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## Arab Maghreb Union

The Arab Maghreb Union (AMU), which includes Mauritania, Morocco, and Tunisia (note: due to their size and importance, [Algeria](#) and [Libya](#) are covered in separate reports), is an important oil and gas producer, exporter, and transit center to southern Europe. Natural gas production from the region is increasing rapidly, and new pipelines to Spain and Italy are being planned.

*Note: Information contained in this report is the best available as of February 2004 and is subject to change.*

### MAURITANIA

Mauritania's real gross domestic product (GDP) grew an estimated 5.3% in 2003. Despite this rapid economic expansion, Mauritania remains by far the poorest country in the AMU. The country's per capita income is only \$441, 75% lower than the AMU average. Almost 30% of the population lives on **less than \$1 per day**, while 69% lives on less than \$2 per day. Mauritania suffers from many social and economic problems. These include poor [adult literacy](#), high infant mortality, and a rapidly growing population. Despite legal prohibitions, there continue to be [reports of slavery](#) in Mauritania.

Mauritania has pursued macroeconomic reforms that have succeeded in stabilizing the country's economy and reducing its debt burden. Inflation is estimated to have risen from 3.9% in 2002 to 5.1% in 2003, but is forecasted to decline to only 1.0% in 2004. Accompanying the stabilization reforms have been efforts to liberalize the economy, which have included several significant privatizations. In 2001, the telecom industry was privatized, and in 2002, four companies (ONE of Morocco, Union Fenosa, Vivendi, and Anglo-American) submitted bids on the country's state power company.

As a consequence of its reform efforts, Mauritania has attracted significant amounts of donor funds.



Mauritania also completed (in June 2002) the World Bank/International Monetary Fund (IMF) [heavily indebted poor countries \(HIPC\)](#) initiative. This led to debt relief of \$1.1 billion, which almost halved Mauritania's net debt burden. Completing the requirements of the HIPC initiative allowed Mauritania to cut its debt service payments substantially—from about \$88 million in 1998 to \$35 million in 2003. Despite its improving economic environment, Mauritania remains vulnerable to several sources of instability. With an economy strongly reliant upon primary products (mining, fishing, and agriculture), fluctuations in international markets can have a profound impact on Mauritania. The country is also vulnerable to external shocks like extreme weather. For example, in January 2002, torrential rains caused significant damage to Mauritania's agricultural sector, which employs most people in the country.

There is increasing opposition to President Maaouya Ould Sid'Ahmed Taya, who took power in a military coup in 1984. Taya became an elected leader in 1992 and subsequently won reelection in 1997. Both of these early elections were criticized by outside observers. Taya was reelected in November 2003 after a year in which he cracked down on Islamist leaders during the Iraq war and successfully put down a coup attempt. (The coup leaders were not caught.) The jailing of opposition leaders marred the November election. Following his contested victory, Taya's government had the most popular opposition presidential candidate, Mohamed Khouna Ould Haidalla (who was the leader Taya deposed in 1984), arrested for plotting a coup with Libyan backing. After a month long trial, Haidalla was convicted, but received a suspended sentence.

### **Energy**

Until recently, Mauritania was not thought of as a promising hydrocarbons area. This has now changed. On January 7, 2004, the Australian oil and gas company Woodside announced that its offshore [Chinguetti oilfield](#) was commercial. The field is located in deep water near the capital of Nouakchott, and test results suggest that it has reserves of approximately 100 million barrels of oil. Woodside estimates that the field will begin to produce between 50,000 and 75,000 barrels per day (bbl/d) in 2005 or 2006.

In addition to Chinguetti, Mauritania possesses several other promising fields. The Tiof find, which is near Chinguetti, is estimated to hold 300 million barrels of crude oil, while the Banda field may also contain significant reserves. In combination, the total discovered volumes of offshore oil exceed 800 million barrels, making Mauritania a fairly significant hydrocarbon province, especially since the country has only been lightly explored. Foreign oil companies operating offshore of Mauritania include: [Dana Petroleum](#); [Roc Oil Company](#); [Hardman Resources](#); and Woodside Petroleum. In June 2003, the Mauritanian government signed an agreement with Total, giving the French company the right to explore for oil in the basin of Taoudeni, which is located in the Mauritanian desert.

In 2001, oil accounted for the overwhelming majority (99%) of Mauritania's total commercial energy consumption (0.05 quadrillion Btu). All of this oil was imported. Mauritania also consumes a significant amount of "non-commercial" (i.e., wood, biomass) energy. Unfortunately, reliable data are not available.

### **MOROCCO**

Morocco is a constitutional monarchy in which the King possesses much more authority than either the judiciary or the legislature. During the 1990s, a process of slow democratization began under King Hassan II, who had ruled Morocco since 1961. After Hassan II died on July 23, 1999, his 36-year old son, Mohammed VI, succeeded him in a smooth transition of authority. Mohamed VI has continued and increased the pace of economic and political reforms. The September 2002 Parliamentary elections went smoothly and without interference from the government. September

2003 local elections also occurred without incident.

In 2003, Morocco's real GDP increased an estimated 5.2%. Morocco's economy grew especially rapidly in 2003 because of ample rainfall. The disproportionate importance of the agricultural sector, which employs 43% of the population, makes Morocco's economy vulnerable to external shocks, like extremely good (or bad) weather. The expected return of normal weather patterns has led to forecasted GDP growth of 3.5% in 2004. Tourism, which had been growing in economic importance, has been hard hit by the September 11 terror attacks, the Iraq war, and the May 2003 bombings in Casablanca. Barring new terrorist attacks in North Africa, Morocco's tourism sector is expected to rebound in 2004. Other important Moroccan economic sectors include mining (Morocco has the world's largest phosphate reserves). Related industries include the production of fertilizers and phosphoric acid. Morocco also has an expanding manufacturing base.

Morocco's per capita income in 2003 was \$1,531, which is slightly under 75% of the AMU average. [The U.S. State Department](#) reports that Morocco suffers from a number of socioeconomic problems. These include poverty, urban overcrowding, inadequate housing infrastructure, and a low literacy rate, especially among women. While all of these issues require attention, unemployment remains the principal socioeconomic problem in Morocco. The unemployed and underemployed make up an estimated 23% of the Moroccan workforce, and the problem is worsening. An estimated 300,000 young workers enter the Moroccan job market every year, while only 200,000 new jobs are created annually. Unemployment disproportionately impacts women, the young, and the college educated.



Morocco has successfully maintained macroeconomic stability the past few years. Morocco's inflation rate (consumer prices) is expected to be 1.2% in 2003, down from 2.8% in 2002. It is forecast to rise back to 2.3% in 2004. The Moroccan monetary authorities are expected to work to keep the inflation rate differential between Morocco and the Eurozone in check so as to maintain the competitiveness of Moroccan exports.

Controlling fiscal expenditures remains a priority for Morocco. Wider budget deficits are emerging, reflecting a bloated public sector. The public wage bill accounts for more than half of government expenditures. In part this reflects the decision to expand the civil service to provide jobs for the well-educated. The Moroccan government also has trouble cutting spending because it is a leading provider of needed investment capital. Morocco has tried to cut its deficits through the privatization of state-owned enterprises (SOEs). In 1993, 114 SOEs were selected for possible privatization. As of January 2004, half of these had been sold. Particularly significant privatizations include the state tobacco company, the state car company, and 35% of Maroc Telecom (further liberalization of the telecom sector is planned).

Morocco has pursued other economic liberalization efforts including a reform program supported by significant lending from the World Bank and International Monetary Fund (IMF) since the early 1980s. This reform program has led Morocco to liberalize its foreign exchange regime, lower tariffs and other trade barriers, reform the banking system, partially restrain government spending, reduce the foreign debt burden (in part through "debt-for-equity" swaps, in part through refinancing), and encourage foreign investment (now permitted in most sectors of the economy). Morocco also has signed several agreements with the European Union on economic cooperation, including one establishing a free trade zone for industrial goods over a 12-year transition period. Morocco is a partner country of the [European Free Trade Agreement](#).

As of early 2004, the [decades-old dispute](#) between Morocco and the Polisario Liberation Front over the Western Sahara region continues. A referendum on the future of the territory, a former Spanish colony that has rich phosphate deposits, was scheduled for January 1992 under [U.N. auspices](#). The referendum has yet to be held. The key problem is deciding who is eligible to vote. In January 2001, the Polisario said that it remained in a state of war with Morocco over the Western Sahara. Throughout 2002, the United Nations deliberated over the validity of oil exploration contracts concerning areas offshore of Western Sahara. The UN did not officially prohibit such activities, but the legality of doing so is likely to remain in question until the status of Western Sahara is permanently settled.

### **Oil and Natural Gas**

According to January 2004 estimates, Morocco has proven oil reserves of 1.6 million barrels and gas reserves of 43 billion cubic feet (Bcf). Morocco may have additional hydrocarbon reserves, as many of the country's sedimentary basins -- especially those offshore on the Atlantic continental shelf or in deep waters off the shelf -- have not been explored. In 2000, an oil and gas discovery (of unknown magnitude) in the Talsint region near the border with Algeria raised hopes that Morocco could add another important asset to its economy, help cut the country's energy import bill (now around \$1-\$1.5 billion per year) and also attract new investment to the country. Subsequent tests, however, have not been encouraging.

Besides Talsint, other areas of Morocco are being explored, especially offshore. Foreign firms engaged in these explorations include: [Petronas](#), [Kerr-McGee](#), [Shell](#), Total, and [Energy Africa](#). Petronas recently won an 8-year offshore exploration contract for 5,400 square miles along the Atlantic Coast. There was a great deal of [controversy](#) over Morocco's 2001 exploration contracts with Total and Kerr-McGee, because they concerned areas offshore of the disputed Western Sahara province. This area is believed to contain the most viable hydrocarbon reserves in Morocco. The de facto implication of a ruling by the United Nations is that exploration and exploitation cannot take place until Western Sahara's status is formally settled.

Currently, Morocco produces [small volumes](#) of natural gas and oil in the Essaouira Basin on the coast and small amounts of gas from the Gharb Basin in the north. Domestic output does not satisfy Morocco's energy demand. Morocco is the largest energy importer in northern Africa, with the total cost of its imports fluctuating between \$1 billion and \$1.5 billion per year. In 2003 and 2004, the costs of oil imports are expected to grow due to higher than expected prices. In an effort to reduce oil prices due to supply shortages, the Moroccan government announced in February 2003 that foreign companies could import oil prices without having to pay import tariffs. In March 2000, Morocco modified its hydrocarbons law in order to, among other things, offer a 10-year tax break to offshore oil production firms and to reduce the government's stake in future oil concessions (to a maximum of 25%). The entire energy sector is due to be liberalized by 2007.

Morocco is a transit center for Algerian gas exports to Spain and Portugal. These are transported

across the Strait of Gibraltar via the 300-350 Bcf/year Maghreb-Europe Gas (MEG) pipeline. Gas from the MEG pipeline will be used in to power Morocco's third independent power project (IPP) in Tahaddart, near Tangier.

As of January 2004, Morocco has two refineries (Samir Oil Refinery at Mohammedia and Sidi Kacem) with a combined capacity of 154,901 bbl/d. This figure is misleading because in late November 2002 severe flooding led to a massive fire at the Samir Refinery. The Samir refinery had produced around 80%-90% of the country's refined petroleum products. In early December 2002, Samir officials said that full repairs could cost \$150 million and take between 9 months and 13 months. In February 2003, the refinery continued to operate at only 43% of capacity.

Another source of petroleum products is a joint venture by International Petroleum Investment Company (IPIC) of Abu Dhabi and Spanish Energy Company Cepsa. In October 1998, the two firms formed a 50-50 joint venture called Cepsa Maghreb to market and distribute petroleum products and LPG in Morocco. The French Rubis group has an LPG import terminal and tank farm near Casablanca. According to [company documents](#), the company expects its business in Morocco to grow.

### **Coal and Electricity**

The vast majority of Morocco's electricity is generated in thermal power plants that burn oil and coal. All of the oil is imported, and most of the coal comes from South Africa (the United States and Columbia are also key suppliers). Morocco produces a small and declining amount of coal from a mine at Jerada.

Morocco's electrical sector has traditionally been the responsibility of the state-owned Office national de l'electricite (ONE). ONE was reorganized in 1995, after which it regained profitability. Due to a growing population and economic development, Morocco's electricity demand is increasing rapidly. Between 1980 and 2001, electricity consumption grew an average of 5.7% per year. Power shortages and a desire to control public spending have led the Moroccan government to make more use of the private sector to meet the country's power needs. The increasing commonness of these arrangements is expected to cause the state's share of electricity generation to decline to 40% by 2020. The entire electricity sector is expected to be liberalized by 2005, though ONE has said there will be two systems, one regulated and one free. ONE will continue to be solely responsible for distribution and transmission.

In 2001, Morocco had an installed generating capacity of 4.1 megawatts (MW). The country's two largest electricity power station are located at Mohammedia and Jorf Lasfar; both are coal fired. Jorf Lasfar became Morocco's first privately operated power station in 1997, when it was taken over by a U.S.-Swiss consortium. As part of the transfer, the new owners agreed to build two additional units at Jorf Lasfar, bringing the plant's total installed capacity to almost 1,400 MW. Construction finished in 2001.

In addition to the expansion at Jorf Lasfar, Morocco is engaging in a wide ranging campaign to increase its generating capacity to cope with the consistent growth in electricity demand. As part of the Moroccan government's plan, a new, \$500 million, 350-400 MW [combined-cycle power plant](#) is planned at Tahaddart, near Tangier in northern Morocco. The German power company Siemens, ONE, and the Spanish energy firm Endesa are expected to run the plant. Other significant projects include a 450-MW pumped-storage facility at Beni Mellal, and a 25-MW plant in Western Sahara. In addition to the Beni Mellal facility, ONE is considering [another pumped storage plant](#) in the Azilal region south of Rabat.

Renewable energy plays a very key role in the \$3.4 billion energy development plan that ONE announced in January 2004. The plan aims to provide 80% of rural areas with electricity by 2008, while increasing the share of renewables from 0.24% in 2003 to 10% in 2011. The plan specifically calls for two new wind projects, as well as a 220-MW thermo-solar facility in Ain-Mokhtar. One of the wind power facilities would be located in Essaouira (60 MW), while the other would be located close to Tangiers (140 MW).

In addition to the projects specifically cited in the plan, Morocco has other possible renewable resources that could be developed. According to [MBendi](#), Morocco has four perennial rivers and many dams with hydroelectric potential. In May 2002, a consortium led by Total Energie won a contract to supply 16,000 rural homes with solar power. In January 2004, a similar contract was awarded to Apex-BP to supply and install solar power systems to provide power to 20,000 rural users in Chichaoua province. Morocco also has expressed interest in nuclear power for desalination and other purposes. In September 2001, the government signed an agreement with the United States establishing the legal basis for construction of a 2-MW research reactor just east of Rabat.



Morocco has also signed other bilateral energy-related treaties with the United States. In June 2002, Morocco and the United States signed a convention on development of "clean" energy sources. This complemented the two countries' October 2000 agreement to cooperate on issues related to energy efficiency and renewable energy. Morocco is gradually integrating its electrical grid with those of its neighbors in both Africa and Europe. The [first step toward Maghreb integration](#) occurred in 1975, when Algeria, Tunisia and Morocco established the Maghreb Electricity Committee. Libya and Mauritania joined in 1989. Actual physical integration initiatives did not begin until the 1990s. In December 2003, the capacity of Morocco's connection with Spain (established in 1998) doubled, from 700 MW to 1,400 MW. In December 2001, Endesa became the first Spanish company to import electricity from Morocco, while a deal was signed with Spain's Union Fenosa as well.

In May 2003, Moroccan representatives met with Energy ministers from other European and Mediterranean countries, to discuss the feasibility of integration their electricity markets along the same lines as occurred in the European Union. Tunisia, Algeria, and Morocco acknowledged that they would like to eventually link their electricity systems to the E.U. single energy market.

### TUNISIA

Tunisia is a stable republic presided over by President Zine al-Abidine Ben Ali, who rules in conjunction with his party, the Constitutional Democratic Assembly (RCD). At present, Ben Ali is in the last year of his third five year term. In April 2002, Tunisia's parliament passed a new constitution making a fourth term possible. The RCD now supports economic liberalization, although at a pace which will not provoke popular unrest. In addition to economic reforms, Ben Ali has also pursued a process of

democratization, legalizing opposition parties and guaranteeing them 20% of Parliamentary seats. [Critics](#) note, however, that substantial progress can still be made in the areas of curbs on the press, human rights, and separation of powers.

Tunisia's real gross domestic product (GDP) is estimated to have grown 5.7% in 2003, up markedly from 1.7% in 2002. Rapid economic growth (5.5%) is forecasted to continue in 2004. Tunisia has averaged over 5% growth per year since 1997. The slowdown in 2002 reflects the impact of a number of adverse shocks, including a sharp reduction in tourism following September 11 and a subsequent terrorist attack in Tunisia, worsening exports, and a fourth consecutive year of drought.

Tunisia has traditionally maintained high tariffs to protect domestic industries. The International Monetary Fund (IMF) urges that these be reduced as part of Tunisia's "second-generation reforms." These are being lowered with regards to Europe as part of Tunisia's 1995 [agreement with the European Union](#). The [African Development Bank](#) describes Tunisia as dependent upon the European market. In addition to integrating its economy into Europe's, Tunisia has pursued closer relations with its North African neighbors. In May 2001, Egypt, Jordan, Morocco and Tunisia [agreed to set up a free trade zone](#) ahead of the 2010 target for trade barriers to end in the Euro-Mediterranean area. The Great Arab Free Trade Zone is expected to eventually encompass 10 Arab nations.

For the past 10 years, Tunisia has maintained a stable macroeconomic environment. According to the [Heritage Foundation's Index of Economic Freedom](#), inflation averaged only 2.6% between 1993 and 2002. This trend continued in 2003, when consumer prices were estimated to have risen 2.7%. The inflation forecast for Tunisia in 2004 suggests that prices will rise 2.4%.

Privatization of Tunisia's state-owned enterprises (SOEs) is moving ahead slowly, despite President Ben Ali's call in 2001 for an acceleration in the process. Since 1987, around 160 SOEs have been at least partially privatized. In the long run, Tunisia sees privatization as a way of creating jobs by making its economic climate more attractive to investors. However, the mass firings that might accompany rapid privatization could provoke unrest given that Tunisia's unemployment rate remains at high levels (officially 15%, but likely higher). Tunisia faces a very significant employment challenge. Around 55% of the work force is under the age of 25, meaning that large quantities of new jobs must be created. For 2002-2006, the government is looking to increase domestic and foreign investment, with a target of \$34 billion for the period.

## Oil

Tunisia has [modest proven](#) oil reserves of 308 million barrels. In 2003, Tunisia produced around 66,000 barrels per day (bbl/d) of oil, nearly all of which was crude. This represents an 8.6% decline from 2002, and a 45% decline from the country's peak oil output of 120,000 bbl/d between 1982 and 1984. Meanwhile, domestic petroleum demand is increasing, and the country's modest domestic production capacity is proving unable to meet it. Tunisia became a net oil importer in 2000 for the first time in over 20 years. Few new discoveries have been made in recent years. [Alexander's Gas and Oil Connections](#) says that Tunisia ought to be able to supply at least part of its own energy needs for the next decade, but warns that significant production thereafter will be contingent on new discoveries.

Tunisia's refining capacity is low; its only refinery -- at Bizerte -- has a production capacity of 34,000 bbl/d. Because of its [relative lack of refining capabilities](#), Tunisia exports crude oil and imports refined products. The Tunisian government has solicited bids for a new refinery to be built at Sakkira that would use imported oil.

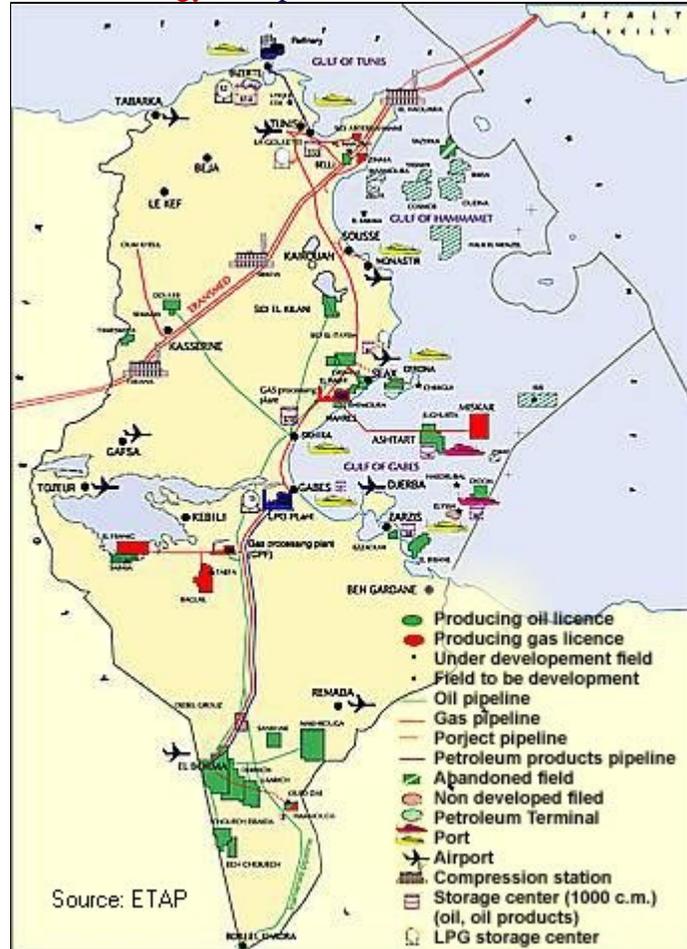
Tunisia's largest oilfield is El Borma, discovered in 1964 near the Algerian border, and now operated by ENI-Agip. Asstart is the only other oilfield with proven and estimated reserves over 100 million barrels. It is operated by Tunisia's state-owned oil company Enterprises Tunisiennes d'Activites Petrolieres (ETAP). Almost 75% of Tunisian oil production comes from these two fields. Much of the remainder comes from the Sidi El Kilani and Al Manzah fields. Production at all of the first three fields has been declining steadily. The Al Manzah field started production at 4,000 bbl/d in October 2000, with [Canadian firm Centurion Energy](#) the operator.

The Tunisian government and ETAP are trying to attract foreign firms to fund exploration of offshore areas in the Gulf of Hammamet and off the north coast, as well as onshore in the northwest and other parts of the country. The Tunisian government would also like to attract foreign firms interested in developing the country's smaller fields, which ETAP traditionally has viewed as uneconomic. To achieve this, Tunisia reformed its hydrocarbons laws in August 2000, in hopes of attracting just such upstream investment. One of the most important provisions is a reduction in the tax rate from 75% to 50% for foreign firms if ETAP takes a 40% share of the concession. Royalties are fixed at 10% for oil and 8% for gas.

Recent evidence suggests that Tunisia is successfully attracting new foreign investment. In December 2003, Tunisia licensed the Austrian firm [OMV](#) to explore a 770 square miles block in the southern part of the nation. An international consortium led by the Italian oil giant ENI (35%) drilled a successful exploration well in the Borj el Khadra prospect in the south. Other stakeholders include: [Pioneer Natural Resources](#) (28%), UK independent [Paladin Resources](#) (7%), and ETAP (30%). Production is expected to begin in early 2004, and will complement the consortium's existing production in its nearby Adam field.

There are also quite a few other new hydrocarbon projects. A partnership between a Tunisian and a Kuwaiti oil firm is drilling an offshore well east of Tunisia that they expect contains reserves of up to 6 million barrels of oil. Sweden's [PA Resources](#) is involved in onshore development and exploration in the Douleb field. As of September 2003, the field was producing around 600 barrels per day. [Lundin Petroleum](#), another Swedish firm, operates a number of offshore fields, some with possibly significant reserves. Other foreign firms involved in hydrocarbon operations in Tunisia include: [Anadarko](#), Samedan Oil, [Petro Canada](#), and [Total](#).

In addition to increasing production for Tunisia, ETAP is pursuing overseas exploration and production. The company is working in Syria with Preussag of Germany to develop small oilfields and has signed an oil cooperation agreement with Iraq. The legality of the latter in post-Saddam Iraq remains unknown. ETAP has a joint venture with Sonatrach of Algeria to explore a border area and



also with Libya's National Oil Company exploring an offshore block.

Tunisia has [a number of oil terminals](#) on the Mediterranean coast. The largest of these is La Skhirra, on the Gulf of Gabes. A 22,000-bbl/d, 78-mile pipeline between the Sidi El Kilani oilfield and La Skhirra was inaugurated in March 2001. La Skhirra also handles about 22% of Algeria's oil exports. It is linked to the Illizi Basin oilfields in southern Algeria by a 480 mile pipeline. Other Tunisian oil terminals include the Ashtart offshore terminal, Gabes, Zarzis, and Bizerte.

### **Natural Gas**

Tunisia is increasingly turning to natural gas as a way of coping with steadily increasing domestic demand for energy. Tunisia has 2.8 trillion cubic feet (Tcf) of proven natural gas reserves, with around two-thirds located offshore. In 2000, Tunisia produced 66 billion cubic feet (Bcf) of natural gas. Output rose significantly to 79 Bcf in 2001. Demand growth was even faster; between 2000 and 2001, Tunisia's consumption of natural gas grew from 109 Bcf to 135 Bcf (24%). Between 1990 and 2001, demand for natural gas grew almost 9% per year. Much of the demand growth comes from the electricity sector, but industrial and domestic use of natural gas has also increased.

An absolute majority of Tunisia's gas output comes from the Miskar non-associated gas field in the offshore Amilcar permit. Miskar is located about 80 miles offshore in the Gulf of Gabes. The field was discovered in 1975 by Elf, but is now fully owned and operated by [British Gas \(BG\)](#), the largest investor in Tunisia's energy sector. According to BG, the field contains 1.5 Tcf of reserves. In 2002, Miskar, produced 167 million cubic feet per day (Mmcf/d) of gas, which accounted for around 60% of Tunisia's total gas demand. In collaboration with the Tunisian government, BG is investing in expanding the output of the Miskar field. In total, BG intends to invest \$450 million between 2000 and 2009.

BG also holds two other exploration contracts for areas in the Gulf of Gabes. In August 2002, BG announced that it had found oil at the Hasdrubal South West-1 field. BG had already found the province commercially viable for natural gas. The Tunisian government has decided to delay gas production from the Hasdrubal field until 2007, in advance of the decline of the Miskar field. BG is planning on developing the Hasdrubal natural gas and gas condensate field, also located in the Gulf of Gabes, at a cost of \$330 million over a 12-year period. BG has a Miskar gas sales contract with the Tunisian State electricity and gas company, Société Tunisienne de l'Electricité et du Gaz (STEG), giving it the right to supply at least 230 Mmcf/d on a long-term basis.

Tunisia has four other producing natural gas fields (El Franning, El Borma, Baguel, and Zinnia). Together, these relatively small fields account for almost all of the remainder of domestic production.

The 20-year old Trans-Mediterranean (TransMed) pipeline, with 850-Bcf-per-year-capacity, transports [Algerian](#) natural gas to Sicily, crossing the Mediterranean seabed from Cap Bon. Tunisia receives royalties (5.25%-6.75% of the gas' value, in cash or in kind) from the pipeline as payment for access through its territory. In October 2003, Tunisia and [Libya](#) agreed on a pipeline plan that would provide gas to Southern Tunisia. The pipeline should be finished in 2005.

### **Electricity**

Tunisian power demand is growing rapidly, an estimated 7% annually. Much of this growth reflects the increasingly comprehensive nature of the Tunisian grid. Recent census figures indicate that around 95% of Tunisian homes had access to electricity in 1999, up sharply from 86% in 1994. The electrical grid now is estimated to approximately 90% of the country.

The vast majority of Tunisian electricity is generated by fossil fuel plants. Tunisian overall power generating capacity was 2,016 MW in 2001. At that time, 97% of Tunisian power generating capacity came from thermal power plants, with the remainder accounted for by hydroelectric plants.

Until 1996, STEG had a monopoly over power production and still generates over 90% of Tunisia's power. The first independent power plant, a \$261 million, 471-MW, combined cycle (natural gas and diesel-fired) power project went on-line at Rades in 2002. It is operated by a consortium comprised of U.S.-based [PSEG](#) (60%), and Japan's Marubeni (40%) on a 20-year build-own-operate-transfer (BOOT) basis. STEG provides the feedstock and buys the electricity, also maintaining its monopoly over distribution and pricing. In July 2003, a 27-MW associated gas plant commenced commercial operations. It is operated by [CME Energy](#) and uses associated gas from the El Biban, Zarzis oilfields. Previously, the gas was flared.

In addition to these already established independent power producers, Tunisia is encouraging other projects in order to reach its goal of an installed capacity of 3,540 MW by 2006. A key part of this plan is the \$200 million, 500-MW power plant ([Barca Power](#)) that BG is planning to build near Sfax. It will utilize natural gas from the Miskar and, eventually, Hasdrubal fields. BG will likely partner with STEG or ETAP, and the facility should be operational in 2006. At the same site as the power plant, BG plans to build a Liquefied Petroleum Gas (LPG) plant that will serve the Tunisian market.

The Tunisian government is investing \$687 million in the country's energy sector during 2004. At least half of the investment will go to increasing electricity production in existing thermal plants, with much of the rest directed at facilitating the search for additional oil and gas deposits. Tunisia also is paying considerable attention to the development of renewable energy resources. To this end, the country has received considerable assistance from international agencies. In May 2003, the Tunisian announced that 12 additional windmills would be added to the wind farm in Hawariya, bringing total capacity to 20 MW. Separately, the [Global Environment Facility \(GEF\)](#) is providing \$10.5 million to build windmills in Tunisia. GEF expects that its initial investment will be followed by [an additional \\$106 million](#) in private funding in order to generate 100 MW. The German Technical Cooperation Agency also is providing money for wind power.



In December 2003, the [African Development Bank](#) approved a loan of \$98.3 million to finance a project to rehabilitate and modernize Tunisia's power distribution network. In July 2002, the European Investment Bank (EIB) approved a 150 million Euro loan aimed at upgrading Tunisia's power transmission network. The Kuwait-based Arab Fund for Economic and Social Development announced in August 2003 that it would provide a \$100 million loan for the development of Tunisia's electrical network. Tunisia's power grid is in need of upgrading both to meet domestic demand as well as to increase reliability as part of Tunisia's ongoing integration into Europe's power grid. It already is linked to Algeria's electrical grid, and efforts aimed at connecting to Libya's have begun. The two networks should be connected by the end of 2004. When that has been accomplished, an integrated North African power grid will stretch from Morocco to Egypt.

Table 1. Economic and Demographic Indicators for the Arab Maghreb Union					
	Gross Domestic				

Country	Product (GDP), 2003E (Billions of U.S. \$)	Real GDP Growth Rate, 2003 Estimate	Real GDP Growth Rate, 2004 Projection	Per Capita GDP, 2003E	Population 2003E (Millions)
Algeria	\$70.6	7.4%	6.4%	\$2,253	31.8
Libya	\$20.5	3.8%	2.9%	\$3,627	5.7
Mauritania	\$1.2	5.3%	5.7%	\$441	2.9
Morocco	\$46.1	5.2%	3.5%	\$1,531	30.1
Tunisia	\$25.0	5.7%	5.5%	\$2,529	9.9
Regional Total/Average	\$164.5	5.9%	4.9%	\$2,046	80.4

Sources: Global Insight

Country	Total Energy Consumption (Quadrillion btu)	Petroleum	Natural Gas	Coal	Nuclear	Hydro-Electric	Other Renewable Electric	Net Electricity Imports	Carbon Dioxide Emissions (Million metric tons of carbon)
Algeria	1.31	30.9%	67.7	1.4	0.0	0.0	0.0	-0.1	22.5
Libya	0.65	69.2%	30.8	0.0	0.0	0.0	0.0	0.0	12.5
Mauritania	0.05	99.2%	0.0	0.3	0.0	0.0	0.0	0.0	0.9
Morocco	0.48	70.4%	0.4	23.1	0.0	2.1	0.0	4.8	8.7
Tunisia	0.34	52.9%	46.0	0.9	0.0	0.0	0.0	0.0	5.8
Regional Total/Average	2.83	50.2%	44.1	4.7	0	0.3	0.0	0.8	50.4

Source: Energy Information Administration

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

Country	Crude Oil Reserves, 1/1/04 (Million Barrels)	Natural Gas Reserves, 1/1/04 (Billion Cubic Feet)	Coal Reserves (Million Short Tons)	Petroleum Production, 2003E (Thousand Barrels Per Day)	Natural Gas Production, 2001 (trillion cubic feet)	Coal Production, 2001 (Million Short Tons)	Electric Generating Capacity, 2001 (Gigawatts)	Crude Oil Refining Capacity, 1/1/04 (Thousand Barrels Per Day)
Algeria	11,314	160,000	44	1,050	2.8	0.03	6.0	450
Libya	36,000	46,400	0	1,400	0.2	0.0	4.6	343
Mauritania	0	0	0	0	0	0	0.1	0
Morocco	1.6	43	0	0.2	0	0.3	4.1	155
Tunisia	308	2,750	0	66	0.1	0	2.0	34
Regional Total/Average	47,624	209,193	44	2,516.2	3.1	0.33	16.8	982

Source: Energy Information Administration

*Sources for this report include: Africa News; Africa Research Bulletin; Agence France Presse; Alexander's Gas and Oil; Business Wire; CIA World Factbook 2003; CWC Africa Energy Alert; Economist Intelligence Unit; Financial Times; Global Insight; Mbendi; Nationmaster.com; Oil and Gas Journal; U.S. Energy Information Administration; U.S. State Department; World Markets Analysis Group.*

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## LINKS

For more information from EIA on Mauritania, Morocco, and Tunisia, please see:

[EIA: Country Information on Mauritania](#)

[EIA: Country Information on Morocco](#)

[EIA: Country Information on Tunisia](#)

Links to other U.S. government sites:

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

[CIA World Factbook 2003](#)

[Library of Congress -- Mauritania Country Study](#)

[U.S. State Department Consular Information Sheet on Mauritania](#)

[U.S. State Department Background Notes on Mauritania](#)

[U.S. Department of Energy's Office of Fossil Energy's International section - Morocco](#)

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