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COUNTRY ANALYSIS BRIEFS

Libya

Last Updated: March 2006

Background

Libya's economy is heavily reliant on oil exports, but it is attempting to diversify. The country is earning high oil export revenues, but gasoline import costs are also rising rapidly.

Libya's oil export revenues have increased sharply in recent years, to $28.3 billion in 2005 and a forecast $31.2 billion in 2006, up from only $5.9 billion in 1998. The rebound in oil prices since 1999, along with the lifting of U.S. and U.N. sanctions, has resulted in an improvement in Libya's foreign reserves ($31 billion as of June 2005), trade balance (a $17 billion surplus in 2005) and overall economic situation (strong growth; see below). On the other hand, higher oil earnings may also be removing incentives for Libya to restrain spending and to implement needed economic reforms.

In part due to higher oil export revenues, Libya experienced strong economic growth during 2004 and 2005, with real gross domestic product (GDP) estimated to have grown by about 6.7 percent and 6.5 percent, respectively. For 2006, real GDP is expected to grow 6.7 percent, with consumer price inflation of 3.1 percent. Despite the country's recent economic growth, unemployment remains high. In addition, Libya's unclear legal structure, often-arbitrary government decision making process, bloated public sector (as much as 60 percent of government spending goes towards paying public sector employees' salaries), and various structural rigidities have posed impediments to foreign investment and economic growth.

There are tentative and halting signs that Libya intends to move towards economic reform, liberalization, and a reduction in the state's direct role in the economy. In June 2003, President Qadhafi said that the country's public sector had failed and should be abolished, and called for privatization of the country's oil sector, in addition to other areas of the economy. Qadhafi also pledged to bring Libya into the World Trade Organization (WTO), and appointed former Trade and Economy Minister Shukri Muhammad Ghanem, a proponent of privatization, as Prime Minister. In June 2003, Libya unified its multi-tiered exchange rate system (official, commercial, black-market) around the IMF's special drawing rights, effectively devaluing the country's currency. Among other goals, the devaluation aimed to increase the competitiveness of Libyan firms and to help attract foreign investment into the country. In October 2003, Prime Minister Ghanem announced a list of 361 firms in a variety of sectors -- steel, petrochemicals, cement, and agriculture -- to be privatized in 2004. To date, however, little progress has been made on this agenda. In July 2005, Libya decided to eliminate customs duties on 3,500 imported goods

On April 5, 1999, more than 10 years after the 1988 bombing of Pan Am flight 103 over Lockerbie, Scotland that killed 270 people, Libya extradited two men suspected in the attack. In response, the United Nations suspended economic and other sanctions against Libya which had been in place since April 1992. In late April 2003, Libya's foreign minister stated that Libya had

"accepted civil responsibility for the actions of its officials in the Lockerbie affair," and in September 2003 the UN Security Council officially lifted its sanctions. On February 26, 2004, following a declaration by Libya that it would abandon its weapons of mass destruction (WMD) programs and comply with the Nuclear Non-Proliferation Treaty (NNPT), the United States rescinded a ban on travel to Libya and authorized U.S. oil companies with pre-sanctions holdings in Libya to negotiate on their return to the country if and when the United States lifted economic sanctions. On April 23, 2004, the United States eased its economic sanctions against Libya, with a written statement from the White House Press Secretary stating, "U.S. companies will be able to buy or invest in Libyan oil and products. U.S. commercial banks and other financial service providers will be able to participate in and support these transactions." On the same day, Libya's state-owned National Oil Corporation (NOC) announced its first shipment of oil to the United States in over 20 years. On June 28, 2004, the United States and Libya formally resumed diplomatic relations, severed since May 1981. Finally, on September 20, 2004, President Bush signed Executive Order 12543, lifting most remaining U.S. sanctions against Libya and paving the way for U.S. oil companies to try to secure contracts or revive previous contracts for tapping Libya's oil reserves. The Order also revoked any restrictions on importation of oil products refined in Libya, and unblocked certain formerly blocked assets.

Libya is hoping to reduce its dependency on oil as the country's sole source of income, and to increase investment in agriculture, tourism, fisheries, mining, and natural gas. Libya's agricultural sector is a top governmental priority. Hopes are that the Great Man Made River (GMR), a five-phase, $30 billion project to bring water from underground aquifers beneath the Sahara to the Mediterranean coast, will reduce the country's water shortage and its dependence on food imports. Libya also is attempting to position itself as a key economic intermediary between Europe and Africa, becoming more involved in the Euro-Mediterranean process and pushing for a new African Union. In April 2001, members of the Arab Maghreb Union (Algeria, Libya, Mauritania, Morocco, and Tunisia) agreed to encourage intra-regional cooperation on trade, customs, banking, and investment issues.

Oil

Libya is now open to foreign investment after years of sanctions. The country held two bidding rounds in 2005, and is expected to hold several more in 2006 and 2007.

Oil exploration in Libya began in 1955, with the key national Petroleum Law No. 25 enacted in April of that year (a new petroleum law is currently under development). Libya's first oil fields were discovered in 1959 (at Amal and Zelten -- now known as Nasser), and oil exports began in 1961. During 2004, Libyan oil production was estimated at nearly 1.6 million barrels per day (bbl/d), with consumption of 237,000 bbl/d and net exports of about 1.34 million bbl/d. The vast majority (more than 90 percent) of Libya's exports are sold to European countries like Italy (562,000 bbl/d in January-October 2005), Germany (285,000 bbl/d), France (101,000 bbl/d), Spain and Greece. In addition, Libyan oil exports to the United States averaged 56,000 bbl/d during the first 10 months of 2005, after resuming in June 2004 for the first time in two decades.

Overall, Libya would like foreign company help to increase the country's oil production capacity from 1.60 million bbl/d at present to 2 million bbl/d by 2008-2010, and to 3 million bbl/d by 2015. In order to achieve this goal, and also to upgrade its oil infrastructure in general, Libya is seeking as much as $30 billion in foreign investment over that period. Libya is considered a highly attractive oil province due to its low cost of oil recovery (as low as $1 per barrel at some fields), the high quality of its oil, its proximity to European markets, and its well-developed infrastructure.

If Libya reaches 2 million bbl/d in oil production capacity, this would take the country back to a level it has not seen since the late 1970s. During that decade, Libya's revolutionary government imposed tough terms on producing companies, leading to a slide in oilfield investments and oil production -- from 3.3 million bbl/d in 1970 to 1.5 million bbl/d in 1975, before rising again to 2.1 million bbl/d in 1979. During the 1980s, Libyan oil production averaged around 1.2 million bbl/d, rising to around 1.4 million bbl/d in the 1990s.

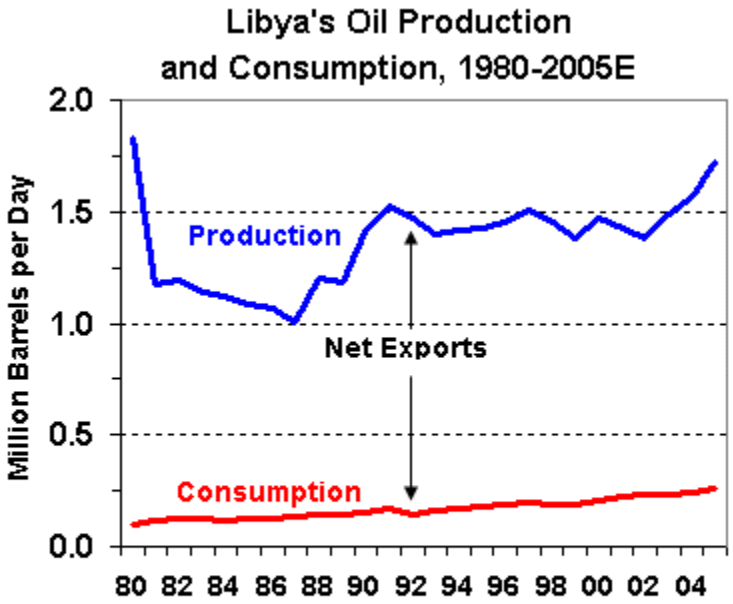
Libya's main oil export grades include Es Sider (36-37^{o} API), El Sharara (44^{o} API), Zueitina (42^{o} API), Bu Attifel (41^{o} API), Brega (40^{o} API), Sirtica (40^{o} API), Sarir (38^{o} API), Amna (36^{o} API), and El Bouri (26^{o} API). Most Libyan oil is sold on a term basis, including to the country's Oilinvest marketing network in Europe; to companies like Agip, OMV, Repsol YPF, Tupras, CEPSA, and Total; and small volumes to Asian and South African companies. Libyan oil is generally light (high API gravity) and sweet (low sulfur), but also thick and waxy.

The lifting of U.N. and U.S. sanctions, along with possible changes to Libya's 1955 hydrocarbons legislation, is likely to prove extremely helpful in boosting the country's oil output. Sanctions had

caused delays in a number of field development and Enhanced Oil Recovery (EOR) projects, and had deterred foreign capital investment to a significant extent. Also the full lifting of sanctions is important for Libya's oil industry since U.S. companies are leaders in advanced oil and gas technologies, many of which they have under patent.

Reserves, Geology

According to the *Oil and Gas Journal,* Libya had total proven oil reserves of 39 billion barrels at the end of 2005. About 80 percent of Libya's proven oil reserves are located in the Sirte basin, which is responsible for 90 percent of the country's oil output. However, Libya remains "highly unexplored" according to *Wood Mackenzie Consultants*, and has "excellent" potential for more oil discoveries. In addition, despite years of oil production, only around 25 percent of Libya's area is covered by agreements with oil companies. The under-exploration of Libya is due largely to sanctions, to the lack of modern technology, and also to stringent fiscal terms imposed by Libya on foreign oil companies.



Note: Production includes crude oil, natural gas liquids and refinery gain.

Source: EIA; International Energy Annual, internal estimates

EPSA IV

On January 30, 2005, Libya held its first round of oil and gas exploration leases since the United States ended most sanctions against the country. Known as EPSA 4, the round -- launched in August 2004 -- offered 15 exploration areas for auction. Approximately 56 companies registered 104 bids, but only a handful of companies actually won acreage in the intensely competitive bidding. In the end, acreage in 9 areas (5 onshore oil blocks and 4 offshore, gas-prone blocks) went to U.S.-based Occidental Petroleum, while ChevronTexaco and Amerada Hess won acreage in 1 block each. Other companies with winning bids included the Indian Oil Corp., Liwa (UAE), Oil Search Ltd. (Australia), Petrobras (Brazil), Sonatrach (Algeria), Verenex (Canada), and Woodside (Australia). No European companies were awarded acreage in this round.

Specifically, an Occidental-Liwa consortium won onshore blocks 131 and 136 in the Murzuq basin, plus onshore blocks 106 and 124 in the Sirte area, and block 59 in the Cyrenaica area near the Egyptian border. Occidental also won offshore block 53 (Gulf of Sirte), with offshore blocks 35, 36 and 52 (all Gulf of Sirte) going to an Occidental/Liwa/Woodside consortium. Sonatrach won onshore block 65 (Ghadames), with a Verenex-led group getting onshore block 47 (North Ghadames, near Tunisia). Petrobras won offshore block 18 (Gulf of Sirte), Indian Oil Corp. won block 86 (West Sirte), and Amerada Hess won offshore block 54 (Gulf of Sirte). Winning companies reportedly paid a high price for Libyan acreage -- on both signature bonuses and production shares -- highlighting the great degree of interest in the relatively underexplored country. Occidental, for instance, paid $25.6 million for Block 106 alone. In July 2005, Occidental reached an agreement with Libya's National Oil Company (NOC) to resume operations in the

country for the first time since 1986. In November 2005, Occidental outlined its Libya exploration plans for the next few years, which reportedly includes 30 exploration wells.

In October 2005, Libya held its second bidding round under EPSA IV. The country plans more such rounds in 2006 and 2007.

In October 2005, Libya held a second bidding round under EPSA IV, with 51 companies taking part and nearly $500 million worth of new investment flowing into the country as a result. In this round, acreage in 26 fields, both onshore and offshore, went to 19 companies, including only 1 U.S. company – ExxonMobil, with four blocks. Other winners included Total, Eni, BG, Norsk Hydro and Statoil (in consortium with BG on one project) of Norway, Tatneft (Russia), Turkish Petroleum Overseas Co., several Japanese companies (Nippon Oil, Mitsubishi, Japan Petroleum Exploration (Japex), Teikoku Oil, Impex Oil), CNPC (China), Pertamina (Indonesia), and three Indian companies - Oil India, Indian Oil Corp., and ONGC Videsh. Agreements were for exploration periods of 5 years, extendable to 25 years under certain conditions.

By all accounts, the second EPSA IV bidding round was fiercely competitive, with winning bidders forced to slash their production percentages sharply – as low as 6.8 percent - for the most coveted acreage in Murzuq (considered a good prospect) and Ghadames (second largest producing area in Libya). Other companies decided to venture into more speculative and more risky areas like Cyrenaica (no commercial finds in Libya to date) and Kufra (frontier acreage), where competition was not as intense.

With the success of the first and second bidding rounds, NOC has announced that the country will offer at least four more bid rounds in 2006 and 2007, covering 261 (or more) blocks. There was talk about round 3 taking place as early as March 2006, but a reported dispute between the NOC and the Oil Ministry appears to have delayed this for now. Libya reportedly is considering a link between upstream oil rights and downstream oil investment (according to comments by NOC planning director Tarek Hassan-Beck in January 2006). In early March 2006, NOC's chairman, Abdullah al-Badri, was replaced by former Prime Minister Shurki Ghanem, reportedly due to disputes over a new Petroleum Law, terms of the Oasis group's return to Libya, and setting priorities between new exploration licensing rounds and development of existing fields.

Under EPSA IV, winners are determined largely based on how low a share of production a company is willing to offer NOC. Effectively, this means that whichever companies offer NOC the greatest share of profits is most likely to win under EPSA IV. In addition, oilfield developers initially bear 100 percent of costs (exploration, appraisal, training) for a minimum of 5 years, while NOC retains exclusive ownership. EPSA IV provides for a management committee comprised of two NOC representatives and one from the outside investor; voting is unanimous, unlike under the previous exploration and production sharing agreement (EPSA III). Other features of EPSA IV include: open competitive bidding and transparency; joint development and marketing of non-associated natural gas discoveries; standardized terms for exploration and production; and non-recoverable bonuses.

Despite the fact that EPSA IV terms are in effect, and that EPSA V may be forthcoming, several EPSA III contracts remain outstanding. Shell, for instance, is still waiting for approval on an EPSA III deal for an LNG venture. Other companies reportedly still negotiating under EPSA II terms include OMV, Repsol, Talisman and Wintershall. In October 2004, Ukraine's Naftogaz Ukrainy reached a deal on four Libyan exploration blocks under EPSA III terms. Reportedly, the company is prepared to invest up to $300 million in Libya.

In December 2005, the Oasis Group – Amerada Hess, ConocoPhillips, and Marathon – reached agreement with Libya on a return to the country for the first time since 1986. After nearly two years of negotiations, Oasis agreed to pay Libya $1.8 billion for a return to its acreage in the Sirte region. The acreage had been held in trust for 19 years as a result of U.S. sanctions against Libya. Oasis' deal with Libya runs for 25 years, with NOC holding a 59.2 percent share, ConocoPhillips and Marathon at 16.33 percent each, and Amerada Hess holding an 8.16 percent share. Oasis' Waha fields currently produce around 350,000 bbl/d, down from around 1 million bbl/d in 1969 and 400,000 bbl/d in 1986.

Recent Field Discoveries and Developments

With reserve replacement slipping since the 1970s, and with state-operated oil fields undergoing a 7-8 percent natural decline rate, Libya's challenge is maintaining production at mature fields (Brega, Sarir, Sirtica, Waha, Zueitina) while finding new oil and developing new discoveries

The el-Bouri oilfield off Libya's western coast is the largest producing oilfield, with output estimated around 60,000 bbl/d. Italy's Eni is the developer of the field, discovered in 1976 at a

depth of 8,700 feet and estimated to contain two billion barrels of proven recoverable crude oil reserves. The first phase of field development, costing $2 billion, was completed in 1990, with el-Bouri producing about 150,000 bbl/d in 1995, followed by a sharp decline thereafter. This decline was due largely to an inability to import EOR equipment under UN sanctions, and possibly could be reversed with an infusion of investment. Besides oil, el-Bouri also contains large volumes of associated natural gas.

Since the discovery of el-Bouri field, there have been a series of oil finds at various Libyan blocks. Generally speaking, the most significant of these discoveries have been in the Murzuq basin, in the Sahara south of Tripoli. The El Sharara field, for instance, is currently producing around 200,000 bbl/d. Repsol YPF leads a European consortium - also consisting of OMV, Total and Norsk Hydro - at the field. Original expectations had been that El Sharara's output of light (44^{o} API), sweet (less than 0.6 percent sulphur content) crude production would reach 200,000 bbl/d by the end of 1998, but various problems, including difficulties with the pipeline to the port of Az Zawiya, delayed achievement of this target. Currently, oil from El Sharara is being processed by the Az Zawiya refinery.

In October 1997, an international consortium led by British company Lasmo, along with Eni and a group of five South Korean companies (led by Korea National Oil Corp., replacing Pedco, and including Hyundai), announced that it had discovered large recoverable crude reserves (around 700 million barrels) at the NC-174 Block, 465 miles south of Tripoli, also in Murzuq. Lasmo, which was purchased by Eni in 2001 after a deal with Amerada Hess fell through, estimated that production from the field, called Elephant, would cost around $1 per barrel (Repsol YPF's Murzuq/El Sharara field, with its 30-inch pipeline to the coast, is located only 40 miles to the north). Elephant originally was due to begin production late in 2000 at around 50,000 bbl/d, and to utilize an existing 30-inch pipeline located 42 miles to the north. Production was delayed due to bureaucratic obstacles, with the field finally starting up in February 2004 at around 10,000 bbl/d. Elephant is expected to reach full capacity of 150,000 bbl/d by the end of 2006.

In August 2003, Total announced that it had started production at the Al Jurf offshore oilfield in Block 137. Estimated output at Al Jurf is around 40,000 bbl/d. Total holds a 37.5 percent share in the field, along with NOC (50 percent) and Germany's Wintershall (12.5 percent). In October 2004, Wintershall said that it would spend $400 million in Libya by the end of 2006 exploring for new oil and gas fields.

Libya's National Oil Company (NOC) and Subsidiaries

Libya's oil industry is run by the state-owned National Oil Corporation (NOC), along with smaller subsidiary companies (see below), which combined account for around half of the country's oil output. Several international oil companies are engaged in exploration/production agreements with NOC. Of NOC's subsidiaries, the largest oil producer is the Waha Oil Company (WOC), created in 1986 to take over operations from Oasis Oil Co., a joint venture of NOC (59.16 percent), Conoco (16.33 percent), Marathon (16.33 percent), and Amerada Hess (8.16 percent). WOC has been among the companies most adversely affected by the US embargo. This is due to the fact that its oilfields are equipped mainly with old US equipment, for which WOC cannot now acquire needed spare parts. As a result, production at WOC's giant Waha field has fallen sharply, from about 1 million bbl/d at its peak in the late 1980s to around 350,000-375,000 bbl/d now.

After Waha, the next largest NOC subsidiary is the Arabian Gulf Oil Company (Agoco), with production coming mainly from the Sarir, Nafoora/Augila, and Messla fields. Agoco production was estimated by NOC at around 430,000 bbl/d in 2003.

Two other large NOC subsidiaries are the Zueitina Oil Company (ZOC), which operates the five Intisar fields in Block 103 of the Sirte Basin, and the Sirte Oil Company (SOC), originally created in 1981 to take over Exxon's holdings in Libya. In 1986, SOC took over the assets of Grace Petroleum, one of the five US companies forced by the US government to leave Libya in 1996. SOC operates the Raguba field in the central part of the Sirte Basin. The field is connected by pipeline to the main line between the Nasser field, one of the largest in Libya, and Marsa el-Brega. Besides Nasser, SOC is in charge of two other gas fields -- Attahadi and Assumud -- plus the Marsa el-Brega liquefied natural gas (LNG) plant.

Occidental's assets in Libya (at Intisar-103) reportedly were producing around 85,000-100,000 bbl/d in 2004, down from 660,000 bbl/d in 1970 and 155,000 bbl/d in 1986. In December 2004, Occidental proposed to invest $2 billion in developing the fields.

In the absence of U.S. oil firms, Libya has depended heavily on non-American companies, such as: 1) Spain's Repsol YPF (mainly at the El Sharara field, plus blocks NC-115, NC-186, NC-187, NC-190); 2) Italy's Agip (Bu Attifel, plus exploration on block NC-174 and in the el-Bouri offshore Mediterranean field); 3) Austria's OMV 4) PetroCanada (the Amal field in Block NC-12 and the En Naga block); 5) Germany's Wintershall (al-Jurf); and 6) France's Total (Murzuq). In July 2003, India's ONCG Videsh received approval to develop two Libyan exploration blocks along with the Turkish Petroleum Overseas Company and Ukraine's Naftogaz Ukrainy. In December 2003, Libya reached a $100 million deal with a consortium of Australia's Woodside Petroleum (45 percent share), Repsol YPF (35 percent), and Greece's Hellenic Petroleum (20 percent) to develop several Libyan oil fields.

Production from Block NC-115 of the Murzuq basin, being developed by Repsol, Total, and OMV (with 75 percent of output going to Libya's NOC), increased to around 75,000 bbl/d in early 1998, and 160,000 bbl/d as of October 2001. In November 2005, Repsol (along with OMV, Total and Norsk Hydro) announced that it had discovered a significant new oil deposit of light, sweet oil in Block NC-186 of Murzuq. Current production from NC-186 is around 48,000 bbl/d.

Refining/Marketing

Libya's refining sector needs upgrading after years of sanctions, and the country is seeking to do so. Also, Libya is looking to sell overseas downstream assets, partly to raise money.

Libya has five domestic refineries, with a combined nameplate capacity of approximately 380,000 bbl/d, significantly higher than the volume of domestic oil consumption (258,000 bbl/d in 2005). Libya's refineries include: 1) the Ras Lanuf export refinery, completed in 1984 and located on the Gulf of Sirte, with a crude oil refining capacity of 220,000 bbl/d; 2) the Az Zawiya refinery, completed in 1974 and located in northwestern Libya, with crude processing capacity of 120,000 bbl/d; 3) the Tobruk refinery, with crude capacity of 20,000 bbl/d; 4) Brega, the oldest refinery in Libya, located near Tobruk with crude capacity of 10,000 bbl/d; and 5) Sarir, a topping facility with 10,000 bbl/d of capacity. In May 2002, Libya signed a $280 million contract with South Korea's LG Petrochemicals to upgrade Az Zawiya. In addition, Ras Lanuf also is slated for upgrading, although that project appears to have been delayed.

Libya's refining sector reportedly was hard hit by UN sanctions, specifically UN Resolution 883 of November 11, 1993, which banned Libya from importing refinery equipment. Libya is seeking a comprehensive upgrade to its entire refining system, with a particular aim of increasing output of gasoline and other light products (i.e. jet fuel). Possible projects include 1) a new 20,000-bbl/d hydro skimming refinery in Sebha, which would process crude from the nearby Murzuq field and meet local demand in remote, southwestern Libya; and 2) a 200,000-bbl/d export refinery in Misurata.

In addition to its domestic refineries, Libya also has operations in Europe through its overseas oil retail arm, Tamoil. Through Tamoil, Libya is a direct producer and distributor of refined products in Italy, Germany, Switzerland, and (since early 1998) Egypt. Tamoil Italia, based in Milan, controls about 7.5 percent of Italy's retail market for oil products and lubricants, which are distributed through around over 2,000 Tamoil service stations. Libya's ability to increase the supply of oil products to European markets has been somewhat constrained by the fact that Libya's refineries are badly in need of upgrading, specifically in order to meet stricter EU environmental standards in place since 1996. During 2005, there were reports that Libya was considering the sale of 50-60 percent of Tamoil's assets in order to raise cash, and that companies like Repsol and Total were interested.

In Egypt, Libya is planning to build gasoline stations on the coastal road linking the two countries as well as in other areas of Egypt. The stations are to be run by Libya's foreign oil investment arm Oilinvest, which maintains 300,000 bbl/d of refining capacity in Europe. Also in Egypt, Libya purchased a 39 percent stake in the MIDOR refinery for $430 million in July 2003. Originally, the stake had been held by Israel's Merhav Group, which pulled out of the project after the Palestinian uprising began in late 2000.

Libya's oilfields are connected to Mediterranean terminals by an extensive network of pipelines. Libya's main crude oil pipelines, all owned by NOC, are: Sarir-Marsa el Hariga (Tobruk); Messla-Ras Lanuf; Waha-Es Sider; Hammada El Hamra-Az Zawiya; Amal-Ras Lanuf; Intisar-Zueitina; Nasser (Zelten)-Marsa El Brega. NOC also has six oil terminals and storage facilities (Marsa El Hariga, Zueitina, Marsa el-Brega, Ras Lanuf, Es Sider, Az Zawiya), and is considering expansion of the oil terminal and refinery facility at Az Zawiya.

Natural Gas

Libyan gas

production and exports are increasing, with the opening of the "Greenstream" pipeline to Europe in late 2004 and plans for additional pipelines and LNG expansion.

Continued expansion of natural gas production remains a high priority for Libya for two main reasons. First, Libya has aimed -- with limited success -- to use natural gas instead of oil domestically (i.e., for power generation), freeing up more oil for export. Second, Libya has vast natural gas reserves and is looking to increase its gas exports, particularly to Europe. Libya's proven natural gas reserves as of January 1, 2006 were estimated at 53 Tcf by the *Oil and Gas Journal*, but the country's actual gas reserves are largely unexploited (and unexplored), and thought by Libyan experts to be considerably larger, possibly 70-100 Tcf. Major producing fields include Attahadi, Defa-Waha, Hatiba, Zelten, Sahl, and Assumud.

To expand its gas production, marketing, and distribution, Libya is looking to foreign participation and investment. In recent years large new discoveries have been made in the Ghadames and el-Bouri fields, as well as in the Sirte basin. Libyan natural gas development projects currently underway include as-Sarah and Nahoora, Faregh, Wafa, offshore block NC-41, Abu-Attifel, Intisar, and block NC-98.

Libyan gas exports to Europe are increasing rapidly, with the Western Libyan Gas Project (WLGP) and $6.6 billion, 32-inch, 370-mile "Greenstream" underwater gas pipeline coming online in October 2004. Previously, the only customer for Libyan gas was Spain's Enagas. However, the WLGP -- a 50/50 joint venture between Eni and NOC -- has now expanded these exports to Italy and beyond. Currently, about 8 billion cubic meters (280 Bcf) per year of natural gas are being exported from a processing facility at Melitah, on the Libyan coast, via Greenstream to southeastern Sicily. After that, the gas flows to the Italian mainland, and then onwards to the rest of Europe. Greenstream is 75 percent owned by Eni, with first flows coming from the Wafa onshore field near the Algerian border and the Bahr Essalam offshore field near Tripoli. Combined, the fields should be able to feed 280 Bcf per year of natural gas into Greenstream. Throughput on the Greenstream line reportedly can be boosted to 385 Bcf per year if desired.

Italy's Edison Gas has committed, under a "take-or-pay" contract, to taking around half (140 Bcf per year) of this gas, and to use it mainly for power generation in Italy. Besides Edison, Italy's Energia Gas and Gaz de France have each committed to taking around 70 Bcf of Libyan gas. As part of the overall WLGP, Eni is developing huge Libyan gas reserves in offshore Block NC-41 (Bahr es Salam) in the Gulf of Gabes, in addition to the Wafa gas field. The $8.7 billion project, which began in 1999, is expected to produce 210 Bcf per year of gas for export, as well as condensates estimated at around 70,000 bbl/d oil equivalent. Another 70 Bcf per year of gas is to produced from WLGP for the domestic Libyan market (feedstock or power generation) or possibly for export to Tunisia.

Eni also has promoted linking the reserves of both Egypt and Libya to Italy by pipeline. An agreement in principle to link Egypt and Libya's natural gas grids was reached in June 1997, following a visit to Libya by Egyptian President Hosni Mubarak. In 2001, a joint venture agreement was reached between NOC and Egypt's EGPC for construction of a pipeline to carry Egyptian natural gas to Libya (for power generation, water desalination, and possible export) and for another to carry Libyan oil to Alexandria, Egypt for refining and consumption there). The joint venture company is called "Arab Company for Oil and Gas Pipelines," or ACOG.

Yet another proposal is to build a nearly 900-mile pipeline from North Africa to southern Europe. Such a pipeline could transport natural gas from Egypt, Libya, Tunisia and Algeria, via Morocco and into Spain (a pipeline between Morocco and Spain already exists). Also, Tunisia and Libya agreed in May 1997 to set up a joint venture which will build a natural gas pipeline from the Mellita area in Libya to the southern Tunisian city and industrial zone of Gabes. In late 1998, Tunisia and Libya signed an agreement for around 70 Bcf of gas per year to be delivered from Libyan gas fields to Cap Bon, Tunisia, and in October 2003 the two countries set up a joint venture gas company to build the pipeline.

In 1971, Libya became the second country in the world (after Algeria in 1964) to export liquefied natural gas (LNG). Since then, Libya's LNG exports have generally languished, largely due to technical limitations which do not allow Libya to extract liquefied petroleum gas (LPG) from the natural gas. Libya's LNG plant, at Marsa El Brega, was built in the late 1960s by Esso and has a nominal capacity of about 125 Bcf per year. However, US sanctions prevented Libya from obtaining needed equipment to separate out LPG from the natural gas, thereby limiting the plant's output to about 15 percent of nameplate capacity, all of which is exported to Spain (Enagas).

Now that sanctions have been lifted, however, companies are looking to Libya's LNG potential. In May 2005, Shell agreed to a final deal with NOC to develop Libyan oil and gas resources,

including LNG export facilities. The deal came after lengthy negotiations on the terms of a March 2004 framework agreement. Reportedly, Shell is aiming to upgrade and expand Marsa El Brega and possibly build a new LNG export facility as well at a cost of $105-$450 million. Shell also purchased exploration rights for five blocks in the Sirte basin (the company began seismic work in November 2005). In addition to Shell, other companies like Repsol are also interested in developing Libya's LNG export potential

Electricity

Libya's electricity demand is expected to increase rapidly in coming years, meaning that the country needs to invest billions of dollars in new generating capacity.

Libya currently has electric power production capacity of about 4.7 gigawatts (GW). Most of Libya's existing power stations are being converted from oil to natural gas, and new power plants built to run on natural gas, in large part to maximize the volume of oil available for export purposes. Libya is also looking at potential wind and solar projects, particularly in remote regions where it is impractical to extend the power grid.

Libya's power demand has grown rapidly over the past few decades, with current plans calling for a doubling in power generating capacity by 2012. During the summer of 2004, Libya was hit by widespread blackouts as power plants could not keep up with demand. To prevent such blackouts in the future and to meet surging power consumption, Libya's state-owned General Electricity Company (GECOL) is building several power plants, including: 1) the Western Mountain Gas Turbine Power Plant (4 x 165 MW); 2) the Zawiya Power Plant Gas Turbine Extension (2 x 165 MW); 3) the North Benghazi Combined Cycle Power Plant (2 x 150 MW); 4) the Zawiya Combined Cycle Power Plant (3 x 150 MW); and 5) the West Tripoli Power Plant Extension (2 x 325 MW). One factor leading to rapid power demand growth is the fact that electricity is heavily subsidized, at perhaps one-third the market cost of 12 cents per kilowhatthour.

In 2001, Italy's Enelpower was announced as the preferred bidder on the Western Mountain project, but withdrew from the project in 2003 after failing to reach a final deal. In February 2002, Russia's Tekhnopromexport signed a $600 million deal with Libya to build the 650-MW West Tripoli extension. In August 2003, South Korea's Hyundai signed a $280 million deal to expand the Zawiya plant, west of Tripoli. Other Libyan power projects include the 1,400-MW "Gulfsteam" combined power and desalination complex near Sirte and the 1,400-MW West Benghazi plant.

Aside from building new generation capacity, GECOL – which controls the Libyan power sector at all levels - has a $1 billion program to upgrade and expand the country's power transmission grid. In October 2003, Spain's Abengoa and Cobra signed deals worth a combined $339 million with GECOL in this area. Plans for a new 400-kilovolt (kV) grid are in the works, involving installation of 2,500 miles of new power lines. Companies involved in this project to date include Abengoa and Cobra of Spain, Alstom and Nexans of France. Currently, Libya's power grid consists of around 8,000 miles of 220-kV lines and 13,000 miles of 66-kV and 30kV lines. Libya also is looking at increased links with the Tunisian and Egyptian power grids.

Profile

Country Overview

President	Mu'ammar Qadhafi (since September 1, 1969)
Prime Minister	Shukri Muhammad Ghanem (since June 2003)
Location/Size	North Africa/1,775,500 sq km (685,524 sq mi), slightly larger than Alaska
Independence	December 24, 1951 (from Italy)
Population (7/05E)	5.8 million
Languages	Arabic; Italian and English widely understood in major cities
Religions	Sunni Muslim (97%)
Ethnic Groups	Arab (97%)

Economic Overview

Secretary of the General People's Committee for Economy and Trade	Abd al-Qadir Bilkhayr
Currency/Exchange Rate (2/9/06)	Libyan Dinar/US$1=1.3848 LD
Inflation Rate (2005E)	2.5%

Gross Domestic Product (GDP, 2005E)	$34.5 billion
Real GDP Growth Rate (2005E)	6.5%
Unemployment Rate (2004E)	30%
External Debt (2003/2004)	$11.9 billion
Merchandise Exports (2005E)	$26.0 billion
Exports - Commodities	Petroleum 80%, chemical and petrochemical products, fruits and nuts, carpets
Exports - Partners (2004)	Japan 18.4%, China 9.7%, Italy 6%, South Africa 5.8%, South Korea 5.4%, Taiwan 4.6%, Turkey 4.4%, Netherlands 4%
Merchandise Imports (2005E)	$9.3 billion
Imports - Commodities	Industrial raw materials and intermediate goods, capital goods, foodstuffs and other consumer goods, technical services, military supplies
Imports - Partners (2004)	Germany 12.8%, France 8.3%, Italy 7.7%, China 7.2%, UAE 7.2%, South Korea 6.1%, Russia 5.4%
Current Account Balance (2005E)	$10.5 billion

Energy Overview

Secretary of the General People's Committee for Energy	Ahmad Fathi ibn Shatwan
Proven Oil Reserves (January 1, 2006E)	39.1 billion barrels
Oil Production (2005E)	1,721.6 thousand barrels per day, of which 95% was crude oil.
Oil Consumption (2005E)	258 thousand barrels per day
Net Oil Exports (2005E)	1,464 thousand barrels per day
Crude Oil Distillation Capacity (2005E)	380 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2006E)	52.65 trillion cubic feet
Natural Gas Production (2003E)	247 billion cubic feet
Natural Gas Consumption (2003E)	221 billion cubic feet
Recoverable Coal Reserves (2003E)	None
Coal Production (2003E)	None
Coal Consumption (2003E)	None
Electricity Installed Capacity (2003E)	4.71 gigawatts (all oil and natural gas)
Electricity Production (2003E)	14.4 billion kilowatt hours
Electricity Consumption (2003E)	13.4 billion kilowatt hours
Total Energy Consumption (2003E)	0.73 quadrillion Btus*, of which Oil (68%), Natural Gas (32%)
Total Per Capita Energy Consumption (2003E)	130.8 million Btus
Energy Intensity (2003E)	22,698 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	49.7 million metric tons, of which Oil (71%), Natural Gas (29%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	9.0 metric tons
Carbon Dioxide Intensity (2003E)	1.6 Metric tons per thousand $2000-PPP**
Environmental Issues	Desertification; very limited natural fresh water resources; the Great Manmade River Project, the largest water development scheme in the world, is being built to bring water from large aquifers under the Sahara to coastal cities
Major Environmental Agreements	party to: Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Marine Dumping, Ozone Layer Protection signed, but not ratified: Environmental Modification, Law of the Sea

Oil and Gas Industry

Organization	The Ministry of Energy was abolished in 2000. At that time, the National Oil Company was given full control over the country's oil sector. The Energy Ministry was re-established in 2004. Oil rights in Libya are awarded under Exploration and Production Sharing Agreements (EPSAs) based on the 1955 Hydrocarbon Law. Downstream investment is covered by the 1997 Foreign Investment Law.
Major Oil Terminals	Es Sider, Marsa el-Brega, Tobruk, Ras Lanuf, Zawiya, Zuetina
Foreign Company Involvement	Amerada Hess, Canadian Occidental, ChevronTexaco, CNPC, Eni, Husky Oil, Indian Oil Corp., Liwa (UAE), Medco Energy (Indonesia), Naftogaz Ukrainy, Nimr Petroleum (Saudi Arabia), Norsk Hydro, Occidental, OMV, ONGC, Pedco (South Korea), Petrobras (Brazil), PetroCanada, Petronas (Malaysia), Red Sea Oil Corp. (Canada), Repsol, Shell, Total, Verenex (Canada), Wintershall (Germany), Woodside (Australia)
Major Oil and Gas Fields	Al Jurf , Amal, Beda, Bouri, Bu Attifel, Defa-Waha, El Sharara, Elephant, Ghani, Gialo, Hofra, Intisar, Kabir, Mabruk, Murzuq, Nafoora, Nasser, NC-41, NC-186 fields, Omar, Sarah, Sarir, Wafa, Zella, Zenad, Zueitina
Major Pipelines	Amal-Ras Lanuf; Defa-Nasser; Hammada el Hamra-Az Zawiya; Intisar-Zueitina; Intisar - Hatiba; Messla-Ras Lanuf; Nasser-Hatiba; Nasser (Zelten)-Marsa el Brega; Sarir-Marsa el Hariga; Waha-Es Sider
Major Refineries (capacity, bbl/d)	Ras Lanuf (220,000 bbl/d), Az-Zawiya (120,000 bbl/d), Tobruk (20,000 bbl/d), Brega (10,000 bbl/d), Sarir (10,000 bbl/d)

* 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

EIA Links

EIA - Historical Energy Data on Libya
OPEC Revenues Fact Sheet

U.S. Government

CIA World Factbook- Libya
Iran-Libya Sanctions Act Extension
Library of Congress Country Study on Libya
U.S. State Department Background Note - Libya
U.S. State Department Consular Information Sheet - Libya
U.S. Treasury Department's Office of Foreign Assets Control

Other Links

AME Info Middle East Business Information
Arab Net - Libya
BBC Country Profile -- Libya
Central Bank of Libya

Eni
EU-Libya Relations
Libya Daily
Libyaninvestment.com
Libya: Our Home
Libya Online Links Page
Libya United Nations Mission
MBendi Libya Country Profile
University of Pennsylvania - Libya Page
University of Texas at Austin - Libya Page

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AFX European Focus
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Business Report
Canada NewsWire
CIA World Factbook
D eutsche Bank
Dow Jones Interactive
Dow Jones Newswires
Economist Intelligence Unit ViewsWire
Energy Day
Financial Times Energy Newsletters
G lobal Insight
The Guardian
Hart's Africa Oil and Gas
Hart's E & P Daily
Houston Chronicle
Lloyd's List
Middle East Economic Digest (MEED)
Middle East Economic Survey (MEES)
Oil Daily
Oil and Gas Journal
Petroleum Economist
Petroleum Intelligence Weekly
Platt's Oilgram News
Reuters
Stratfor
US Energy Information Administration
Washington Post
World Gas Intelligence
World Markets Research Centre
World Oil
Weekly Petroleum Argus
World Gas Intelligence
World Markets Analysis.

Contact Info

Lowell Feld
202-586-9502
lowell.feld@eia.doe.gov