just outside of Massawa. The plant, nearly completed, was damaged in a bombing raid by Ethiopia in 2000. In 2001, Eritrea signed loan agreements with the United Arab Emirates and Saudi Arabia for the facility's repair. The 88 MW facility came online in March 2003, but many industry experts fear that the new capacity could overload Eritrea's dated grid system. Both the European Development Fund and the World Bank have considered projects to update the transmission lines, but firm contracts have not been negotiated.

Electricity is only available in Eritrea's larger cities and towns, leaving about 80% of the Eritrean population without access to electricity. Some smaller villages have community diesel generators which can provide small amounts of electricity to households. Photovoltaic (PV) electricity generation is being used in special applications throughout the country. Twenty-six rural health centers are each supplied with 2-kilowatt (kW) solar photovoltaic power systems for refrigeration, lighting, operating theaters, fans, and laboratory equipment. Additionally, the majority of the 140 rural clinics are equipped with solar powered vaccine refrigerators. Approximately 3% (about 60 villages) of Eritrea's villages have been supplied with PV systems (0.8 to 1.2kW) to power water

pumps to supply drinking water. Each system serves a minimum of 300 households. Over 70 rural schools (out of 700) have been provided with PV systems for lighting and power.

ETHIOPIA



Ethiopia is the oldest independent country in Africa. Unique among African countries, Ethiopia maintained its freedom from colonial rule, except during the Italian occupation of 1936-41. In 1974, a military junta, the Derg, deposed Emperor Haile Selassie, who had ruled since 1930, and established a socialist state. The Derg was toppled by a coalition of rebel forces, the Ethiopian People's Revolutionary Democratic Front (EPRDF), in 1991. A constitution was adopted in 1994 and Ethiopia's first multiparty elections were held in 1995. A two-year border war with Eritrea ended when a peace treaty was signed in December 2000. Disagreement on the location of the border between the two countries is ongoing, despite the final ruling of a commission charged with identifying the border.

Ethiopia's economy is primarily agrarian, with the agricultural sector accounting for 45% of GDP and 80% of the workforce. Coffee, Ethiopia's primary export crop, accounted for 58% of total exports in 1999, and has averaged two-thirds of all export earnings over the last 20 years. Other important agricultural exports include qat (khat), a mild stimulant from the leaves of the *Catha Edulis* shrub, pulses, oilseeds, live animals and hides. Ethiopia's real GDP growth was 5.4% in 2000 and increased to 7.7% in 2001. Growth in 2002 slowed to 4.3% as a severe drought decimated agricultural production. Growth forecasts for 2003 suggest that the economy will expand by 4.0%

Although continued donor support is seen as the crucial element in Ethiopia's economic reform, both the IMF and World Bank suspended new lending to Ethiopia during the border war with Eritrea. The suspension was lifted after the signing of the peace accord in December 2000. The World Bank approved a \$400 million loan to finance emergency recovery, military demobilization and reintegration projects. In July 2001, the IMF approved a \$112 million PGRF to support Ethiopia's economic program. In November 2001, the IMF and World Bank announced that Ethiopia was eligible for a \$1.9 billion debt relief package under the Heavily Indebted Poor Countries (HIPC) Initiative, becoming the 24th country to qualify for debt relief under the HIPC's enhanced framework. The savings in debt service resulting from the HIPC are substantial, amounting to about \$96 million per year on average until 2021. The resources made available by debt relief provided under the HIPC will be allocated to key anti-poverty programs. Poverty-targeted expenditures are projected to increase steadily, from 10.9% of GDP in 2001, to 14.7% in 2002, and 15.5% in 2003.

OIL AND NATURAL GAS

Ethiopia's current proven hydrocarbon reserves are minimal, but the potential to increase reserves to commercial viability is seen as promising. The country's geology is similar to that of its oil-producing neighbors to the east (on the Arabian peninsula) and the west (Sudan). In April 2001, the Ministry of Mines and Energy reported that hydrocarbon seeps had been discovered in several

regions. The government plans to conduct feasibility studies to establish the extent and viability of the deposits.

Hydrocarbon exploration in Ethiopia's Ogaden Basin began over 80 years ago (Standard Oil in 1920). The Ethiopian government formed the Calub Gas Share Company (CGSC) to develop the fields. In 1994, the World Bank approved a \$74 million loan to develop the Ogaden Basin fields. The Ethiopian Privatization Agency (EPA) put the CGSC up for privatization in 1998, but the EPA, citing weak bids, withdrew the tender. In December 1999, Houston-based Sidor announced that it had signed a \$1.4 billion joint-venture deal to develop the Calub natural gas project. Under the terms of the agreement, Gasoil Ethiopia Project (GEP), the joint-venture firm, will acquire 95% of the CGSC under the Ethiopian government's privatization law. Currently, 5% of the CGSC is held by local private investors. The Ethiopian government will hold a 20% interest in GEP with Sidor holding the remaining share. GEP plans to construct a 375-mile, 24-inch pipeline to transmit natural gas to the town of Awash, which is approximately 75 miles east of the capital Addis Ababa. At Awash, plans call for construction of a cryogenic liquids plant and two gas-to-liquids process systems with capacity to process 200 million cubic feet per day (Mmcf/d) of natural gas. The end products will be synthetic fuels and petrochemical feedstocks plus steam that will generate electricity and help produce 20,000 bbl/d of potable water. A planned refinery will produce products including diesel, gasoline, kerosene and jet fuels. The gas-to-liquids system will also produce some 500 tons of ammonia per day as feedstock for a urea plant to be constructed. Although construction on the pipeline was scheduled to begin in the summer of 2002, gas development in Ogaden has not yet begun.

In June 2003, the Ethiopian government signed an oil exploration deal with Petronas for 5,800 square mile tract in Gambela, in the far western part of the country. The region is closely related the Sudan oil fields. Petronas has committed to investing in regional infrastructure, employing local staff, improving health services, and developing the skills of the ministry of Mines. Petronas is also interested in natural gas exploration in Ogaden, but no official plans have yet been made.

Downstream

Ethiopia's petroleum consumption was estimated at 23,000 bbl/d in 2001. With the closure of the Assab refinery in 1997, Ethiopia is totally reliant on imports to meet its petroleum requirements. Some petroleum imports are received at the port of Djibouti, and shipped via rail and tanker truck to Ethiopia. With the recent development of oil in Sudan, however, Ethiopia has begun importing oil which, under COMESA, is not subject to tariffs. Oil imports from Sudan began in January 2003 transported by tanker trucks along a new road between the two countries. Since the trade began, however, oil shipments, which are expected to meet 85% of Ethiopia's gasoline requirements, have halted twice. Nevertheless, the two countries have agreed to upgrade the road along this important transit corridor to increase commerce.

Marketing and distribution of petroleum products is performed by ExxonMobil, Shell and Total. In June 2000, Shell purchased the downstream operations of Agip in several African countries including Ethiopia. The Ethiopian assets included over 100 service stations, two depots and four LPG filling plants.

ELECTRICITY

Ethiopia has approximately 529 MW of installed generating capacity. The vast majority of Ethiopia's existing capacity (85%) is hydroelectric. The Ethiopian Electric Power Corporation (EPEPCO), the state-owned firm responsible for electricity generation, plans to construct several new generating facilities to provide electricity to Ethiopia. Currently, less than half of Ethiopia's towns have access to electricity though EPEPCO electrified more than eighty towns between 2001 and

2003. Since most of Ethiopia's electricity is generated from hydroelectric dams, the country's power system is vulnerable to extended droughts. Ethiopia recently endured more than six months of power cuts due to low water levels in dams around the country. Initially blackouts were scheduled once a week, but as the drought wore on, customers lost power for 15 hours two days a week, a situation that strained the resources of many businesses in urban centers.

EEPCO is rapidly expanding their generating capacity. The 73-MW Tis Abay 2 facility, located on the Blue Nile (Abay) came online in 2001. U.S.-based Harza Engineering (now MWH Global) is overseeing the construction of an additional 34-MW unit at the Finchaa hydroelectric facility in western Ethiopia. EEPCO also plans to open the new 180-MW Gilgel Gibe hydroelectric facility in October 2003. Gilgel Gibe, located on the Omo River in southwestern Ethiopia, will increase the country's power capacity to 700-MW. EEPCO has begun development of Ethiopia's largest generating facility at Tekeze. The 300-MW hydroelectric facility will be located in northern Ethiopia and will cost about \$350 million.

Construction of Ethiopia's first Independent Power Project (IPP) was set to commence in early 2002. The Gojeb IPP will consist of a 150-MW hydroelectric facility in western Ethiopia. The project is being developed by Mohammed International Development Research Organization & Companies (Midroc). When completed, Midroc will sell the output from Gojeb to EEPCO. Agreements on additional IPP projects were signed in June 2001. The largest facility will be the 162-MW Genale hydroelectric facility located on the border between the Oromia Region and the Southern Peoples Nationalities Regional State. The plants will be built under the Build-Operate-Transfer (BOT) system. ENERCO will operate the facilities for 30 years, which would be renewable for another 30 years.

In April 2001, Ethiopia signed agreements to export electricity to neighboring Djibouti. Negotiations are ongoing and exports are expected to begin in 2004, following the interconnection of the countries' electric grids.

SOMALIA

The Somali Republic gained independence on July 1, 1960. Somalia was formed by the union of British Somaliland and Italian Somaliland. A socialist state was established following a coup led by Major General Muhammad Siad Barre. Rebel forces ousted the Barre regime in 1991, but turmoil, factional fighting, and anarchy ensued. The Somali National Movement (SNM) gained control of the north, while in the capital of Mogadishu and most of southern Somalia the United Somali Congress achieved control.

In 1992, responding to the political chaos and humanitarian disaster in Somalia, the United States and other nations launched peacekeeping operations to create an environment in which assistance could be delivered to the Somali people. By March 1993, the potential for mass starvation in



Somalia had been overcome, but the security situation remained fragile. On October 3, 1993 U.S. troops received significant casualties (19 dead over 80 others wounded) in a battle with Somali gunmen. When the United States (in 1994) and the UN withdrew (in 1995) their forces from Somalia, after suffering significant casualties, order still had not been restored.

A Transitional National Government (TNG) was created in October 2000 with the three-year mandate of creating a permanent national Somali government. Although they declared their independence, the TNG does not recognize Somaliland and Puntland as independent republics but has been unable to reunite the country. Peace talks began in late-2002 and are ongoing. Somaliland has refused to participate in these talks saying that while it would welcome peace in former Italian Somalia, Somaliland is an independent country awaiting international recognition.

Somalia's economy, one of the world's least developed, has been further hampered by the country's ongoing internal strife. Reliable economic data is scarce, and the TNG cannot manage the national economy while it struggles to gain control over the country. Livestock production (cattle, goats & sheep) is the mainstay and largest foreign exchange earner of the Somali economy. An outbreak of Rift Valley Fever (RVF) in southern Saudi Arabia and Yemen (the first reported outside Africa) in 2000 led six Gulf States - Saudi Arabia, Bahrain, Oman, Qatar, Yemen and the United Arab Emirates - to ban livestock imports from the Horn of Africa. Middle Eastern countries are considering lifting the ban on livestock in early 2004. Another significant portion of the Somali economy, foreign remittances, have fallen significantly following the US government's closure of the Al-Barakat transfer company, which has been accused of transferring funds on behalf of Osama bin Laden and the Al-Qaida terrorist network. Remittances from abroad are estimated to be \$200-\$500 million annually.

While the TNG is in the process of reestablishing Somalia's Central Bank. Somalia is unable to receive IMF, and other multilateral aid due to the lack of institutions/financial infrastructure in place.

OIL AND NATURAL GAS

Somalia has no proven oil reserves, and only 200 billion cubic feet of proven natural gas reserves. Somalia currently has no hydrocarbon production. Oil seeps were first identified by Italian and British geologists during the colonial era. Exploration activities were focused in northern Somalia, and several foreign firms, including Agip, Amoco, Chevron, Conoco and Phillips, held concessions in the area. The firms all declared force majeure following the collapse of the central government.

Exploration activity remains hindered by the internal security situation, and the multiple sovereignty issues. In February 2001 Total signed an exploration agreement with the TNG. The twelve-month agreement grants Total the rights to explore in the Indian Ocean off southern Somalia. Hassan Farah, TNG's Minister for Water and Mineral Resources, stated that the government would provide security during the exploration activities. Several factional leaders have denounced the agreement, and stated that the TNG did not have the authority to sanction the agreement, nor the power to guarantee the safety and security of the exploration operations.

In May 2001, Somaliland signed an agreement with U.K.-registered Rovagold and two Chinese firms, CPEC and CPC, for the right to explore for oil. Dubai-based Zarara Energy also signed an exploration agreement with Somaliland. The Somaliland government has said it will honor, until they expire, the existing contracts foreign companies signed with the Barre regime that are in their territory. None of the firms have resumed operations in Somaliland.

Somalia's petroleum consumption was an estimated 4,000 bbl/d in 2001. The organization officially responsible for all petroleum product distribution and retailing is the cooperative Iskash. The state-owned Iraqsoma Refinery Corporation operated a 10,000-bbl/d refinery outside of Mogadishu, but it has been inoperative since 1991. Total is involved in the downstream sector in Somaliland. It rehabilitated and manages the operations of the oil terminal in Berbera, Somaliland's primary port. Total also supplies fuel to airports located in Berbera and Somaliland's capital of Hargeisa.

ELECTRICITY

Somalia currently has installed electricity generating capacity of 70 megawatts (MW), all of which is diesel-fired. Ente Nazionale Energia Elettrica (ENEE) is the entity responsible for generation, transmission and distribution of electricity in Somalia. Electrical infrastructure has been damaged and destroyed, and the ongoing strife has hindered the development of new electric resources. A planned hydroelectric facility on the Juba River has been delayed due to the continued fighting. Studies have indicated that the Horn of Africa, especially Somalia, is a prime location for harnessing wind for electricity generation. Plans for wind generation have been proposed, but were derailed following the ouster of the Barre regime.

In October 2001, WorldWater Corp., a U.S.-based water management and solar engineering company, signed agreements with the TNG to become the master consultant and contractor for all water and energy programs in Somalia. Under the three-year agreement WorldWater would develop, manage and oversee contracting for the country's water resources and incorporate renewable energy projects such as solar power into Somalia's infrastructure. This includes locating and managing groundwater sources in municipal and rural areas, delivering water for drinking and for irrigation using the WorldWater's solar pumping systems and generating independent electricity with its solar power systems.

Country	Gross Domestic Product (GDP), 2001E (Billions of US \$ -- PPP)	Real GDP Growth Rate, 2002 Estimate	Real GDP Growth Rate, 2003 Projection	Per Capita GDP, 2001E (PPP)	Population 2002E (Millions)
Djibouti	\$0.6	2.4%	2.8%	\$1,400	0.65
Eritrea	\$3.2	8.8%	7.1%	\$740	4.50
Ethiopia	\$46.0	4.3%	4.0%	\$700	67.2
Somalia	\$4.1	NA	NA	\$550	7.8
Regional Total/Average	\$53.9	4.2%	3.9%	\$670	80.1

Sources: Economist Intelligence Unit; Central Intelligence Agency World Factbook 2003; International Monetary Fund. PPP=Purchasing Power Parity. NA=Not Available.

Country	Total Energy Consumption (Quadrillion Btu)	Petroleum	Natural Gas	Coal	Nuclear	Hydroelectric	Other Renewable Electric	Net Electricity Imports	Carbon Dioxide Emissions (Million metric tons of carbon)

Djibouti	0.025	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.504
Eritrea	0.012	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.242
Ethiopia	0.066	73.1%	0.0%	0.0%	0.0%	26.3%	0.0%	0.0%	0.945
Somalia	0.008	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.163
Regional Total/Average	0.111	84%	0.0%	0.0%	0.0%	15.6%	0.0%	0.0%	1.854

Source: Energy Information Administration

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

Country	Crude Oil Reserves, 1/1/03 (Million Barrels)	Natural Gas Reserves, 1/1/03 (Billion Cubic Feet)	Coal Reserves (Million Short Tons)	Petroleum Production, 2001 (Thousand Barrels Per Day)	Natural Gas Production, 2001 (Billion Cubic Feet)	Coal Production, 2001 (Million Short Tons)	Electric Generating Capacity, 2001 (Gigawatts)	Crude Oil Refining Capacity, 1/1/03 (Thousand Barrels Per Day)
Djibouti	0	0	0	0	0	0	0.09	0
Eritrea	0	0	0	0	0	0	0.06	14.6
Ethiopia	0.428	880	0	0	0	0	0.53	0
Somalia	0	200	0	0	0	0	0.07	10.0
Regional Total	0.428	1,080	0	0	0	0	0.76	24.6

Source: Energy Information Administration, Oil and Gas Journal

Sources for this report include: Africa Research Bulletin, Agence France Press, AP Worldstream, BBC, Business Wire, CIA World Factbook 2003, Economist Intelligence Unit, Energy Day, Financial Times, International Monetary Fund, Middle East Economic Digest, Middle East Executive Reports, Oil and Gas Journal, Petroleum Economist, Petroleum Intelligence Weekly, PR Newswire, U.S. Energy Information Administration, U.S. Geological Survey, World Markets Online.

LINKS

For more information from EIA on Djibouti, Eritrea, Ethiopia, Somalia please see:

[EIA: Country Information on Djibouti](#)

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[EIA: Country Information on Somalia](#)

Links to other U.S. government sites:

[U.S. Agency for International Development \(USAID\)](#)

[USAID The Greater Horn of Africa Initiative](#)

[CIA World Factbook: Djibouti](#)
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[International Geothermal Association - Ethiopia](#)

[IMF Ethiopia Information](#)

[Ethio-American Trade & Investment Council](#)

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