January 2004

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Libya

Libya is a major oil exporter, particularly to Europe. With the lifting of U.N. sanctions against Libya in September 2003, oil companies are eager to resume and/or expand operations in Libya.

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

GENERAL BACKGROUND

Oil export revenues, which account for over 95% of Libya's hard currency earnings (and 75% of government receipts), were hurt severely by the dramatic decline in oil prices during 1998, as well as by reduced oil exports and production -- in part as a result of US and UN sanctions. With higher oil prices since 1999, however, Libyan oil export revenues have increased sharply, to $13.4 billion in 2003 and a forecast $12.9 billion in 2004, up from only $5.9 billion in 1998. As a result of strong oil export revenues, Libya's fiscal situation is now significantly in surplus (around 16% of GDP in 2002), but remains highly vulnerable to fluctuations in oil prices.

In part due to higher oil export revenues, Libya experienced strong economic growth during 2003, with real gross domestic product (GDP) estimated to have increased by around 2.7%-3.8%, up from (0.2%)-1.5% growth in 2002. For 2004, real GDP growth of 2.3%-2.6% is expected, with consumer price inflation of 1.9%-3.5%. Despite Libya's relatively strong recent economic growth, unemployment remains high as the country's population grows rapidly and new jobs are not created rapidly enough. In addition, Libya's relatively poor infrastructure (i.e. roads and logistics), unclear legal structure, often-arbitrary government decision making process, a bloated public sector (as much as 60% of government spending goes towards paying public sector employees' salaries), huge public works programs (i.e., the "Great Man Made River" project), and various structural rigidities have posed impediments to foreign investment and to economic growth.

There are signs that Libya now is moving towards a variety of economic reforms 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. During 2003, Libya unified its multi-tiered exchange rate system (official, commercial, black-market) while 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, agriculture -- to be privatized in 2004. Whether or not this will be carried out remains to be seen.

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. US sanctions, including the Iran-Libya Sanctions Act (ILSA) of 1996 (which covers foreign companies that make new investments of $20 million or more over a 12-month period in Libya's oil or gas sectors) remain in effect. On July 27, 2001, the US Congress voted to extend ILSA for five more years. UN sanctions since 1992 reportedly have cost Libya billions of dollars in lost income, and have made it more difficult for Libya to develop its energy sector. Libya has offered a total of $2.7 billion in compensation to families of Pan Am flight 103 victims, with money to be released in stages as UN and US sanctions are lifted. The deal reportedly expires in April 2004.

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. Following this action, Libya made its first payment -- $4 million -- to each family. In January 2004, the Bush Administration announced that US sanctions would remain in place for the time being, despite Libya's formal announcement on December 19, 2003 that it would abandon its weapons of mass destruction (WMD) programs and allow unconditional international inspections on its facilities.

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, has become more involved in the Euro-Mediterranean process, and has pushed 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

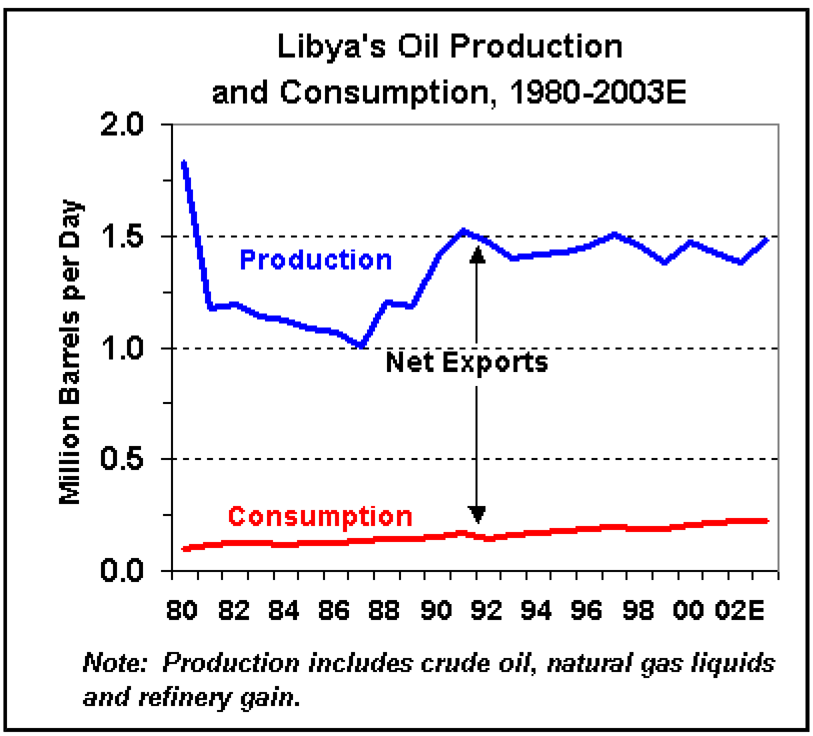
Oil exploration in Libya began in 1955, with the key national Petroleum Law No. 25 enacted in April 1955. Libya's first oil fields were discovered in 1959 (at Amal and Zelten -- now known as Nasser), and oil exports began in 1961. During 2003, Libyan oil production was estimated at nearly 1.5 million barrels per day (bbl/d), with consumption of 227,000 bbl/d and net exports of about 1.25 million bbl/d. Nearly all (about 90%) of Libya's exports are sold to European countries like Italy (485,000 bbl/d in 2002), Germany (188,000 bbl/d in 2002), France (47,000 bbl/d in 2002), Spain and Greece. Libya produces high-quality, low-sulphur ("sweet") crude oil at very low cost (as low as $1 per barrel at some fields).

Libyan oil is priced off of Dated Brent, and main 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.

The September 2003 lifting of UN sanctions, along with possible changes to Libya's 1955 hydrocarbons legislation, could be helpful in boosting the country's oil output. Sanctions had caused delays in a number of field development and EOR projects, and had deterred foreign capital investment to an extent. The full lifting of sanctions, following their suspension in 1999, means that Libya now can resume purchases of oil industry equipment. However, US sanctions remain in place, which is important since US companies are leaders in advanced oil and gas technologies, many of which they have under patent.

Overall, Libya would like foreign company help to increase the country's oil production capacity from 1.4 million bbl/d at present to 2 million bbl/d by 2010. 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 through 2010. Libya is considered a highly attractive oil province due to its low cost of oil recovery, its proximity to European markets, and its well-developed infrastructure.

If Libya does reach 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.



Reserves, Geology

Currently, Libya has total proven oil reserves of 36 billion barrels. The country has 12 oil fields with reserves of 1 billion barrels or more each, and two others with reserves of 500 million-1 billion barrels. 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% of Libya's area covered by agreements with oil companies. The under-exploration of Libya is due largely to sanctions and also to stringent fiscal terms imposed by Libya on foreign oil companies.

Historically, Libya's onshore oil -- where most production currently takes place -- has been found mainly in three geological trends of the Sirte Basin: 1) the western fairway, which includes several large oil fields (Samah, Beida, Raguba, Dahra-Hofra, and Bahi); 2) the north-center of the country, which contains the giant Defa-Waha and Nasser fields, as well as the large Hateiba gas field; and 3) an easterly trend, which has such giant fields as Sarir, Messla, Gialo, Bu Attifel, Intisar, Nafoora-Augila, and Amal. NOC priorities for new exploration include areas in the Sirte (i.e., Blocks 25 and

36), Ghadames (i.e., Block 20), and Murzuq basins (i.e., Field A in Block NC-186, approved for development in August 2002), plus unexplored areas such as Kufra and Cyrenaica. NOC also hopes to apply modern Enhanced Oil Recovery (EOR) techniques to existing oil fields.

Libya has a relatively narrow continental shelf and slope in the Mediterranean and Gulf of Sirte, which widens in the west in the Gulf of Gabes. The northern part of the Gulf of Gabes, also known as the November Seventh concession, lies on the Libyan-Tunisian border and is rich in oil and gas. As part of a 1988 settlement to a long-standing territorial dispute, the area (which contains an estimated 3.7 billion barrels of oil and nearly 12 trillion cubic feet -- Tcf -- of natural gas) is set to be exploited by the Libyan-Tunisian Joint Oil Company (JOC), a 50-50 venture of Libya's NOC and Tunisia's ETAP. The Libyan side of the zone contains the Omar structure, which is estimated to contain more than 65% of the zone's total oil and gas reserves. On February 1, 1997, JOC awarded the entire block to a consortium consisting of Saudi Arabia's Nimr Petroleum (55%) and Malaysia's Petronas (45%).

With reserve replacement slipping since the 1970s, and with state-operated oil fields undergoing a 7%-8% natural decline rate, Libya's challenge is maintaining production at mature fields (Brega, Sarir, Sirtica, Waha, Zuetina). At the same time, Libya needs to bring new fields like El Sharara (online in December 1996; reserves of 2 billion barrels; production of 170,000 bbl/d; main operator Repsol YPF, along with Austria's OMV and Total) and Mabruk (Total) online.

Recent Field Discoveries and Developments

The el-Bouri oilfield off Libya's western coast is the largest producing oilfield in the Mediterranean Sea (at 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 2 billion barrels in 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. The El Bouri field was purchased by Repsol YPF in 1993 for $65 million.

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 170,000 bbl/d. Repsol YPF leads a European consortium, which also consists of OMV and Total, at the field. Original expectations had been that El Sharara's output of light (44^{o} API), sweet (less than 0.6% 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 now seen starting up in 2004 and reaching full capacity of

150,000 bbl/d by 2006.

In August 2003, Total announced that it had started production at the al-Jurf offshore oilfield in Block 137. Output at Al Jurf is expected to reach 40,000 bbl/d. Total holds a 37.5% share in the field, along with NOC (50%) and Germany's Wintershall (12.5%).

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, Conoco, Marathon, and Amarada Hess. 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 despite an emergency maintenance program begun in 1992.

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.

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.

Foreign and Domestic Oil Company Involvement/Organization
Under the government of reform-minded Prime Minister Shukri Ghanem, some privatization of the country's oil sector, particularly the downstream sector, now appears more likely than in the past. In November 2003, Ghanem said that Libya planned to open "39 blocks for bidding where oil discoveries have been made but were non-commercial." Libya is negotiating with various European oil companies, such as Spain's Repsol YPF and Eni, on deals covering 30 oil exploration blocks. NOC reportedly is planning to grant new oil exploration and development licenses in early 2004. Libya is attempting to attract foreign companies with improved incentives and production terms (i.e., access to exploration acreage, small field developments, large field incremental production opportunities, adoption of international competitive bidding practices).

European companies reportedly have been frustrated over the slow pace of progress in awarding Libyan oil concessions, including the 137 exploration blocks offered in May 2000, after UN sanctions were suspended. However, in the summer of 2003, Libya signed a $90 million oil and gas exploration deal with Repsol YPF and Austria's OMV, plus a $57 million deal with Germany's RWE-Dea, on areas in the Sirte, Murzuq, and Al-Kufrah basins. Previously, India's ONGC and the Turkish Petroleum Overseas Co. agreed in August 2002 to acquire a 49% stake in two blocks in the Sirte and Ghadames basins. Also in August 2002, the China National Petroleum Company (CNPC) won a $230 million contract to build twin pipelines for oil (32-inch) and natural gas (16-inch), linking the Wafa field (operated by Eni) in the south to Melitah, near Tripoli. In late December 2003, CNPC announced that the project had been completed.

Leading foreign oil producers in Libya include Eni, which has been operating in the country since 1959, France's Total, and Repsol YPF. Two US oil companies (Exxon and Mobil) withdrew from Libya in 1982, following a US trade embargo begun in 1981. Five other US companies (Amerada Hess, Conoco, Grace Petroleum, Marathon, and Occidental) remained active in Libya until 1986, when President Reagan ordered them all to cease activities there. Conoco, Amerada Hess and Occidental made up the "Oasis Group," which reportedly was producing around 400,000 bbl/d in 1986 from the Gialo, Defa, Waha, and Bahi fields (today, the fields produce around 100,000 bbl/d).

In December 1999, US oil company executives from Oasis plus Marathon traveled to Libya, with US government approval, to visit their old oil facilities in the country. The former head of NOC, Abdullah al-Badri, has stated that if US companies return to Libya, they will return to the fields they used to operate in the country. However, in the first part of 2001, Libya contacted the US companies and indicated that, given its desire to develop their fields, Libya was considering transferring them to European companies. In September 2001, Libya stated that the US companies must either make use of their concessions within a year or risk losing them. In March 2002, the US State Department said that it would permit Marathon Oil to hold discussions with Libyan officials while sanctions remain fully in place. The Oasis Group's leases on its Libyan oil fields expire in 2005.

In the absence of U.S. oil firms, Libya depends heavily on non-American companies, such as: 1) Repsol YPF (mainly at the El Sharara field, plus exploration at blocks NC-186, NC-187, and North-A); 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) Wintershall (al-Jurf); and 6) Total (Murzuq). Also, in July 2003, India's ONCG Videsh received approval for a $300 million deal on developing two Libyan exploration blocks along with the Turkish Petroleum Overseas Company and possibly Ukraine's Naftohaz Ukrayiny. Then, in December 2003, Libya reached a $100 million deal with a consortium of Australia's Woodside Petroleum (45% share), Repsol YPF (35%), and Greece's Hellenic Petroleum (20%) to develop several Libyan oil fields. Finally, Libya reportedly is in negotiations with Brazil's Petrobras for an exploration venture in the country.

Production from Block NC-115 of the Murzuq basin, being developed by Repsol YPF, Total, and OMV (with 75% 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 December 2001, Repsol YPF (along with OMV, Total and Saga Petroleum) announced that it had discovered a significant new oil deposit in Block NC-186 of Murzuq. In November 2003, Repsol YPF announced that it had brought online 40,000 bbl/d from NC-186, and would bring online another 35,000 bbl/d in 2004. In April 2002, the same Repsol YPF consortium announced its first discovery in in the NC-190 block of Murzuq, in the Hawaz formation.

Under the current exploration and production sharing agreement (EPSA 3), only around 25% of the country's oil fields have been granted to foreign operators (although Libya does plan to open up some 40 blocks in the Sirte basin and other areas to foreign investment). In July 2000, NOC said that it would open up around 70% of its land to exploration, and that it would bundle exploration blocks into three packages, with the first package to include blocks in the oil-rich Murzuq basin.

Refining/Marketing

Libya has three domestic refineries, with a combined nameplate capacity of approximately 343,400 bbl/d, significantly higher than the volume of domestic oil consumption (227,000 bbl/d; the rest is exported). 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; and 3) Brega, the oldest refinery in Libya, located near Tobruk with crude capacity of 8,400 bbl/d. In February 2001, bids were submitted by engineering and construction firms on a $400 million project to upgrade Az Zawiya (including construction of a new 120,000-bbl/d refinery). In May 2002, Libya signed a $280 million contract with South Korea's LG Petrochemicals to upgrade the refinery. Ras Lanuf also is slated for upgrading, although that project appears to have been delayed. In March 2002, Ras Lanuf was shut down for several days after a fire broke out at an ethylene storage tank on March 19.

In addition to its domestic refineries, Libya also has operations in Europe. Libya is a direct producer and distributor of refined products in Italy, Germany, Switzerland, and (since early 1998) Egypt. In Italy, Tamoil Italia, based in Milan, controls about 5% of the country's retail market for oil products and lubricants, which are distributed through nearly 2,100 Tamoil service stations. Sanctions have constrained Libya's ability to increase the supply of oil products to European markets, however, as Libya's refineries are badly in need of upgrading, especially in order to meet stricter EU environmental standards in place since 1996. 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, in July 2003 Libya purchased a 39% stake in the MIDOR refinery for $430 million. Originally, the stake had been held by Israel's Merhav Group, which pulled out of the project after the Palestinian uprising began in late 2001.

Recently, Libya has been active in various African countries. In June 2003, for instance, Tamoil reportedly secured interests in Zimbabwe's oil pipeline and storage facilities, and reportedly was set to begin pumping oil into Zimbabwe's holding tanks at the Mozambique port of Beira. Zimbabwe has been experiencing an economic and fuel supply crisis in recent months. In September 2002, the Central African Republic (CAR) signed a 99-year deal with Libya to search for oil, uranium and other minerals in the CAR. In August 2002, Libya reached a deal with Ghana to supply that country with an additional 10,000 bbl/d of crude oil to its 45,000-bbl/d Tema refinery.

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 a new 20,000-bbl/d refinery in Sebha (for which Libya is seeking foreign investment), which would process crude from the nearby Murzuq field, and a 200,000-bbl/d export refinery in Misurata.

Libya has a significant petrochemical industry, centered on Marsa el-Brega. Ethanol, ammonia, and urea are the main petrochemicals produced at present, with Ras Lanouf being developed to produce benzene, butadiene, and MTBE.

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, Zawiya), and is considering bids for a $150 million-$300 million expansion of the oil terminal and refinery facility at Az Zawiya.

NATURAL GAS

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 in 2003 are estimated at 46.4 Tcf, 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. Libya also produces a small amount of liquefied petroleum gas (LPG), most of which is consumed by domestic refineries.

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. In May 2000, NOC reportedly came out with a framework for gas exploration in the country, under which NOC would have first priority to the foreign company's gas share at an agreed discount. In December 2000, NOC announced that it had discovered a 472-Bcf gas field in the Sirte basin, northwest of Assumud.

Potential exists for a large increase in Libyan gas exports to Europe, although at present the only customer for Libyan gas is Spain's Enagas. A joint venture between Eni and NOC on the Western Libyan Gas Project (WLGP), an approximately $5.6 billion plan aimed at developing and exporting large volumes of natural gas to Italy, is moving ahead. In June 2002, for instance, Eni affiliate Saipem was awarded a $500-$550 million contract to build and install an offshore natural gas platform northwest of Tripoli. In February 2002, $1 billion worth of engineering, procurement and construction contracts were awarded to a consortium led by Japan's JGC and including France's Sofregaz and Italy's Technimont. The consortium is working on oil and natural gas infrastructure in the Wafa Desert and near Melitah on the Mediterranean coast, with possible first flows starting in 2004 and 2005.

Overall, the WLGP calls for Libya to export 8 billion cubic meters (280 Bcf) per year of natural gas from a processing facility at Melitah to Italy and France over 24 years, beginning in 2006, via a 370-mile underwater pipeline (called "Green Stream") under the Mediterranean to southeastern Sicily and the Italian mainland. To date, Italy's Edison Gas has committed to taking around half (140 Bcf) 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 set to develop huge Libyan gas reserves in offshore Block NC-41 in the Gulf of Gabes, as well as in the Wafa onshore gas (and oil) field on the Algerian border. Feasibility studies have been completed on Wafa and NC-41, and gas is expected to begin flowing by mid-2004. The project also is expected to produce condensates estimated at around 70,000 bbl/d oil equivalent.

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 November 2002, an agreement reportedly was reached on construction of a $10 billion project for one 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).

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. Completion by 2005 is anticipated.

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 LPG from the LNG, thereby forcing the buyer to do so. Libya's LNG plant, at Marsa El Brega, was built in the late 1960s by Esso and has a capacity of about 100 billion cubic feet per year. However, US sanctions have prevented Libya from obtaining needed equipment to separate out liquefied petroleum gas (LPG) from the natural gas, thereby limiting the plant's output to about one-third of nameplate capacity. If sanctions are fully lifted and needed equipment is obtained and installed, Libyan LNG exports could triple, with likely customers including Spain, Turkey and Italy. On February 1, 2002, Libya joined the Gas Exporting Countries Forum (GECF), formed in 2001 to promote cooperation in the world natural gas industry. Members of the GECF account for around three-fourths of world natural gas reserves and three-fifths of exports.

ELECTRIC POWER

Libya currently has electric power production capacity of about 4.6 gigawatts. Power demand is growing rapidly (around 6% annually), and Libya has plans to more than double installed capacity by 2010 at a cost of over $3.5 billion. Most of Libya's existing power stations are oil-fired, though several have been converted to natural gas. In the past, Libya also has expressed interest in developing nuclear power, and Russia says that it remains willing to help in this regard.

Italy's Enelpower was announced as the preferred bidder in 2001 on the 600-megawatt (MW) Western Mountain Power Project, but subsequently has withdrawn from the project after failing to reach a final deal. Other Libyan power projects include an 800-MW power plant in Zuwara on the west coast, a 1,400-MW power plant to be located on the coast between Benghazi and Tripoli (Enelpower is bidding on this plant as well), and the 1,200-MW "Gulf Steam" combined power and desalination complex in Sirte (France's Alstom appears to be the lead bidder). In February 2002, Russia's Tekhnopromexport signed a $600 million deal with Libya to build the 650-MW Western Tripoli power plant. An expansion and upgrading project at the 450-MW Benghazi North power plant would double the plant's capacity and convert it to combined cycle. Finally, in August 2003, South Korea's Hyundai signed a $280 million deal to expand the Az Zawiya power plant, west of Tripoli, by 300 MW.

Libya's power generation and distribution sector requires substantial investment, and officials are looking at alternatives to public financing. In October 2003, Spain's Abengoa and Cobra signed deals worth a combined $339 million with Libya's state-owned General Electricity Company (GECOL) to expand and upgrade the country's power transmission and substation infrastructure to meet the country's surging demand. There are also plans to link Libya's power network with those of Egypt, Tunisia, and possibly other countries in Africa.

COUNTRY OVERVIEW

President (Chief of State): Mu'ammar Qadhafi (since September 1, 1969)
Prime Minister: Shukri Muhammad Ghanem (since June 2003)
Independence: December 24, 1951 (from Italy)
Population (2003E): 5.5 million
Location/Size: North Africa/1,775,500 sq km (685,524 sq mi), slightly larger than Alaska
Major Cities: Tripoli (capital), Benghazi, Misurata
Languages: Arabic; Italian and English widely understood in major cities

Ethnic Groups: Arab (97%)
Religions: Sunni Muslim (97%)

ECONOMIC OVERVIEW
Secretary of the General People's Committee for Economy and Trade: Abd al-Qadir Bilkhayr
Currency: Libyan Dinar (LD)
Exchange Rate (1/6/04): US$1=1.36 LD
Gross Domestic Product (GDP) (2002E; Purchasing Power Parity exchange rate): $33.4 billion

Real GDP Growth Rate (2002E): -0.2%-1.5% **(2003E):** 2.7%-3.8% **(2004F):** 2.3%-2.6%
Inflation Rate (consumer prices, 2003E): 1.7%-4.0% **(2004F):** 1.9%-3.5%
Main Destinations of Exports (2002E): Italy (43%), Germany (14%), Spain (14%), Turkey (7%)
Main Origins of Imports (2002E): Italy (26%), Germany (10%), South Korea (7%), UK (7%)
Merchandise Exports (2003E): $13.9 billion **(2004F):** $10.3 billion
Merchandise Imports (2003E): $3.9 billion **(2004F):** $4.2 billion
Merchandise Trade Balance (2003E): $10.0 billion **(2004F):** $6.1 billion
Major Export Products: Crude oil, refined petroleum products, natural gas
Major Import Products: Manufactured goods, food and primary products
Total External Debt (non-military) (2001E): $4.4 billion
International Reserves (12/03E): $22.5 billion (60 months worth of import cover)

ENERGY OVERVIEW
Chairman of the National Oil Company: Abdel-Hafez Zleitni
Proven Oil Reserves (1/1/04E; Oil and Gas Journal): 36.0 billion barrels
OPEC Crude Oil Production Quota (effective 11/1/03): 1.31 million bbl/d
Crude Oil Production Capacity (2003E): 1.43 million bbl/d
Oil Production (2003E): 1.48 million barrels per day (bbl/d), of which 1.42 million bbl/d was crude oil, and 65,000 bbl/d was natural gas liquids
Oil Consumption (2003E): 227,000 bbl/d
Net Oil Exports (2003E): 1.25 million bbl/d
Major Oil Customers (2002E): Italy, Germany, Spain, and France combined account for around three-quarters of Libya's oil exports; other customers include Austria, Greece, Britain, and Switzerland
Net Oil Export Revenues (2003E): $13.4 billion **(2004F):** $12.9 billion
Net Oil Export Revenues/Total Export Revenues (2003E): 96%
Crude Oil Refining Capacity (1/1/03E): 343,400 bbl/d
Natural Gas Reserves (1/1/03E; Oil and Gas Journal): 46.4 trillion cubic feet (Tcf)
Natural Gas Production (2001E): 218 Billion cubic feet (Bcf)
Natural Gas Consumption (2001E): 191 Bcf
Electric Generation Capacity (2001E): 4.6 gigawatts (100% thermal)
Net Electricity Generation (2001E): 20.2 terawatthours

ENVIRONMENTAL OVERVIEW
Total Energy Consumption (2001E): 0.65 quadrillion Btu* (0.16% of world total energy consumption)
Energy-Related Carbon Emissions (2001E): 12.5 million metric tons of carbon (0.2% of world carbon emissions)
Per Capita Energy Consumption (2001E): 120.1 million Btu (vs US value of 341.8 million Btu)
Per Capita Carbon Emissions (2001E): 2.3 metric tons of carbon (vs US value of 5.5 metric tons of carbon)
Energy Intensity (2001E): 23,607 Btu/$1995 (vs US value of 10,736 Btu/$1995)**

Carbon Intensity (2001E): 0.45 metric tons of carbon/thousand $1995 (vs US value of 0.17 metric tons/thousand $1995)**
Fuel Share of Energy Consumption (2001E): Oil (69.2%), Natural Gas (30.8%)
Fuel Share of Carbon Emissions (2001E): Oil (71.5%), Natural Gas (28.4%)
Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified June 14th, 1999). Not a signatory to the Kyoto Protocol.
Major 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 International Environmental Agreements: A party to Conventions on Desertification, Marine Dumping, Nuclear Test Ban and Ozone Layer Protection. Has signed, but not ratified, Biodiversity, Climate Change and Law of the Sea.

* 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 based on OECD Purchasing Power Parity (PPP) figures

OIL AND GAS INDUSTRIES
State Oil Companies: *Libyan National Oil Company* (NOC) - Manages the state-owned oil industry and controls more than half of Libya's oil production, *Oilinvest* - Manages all international investments
Foreign Energy Company Involvement: Canadian Occidental, CNPC, Eni, Husky Oil, Nimr Petroleum (Saudi Arabia), OMV, PanCanadian; Pedco (South Korea), Petrobras, PetroCanada, Petronas (Malaysia), Red Sea Oil Corp. (Canada), Repsol YPF, Shell, Total, and Wintershall (Germany)
Major Oil Ports: Es Sider, Marsa el-Brega, Tobruk, Ras Lanuf, Zawiya, Zuetina
Major Oil and Gas Fields: Amal, el-Bouri, Bu Attifel, Defa-Waha, Elephant, Kabir, Mabruk, Murzuq, Nasser, Omar, Sarah, 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 (crude oil capacity): Ras Lanuf (220,000 bbl/d), Az-Zawiya (115,000 bbl/d), Brega (8,400 bbl/d)

Sources for this report include: Africa News; Africa Oil and Gas; AFX European Focus; Agence France Presse; AP Worldstream; BBC Summary of World Broadcasts; Business Report; Canada NewsWire; CIA World Factbook; Deutsche Bank; Dow Jones Interactive; Dow Jones Newswires; Economist Intelligence Unit ViewsWire; Energy Day; Financial Times Energy Newsletters; Global 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.

LINKS

For more information on Libya, please see these other sources on the EIA web site:
EIA - Historical Energy Data on Libya
OPEC Revenues Fact Sheet

Links to other U.S. government sites:
CIA World Factbook - Libya
U.S. Treasury Department's Office of Foreign Assets Control
Iran-Libya Sanctions Act Extension
U.S. State Department's Consular Information Sheet - Libya
Library of Congress Country Study on Libya

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