***March 2005***

Background | Oil | Natural Gas | Electricity | Profile | Links

# Algeria

*Algeria is important to world energy markets because it is a significant hydrocarbons producer and exporter. Algeria is a member of OPEC and an important, growing energy source for Europe.*

*Note: Information contained in this report is the best available as of March 2005.*


## BACKGROUND

Following years of civil war and continuing political unrest, Algeria now is experiencing a significant economic upturn, in large part aided by strong oil and natural gas export revenues. Real gross domestic product (GDP) growth is expected to reach 6.9% in 2005, following estimated growth of 6.1% in 2004. The sharp increase in oil export revenues that Algeria has enjoyed during the past few years has caused the country's foreign reserves to rebound sharply (to over $33 billion by late 2003, compared to $12 billion at the end of 2000), external debt to fall, and pressures on government finances to decrease.

Regardless of fluctuating oil revenues, structural reforms and fiscal discipline appear to remain important parts of the government's economic program, as urged by the International Monetary Fund (IMF). In January 2005, the IMF issued its annual "Article IV" assessment of the Algerian economy. The assessment was mostly positive, praising the progress that the Algerian government has made on economic reforms. The IMF report urged the Algerian government to continue its reform path, pointing out that high oil prices provided Algeria with an immediate opportunity to make progress on implementing reforms and addressing the country's many problems.

In late 2001, Algeria and the European Union (EU) reached an Association Agreement after years of negotiations, and the European Parliament ratified the deal in October 2002. Under the accord, Algeria will cut tariffs on EU agricultural and industrial products over the next 10 years, the EU will eliminate duties and quotas on many Algerian agricultural products. In December 2002, Algeria signed a cooperation pact with the European Free Trade Association (EFTA), providing for expanded and liberalized trade with EFTA members (Iceland, Liechtenstein, Norway, and

Switzerland). Algeria is also pursuing membership in the World Trade Organization, with the IMF Article IV assessment noting that the country had made good progress in this regard.

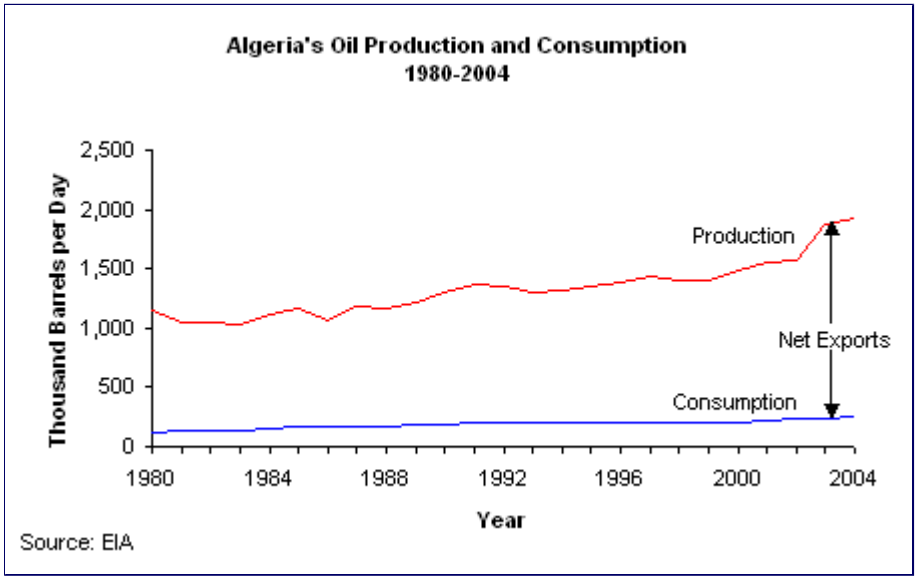
President Abdelaziz Bouteflika, elected President in 1999 and re-elected in 2004, has attempted to implement plans for national reconciliation and economic reform. More than 100,000 rebels, soldiers and civilians have died in Algeria's civil war, which began in 1992 following the coup that nullified the national election won by the Islamic Salvation Party. On July 13, 1999, President Bouteflika offered amnesty to rebel groups, and a national referendum subsequently approved the offer. Parliamentary elections were held in May 2002, resulting in a strong showing for the president's party, the FLN. Algeria's political and security situation has significantly improved over the past decade. International observers verified that Bouteflika's 2004 re-election, in which he won a landslide victory, was largely free and fair.

Despite the recent good news, Algeria continues to face serious economic, social, and political problems, especially high unemployment, continued political violence by Islamic fundamentalists, and the damaging effects of natural disasters. Successive government budgets have increased spending on social programs and economic development. Periodically, there have been protests by the country's restive Berber minority demanding greater autonomy, increased employment opportunities, and better living conditions. The unrest has centered on the Kabyle region of northeastern Algeria.

## OIL

### Overview

Algeria contains an estimated 11.8 billion barrels of proven oil reserves. With recent oil discoveries and plans for more exploration drilling, proven oil reserve estimates could climb upward in coming years. Algeria should also see a sharp increase in crude oil exports over the next few years, due to the rapid substitution of natural gas for oil in domestic energy consumption.




Analysts consider Algeria underexplored, even though the country has produced oil since 1956, and Algeria's National Council of Energy believes that the country still contains vast hydrocarbon potential. Over the last few years, there have been significant new oil and gas discoveries, largely by foreign companies: Algeria's oil sector, unlike that of most OPEC producers, has been open to foreign investors for more than a decade. Algeria hopes to increase its crude oil production capacity significantly over the next few years by attracting more foreign investment. Energy Minister Chekib Khelil has stated that his goal is to double the number of companies operating in Algeria, restructure the domestic oil industry, and establish new regulatory bodies independent of the Energy and Mining Ministry.

Sonatrach, owned by the Algerian government, dominates Algeria's oil sector. Through its

subsidiaries, the company has a domestic monopoly on oil production, refining, and transportation. However, Algeria has aggressively sought foreign investment in its oil sector, and the share of Algeria's oil production controlled by foreign companies has increased steadily over the past several years; in the third quarter of 2004, foreign companies controlled some 44% of Algeria's crude oil production. Algeria's oil sector, though, is not completely open to foreign companies. All foreign operators must work in partnership with Sonatrach, with Sonatrach usually holding majority ownership in these production-sharing agreements.

*Sector Reforms*
In late 2001, President Boutaflika introduced an important hydrocarbons reform bill. The bill would reform Sonatrach along corporate lines, allow foreign operators to act independently of Sonatrach, and possibly private Sonatrach or its subsidiaries. Progress on the bill stalled in 2003, when labor unions demonstrated against the law and Parliament rejected it. The Algerian government re-introduced the hydrocarbons bill in 2004, and meetings between Algeria's largest labor union, UGTA, and the government seemed to produce some consensus. In February 2005, the president's Council of Ministers approved the hydrocarbon bill, which included some amendments but mostly resembled the 2001 proposal. If Parliament approves the bill this time, and political analysts predict that it will because of these new amendments, then the hydrocarbons reform bill will become national law. Passage of the hydrocarbons reform would be an important, concrete step towards Algeria's goal of increasing crude oil production.

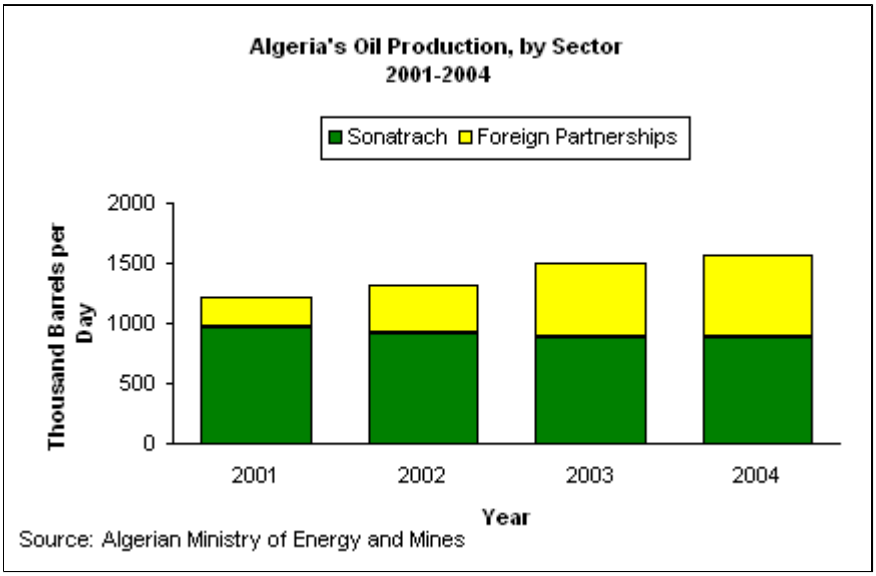
**Exploration and Production**
Algeria's average crude oil production during 2004 was 1.23 million barrels per day (bbl/d). Together with 445,000 bbl/d of lease condensate and 250,000 bbl/d of natural gas plant liquids, Algeria averaged about 1.93 million bbl/d of total oil production during 2004, up steadily from 1.86 million bbl/d in 2003 and 1.57 million bbl/d in 2002. Algeria's crude oil production is running well above its OPEC quota of 862,000 bbl/d (as of November 1, 2004), though the OPEC quota only applies to crude oil production. In coming years, it is likely that Algeria's oil production capacity will rise, as the country plans to increase investments in exploration and development efforts. Algeria's production goal is 1.5 million bbl/d of crude oil by 2005 and 2.0 million bbl/d by 2010, a level it will likely reach at current levels of production growth.

With domestic oil consumption of 246,000 bbl/d in 2004, Algeria had estimated net oil exports (including all liquids) of 1.68 million bbl/d. Approximately 90% of Algeria's crude oil exports go to Western Europe, with Italy as the main receipient followed by Germany and France. Algeria's Saharan Blend oil, 45° API with negligible (0.05%) sulfur content, is among the highest quality in the world, and European countries have relied upon Algerian oil to help meet increasing stringent EU regulations on sulfur content of gasoline and diesel fuel.

Sonatrach operates the largest oil field in Algeria, Hassi Messaoud. Located in the center of the country, Hassi Messaoud produced about 350,000 bbl/d of 46° API crude in 2004, down from 550,000 bbl/d in the 1970s, but up from 300,000 bbl/d in 1989. The Hassi Messaoud area contains an estimated 6.4 billion barrels, just under 60% of the country's proven oil reserves, and Sonatrach hopes to double production at the field to 700,000-750,000 bbl/d within 5-7 years. Sonatrach also operates the Hassi R'Mel field (north of Hassi Messaoud, south of Algiers), which produced 180,000 bbl/d of 46.1° API crude in 2004. Other major fields operated by Sonatrach include Tin Fouye Tabankort Ordo, Zarzaitine, Haoud Berkaoui/Ben Kahla, and Ait Kheir. In February 2004, Sonatrach announced that it had discovered a new oilfield near Rhourde El Baguel, east of Hassi Messaoud, with possible oil reserves of 360 million barrels.

Foreign oil operators have steadily increased their share of Algeria's oil production. The largest

foreign oil producer is Anadarko, with output of 530,000 bbl/d. The company operates the Hassi Berkine South (300,000 bb/d) and Ourhound (230,000 bbl/d) fields in eastern Algeria. Anadarko is developing seven new oil and gas fields in Block 208 of the Berkine Basin; first production from the fields (EKT, El Merk, El Merk N, El Merk E, El Merk C, El Kheit, and El Tessekha) is possible by 2007, with output eventually reaching 150,000-200,000 bbl/d of crude oil and condensate. Exploration success rates in the Berkine Basin have been high, and several billion barrels of oil may lie within 15 miles or so of the area.




Besides Anadarko, there are many foreign companies active in the country. BHP-Billiton operates the Rhourde Oulad Djemma (ROD) project in eastern Algeria, a series of six satellite fields that should produce 80,000 bbl/d once fully on-stream in late 2005. Amerada Hess has operated the Gassi el Agreb/Zotti field since 2000, with annual production of 40,000 bbl/d. In July 2000, several companies (Burlington Resources, Talisman, and Sonatrach) announced that they would develop the MLN (Menzel Ledjmat North) field in Block 405a. MLN should produce around 35,000-40,000 bbl/d when completed, with initial output of 14,000 bbl/d. Other major foreign producers in Algeria include Cepsa (Ourhoud, Rhourde El Krouf), and Agip (Bir Rebaa).

Although Algeria has experienced a significant influx of foreign investment in recent years, it still has many oil fields in need of additional foreign capital and enhanced oil recovery (EOR) investment. Halliburton has an eight-year contract to provide EOR services and boost production at Hassi Messaoud, which saw production fall sharply beginning in the mid-1980s. In February 1996, Arco (now owned by BP) signed a $1.3 billion partnership with Sonatrach to increase production at Rhourde El Baguel. The Rhourde El Baguel field is Algeria's second-largest, containing about three billion barrels of proven oil reserves, but the field has produced less than 450 million barrels since 1963. BP expects to raise the field's output from 27,000 bbl/d to 125,000 bbl/d by 2010. In September 2003, Brazil's Petrobras signed a deal with Sonatrach to explore for oil in Algeria, and in December 2003, Algeria and China's CNPC reached a similar agreement. Also in December 2003, Cepsa and Total won drilling and exploration rights on the Bechar block in the Sahara desert. Sinopec won a $525 million contract in October 2002 to help increase the crude oil recovery rate at Zarzataine, near Hassi Messaoud. In November 2002, the Kuwait Foreign Petroleum Exploration Company (KUFPEC) and Anadarko announced a partnership to further explore the Berkine Basin; KUFPEC has not been active in Algeria for over 10 years.

During 2004, Algeria held its fifth licensing round for foreign development of oil and natural gas reserves. The country received eight bids for ten blocks in various parts of the country. Companies that won exploration rights included Amerada Hess (U.S.), BHP-Billiton (Australia), CNPC (China), Petroceltic (Ireland), Repsol-YPF (Spain), Sinopec (China), and Statoil (Norway). During its fourth licencing round in 2003, the country awarded 12 blocks for exploration. Algeria held its sixth licensing round in late 2004, and the country planned two more rounds in 2005.

**Pipelines and Export Terminals**

Algeria uses seven coastal terminals for the export crude oil, refined products, liquefied petroleum gas (LPG) and natural gas liquids (NGL). There are facilities located at Arzew (Algeria's largest crude oil export port), Skikda (Algeria's second largest crude oil export port), Algiers, Annaba, Oran, Bejaia, and La Skhirra in Tunisia. Arzew handles about 40% of Algeria's total hydrocarbon exports, including all of its NGL, LPG, and oil condensate exports. Algeria has ambitious plans for the expansion of the Arzew port area, including the construction of a petrochemicals complex, a condensate refinery, and a desalination plant.

Algeria's oil pipeline network facilitates the transfer of oil from interior production fields to these export terminals. Sonatrach operates over 2,400 miles of crude oil pipelines in the country. The most important pipelines carry crude oil from the Hassi Messaoud field to export terminals (see chart). Sonatrach also operates oil condensate and LPG pipeline networks that link Hassi R'mel and other fields to Arzew. Currently, Sonatrach is expanding the Hassi Messaoud-Azrew pipeline, the longest in the country. The project will build a second, parallel line that will more than double the capacity of the existing line.

Algeria operates one crude oil pipeline connection to a foreign country. The 160-mile, 304,000-bbl/d OT1 pipeline connects the In Amenas oil field in the southeastern part of the country to the export terminal in La Skhira, Tunisia.

**Algeria's Major Domestic Crude Oil Pipelines**

| Origin | Destination | Length (miles) | Capacity (bbl/d) |
|---|---|---|---|
| Hassi Messaoud | Arzew | 500 | 470,000 |
| Hassi Messaoud | Bejaia | 410 | 370,000 |
| Hassi Messaoud | Skikda | 400 | 520,000 |
| In Amenas | Hassi Messaoud | 390 | 390,000 |
| Hassi Berkine | Hassi Messaoud | 180 | 110,000 |
| El Borma | Mesdar | 170 | 55,000 |
| B. Mansour | Algiers | 80 | 77,000 |
| Mesdar | Hassi Messaoud | 70 | 26,000 |

*Source: Algerian Ministry of Energy and Mining*

**Downstream**

Naftec, a subsidiary of Sonatrach, operates Algeria's crude oil refineries. The country has four refineries, with combined capacity of 450,000 bbl/d, supplying most of the country's refined oil product needs. The Skikda refinery (300,000 bbl/d) provides the bulk of Algeria's refined products production. The 30,000-bbl/d Hassi Messaoud plant supplies products to southern Algeria, while the 60,000-bbl/d Algiers refinery processes crude from Hassi Messaoud for consumption in the capital. Finally, the coastal 60,000-bbl/d Arzew refinery produces products for domestic consumption and export. In January 2001, Algeria issued a tender for an integrated production and refining project in the central Adrar region, near the Sbaa basin, and in May 2003 contracted with China's CNODC to build it. Algeria also wants to upgrade and restart the currently-idle In Amenas refinery. In addition to its domestic production of oil products, Algeria imports around 20,000-35,000 bbl/d of sour crude and specialty products for specific industrial applications.

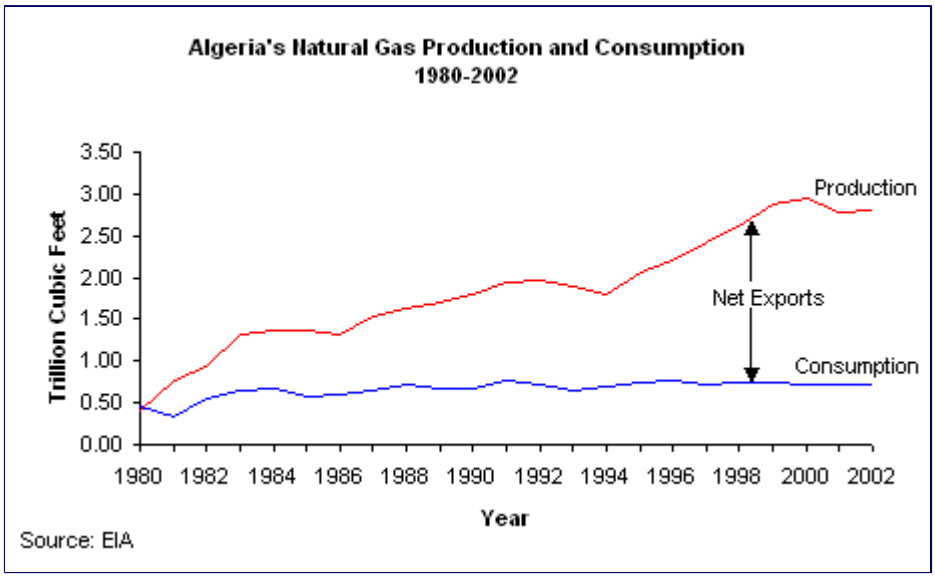
Although Algeria has a substantial petrochemical and fertilizer industry, low capacity utilization rates mean continued reliance on imports. Algeria's largest petrochemical plants include Annaba (a 550,000-ton-per-year (t/y) ammonium phosphate fertilizer plant. ammonium nitrate facility, and nitric acid complex), Arzew (365,000-t/y ammonia, 146,000-t/y urea, and 182,500-t/y ammonium nitrate), and Skikda (130,000-t/y high-density polyethylene unit, 120,000-t/y ethylene cracker, and a substantial aromatics complex). Sonatrach has undertaken a number of petrochemical and

fertilizer expansion projects, including a new methyl tertiary butyl ether (MTBE) complex and a polyester resin complex.

## NATURAL GAS

### Overview

As of 2005, Algeria had 160 trillion cubic feet (Tcf) of proven natural gas reserves, the eighth-largest in the world. Algeria's recoverable natural gas potential, however, may be as high as 282 Tcf. Most of the country's natural gas reserves are associated (they occur alongside crude oil reserves). Algeria is a founding member of the Gas Exporting Countries' Forum, a loose group of 15 gas-producing countries formed in Tehran in May 2000.




Sonatrach dominates natural gas production and wholesale distribution in Algeria, while another state-owned company, Sonelgaz, controls retail distribution. Algeria has increasingly allowed greater foreign investment in the sector, and foreign gas producers have entered into numerous partnership agreements with Sonatrach. There are also plans to allow foreign participation in the retail natural gas sector. In order to attract foreign investment, the government has pushed efforts to liberalize domestic natural gas prices; unfortunately, the latest push at price liberalization in 2005 coincided with record freezing temperatures in Algeria, and there were protests and riots against the liberalization plans in several cities.

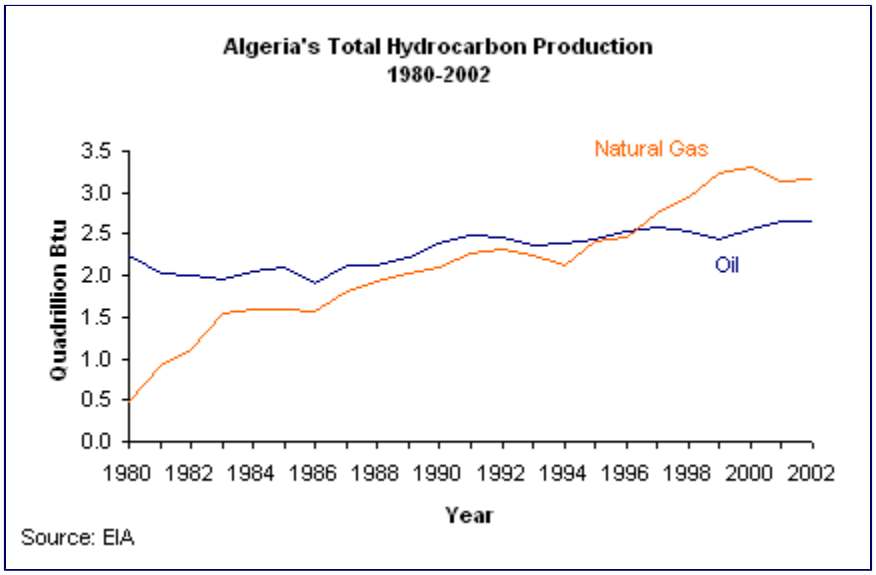
### Exploration and Production

Commercial production of natural gas in Algeria began in 1961. The country produced 2.8 trillion cubic feet (Tcf) of natural gas in 2002, the fifth-largest in the world and the largest among OPEC member countries. In 1997, Algeria's natural gas production exceeded the country's crude oil production for the first time. In 2002, natural gas production accounted for 54% of Algeria's total hydrocarbon production. Algeria consumed 0.72 Tcf of natural gas in 2002, some 26% of its production. The Algerian government has encouraged the domestic use of natural gas, which now represented over 63% of the country's total energy consumption in 2002.

Algeria is a major natural gas exporter, mostly to Europe and the United States. Algeria accounting for one-fifth of the EU natural gas imports in 2000, second only to Russia. One complication in Algeria's natural gas export strategy to Europe has been EU market liberalizations, which have challenged the legality of traditional "destination clauses" for gas deliveries. Such clauses prevent the offtaker of the gas from reselling it to another EU state, and this has complicated Algeria's attempts at signing agreements with EU purchasers. Traditionally, natural gas suppliers have prefered destination clauses as a way to prevent competition from re-suppliers. In January 2005, Algeria reached an agreement with the EU over these destination clause. Under terms of the agreement, the EU will continue to allow destination clauses, and Algeria will share the profits of

any gas sales to third parties with the original buyer.

Algeria's largest gas field is the super-giant Hassi R'Mel, discovered in 1956 and holding proven reserves of about 85 Tcf. Hassi R'Mel accounts for about a quarter of Algeria's total dry gas production. The remainder of Algeria's gas reserves center around associated and non-associated fields in the south and southeast regions of the country. In southeastern Algeria, the Rhourde Nouss region holds 13 Tcf of known reserves in the Rhourde Nouss, Rhourde Nouss Sud-Est, Rhourde Adra, Rhourde Chouff, and Rhourde Hamra fields; also in southeastern Algeria, near the Libyan border, the In Amenas region contains the Tin Fouye Tabankort (TFT; 5.1 Tcf), Alrar (4.7 Tcf), Ouan Dimeta (1.8 Tcf), and Oued Noumer fields. The In Salah region in southern Algeria holds smaller, less-developed reserves (5-10 Tcf). In October 2003, Sonatrach announced a major natural gas discovery in the Reggane Basin in southwestern Algeria. In order to increase production from associated natural gas fields, the Algerian government has announced the banning of natural gas flaring after 2010.




Development of the In Salah region is crucial in Algeria's plan to increase its natural gas production. The In Salah Gas consortium, a partnership of Statoil, BP, and Sonatrach, was the first major natural gas partnership between Sonatrach and a foreign operator. The consortium has development rights for seven of the twelve existing fields in the In Salah region, including the Garat al-Bafinat, Teguentour, Krechta, Reg, In Salah, Hassi Moumeme, and Gour Mahmoud fields. In Salah Gas will also appraise existing wells and explore for new gas reserves in the region. The fields controlled by the consortium contain proven reserves of 6 Tcf, with potentially 10 Tcf in total recoverable reserves. Initial production at the In Salah fields began in July 2004, and once fully on-stream, they should produce some 880 million cubic feet per day (Mmcf/d) of natural gas. Even prior to initial startup, the consortium had already signed gas supply contracts with European customers. In May 1997, In Salah Gas sealed its first natural gas sales deal with Italian electricity generator Enel. The deal enables In Salah Gas to take over an existing contract to supply Enel with 390 Mmcf/d of gas. Other than Enel, the venture is marketing gas to other potential clients in Europe, Turkey and North Africa.

Besides In Salah, other important Algerian natural gas projects have centered around three blocks in the Illizi province of southeast Algeria, near the Libyan border: Ohanet, In Amenas, and Gassi Touil. Ohanet, led by a consortium of BHP-Billiton and Sonatrach, is in Illizi on the northern edge of the Sahara desert. Production of natural gas, NGL, and liquified petroleum gas (LPG) at Ohanet began in October 2003. The Ohanet project includes a natural gas processing plant with capacity for 30,000 bbl/d of condensate, 26,000 bbl/d of LPG, and around 700 million cubic feet (Mmcf)/day of natural gas.

In November 2002, Sonatrach and BP signed a deal to develop natural gas production in the In

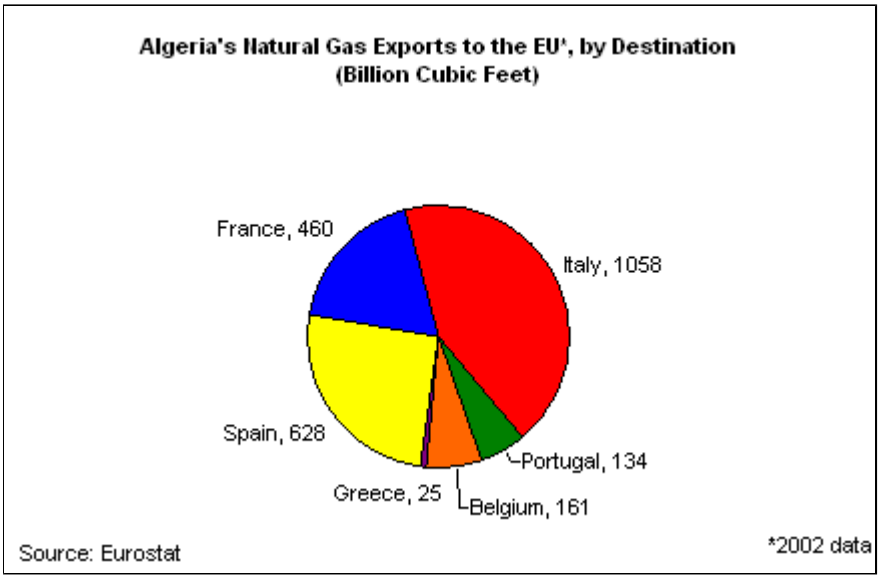
Amenas region. The $1.8 billion project is due to come on-stream in late 2005 and should produce around 900 Mmcf/d of "wet" (i.e., associated with oil) natural gas, plus 50,000 bbl/d of condensate and LPG. The project includes construction of three pipelines to carry the hydrocarbons to the Sonatrach distribution system at Ohanet. In 2003, Statoil purchased 50% of BP's stake in the project.

In November 2004, Algeria awarded a tender to Repsol-YPF and Gas Natural for a natural gas project at Gassi Touil, a field containing 9 Tcf of proven reserves. The $2 billion integrated project will consist of 52 development wells, a 780-Mmcf/d gas processing facility, a 630-Mmcf/d natural gas pipeline, and a 500-Mmcf/d gas liquefaction terminal at Arzew. Initial production at Gassi Touil should begin in 2009, with the bulk of its gas destined for Spain and other European markets.

**Pipelines**

*Domestic System*

Algeria's domestic pipeline system centers around the Hassi R'Mel gas field. The largest pipeline systems connect Hassi R'Mel to liquefied natural gas (LNG) export terminals along the Mediterranean Sea. A 315-mile, 4.38-billion-cubic-feet-per-day (Bcf/d) system connects Hassi R'Mel to Arzew, while a 360-mile, 1.98-Bcf/d system connects Hassi R'Mel to Skikda. A smaller pipeline (270 miles, 690 Mmcf/d) also runs between Hassi R'Mel and Isser, near Algiers. Hassi R'Mel is the center of Algeria's entire natural gas transport network, so pipelines connect to it from the country's major gas-producing regions. A 600-mile, 3.29-Bcf/d pipeline links the In Amenas region; a 330-mile, 774-Mmcf/d pipeline connects the In Salah region; and a 90-mile, 610-Mmcf/d system runs from the gas fields surrounding Gassi Touil.




*Export Pipelines*

There are two natural gas pipeline connections between Algeria and Europe. The 670-mile, 2.32-Bcf/d Trans-Mediterranean (Transmed, also called Enrico Mattei) line runs from Hassi R'Mel, via Tunisia and Sicily, to mainland Italy. Completed in 1983 and doubled in 1994, there are plans to construct an additional compressor station along the Transmed that could increase capacity to 3.48-Bcf/d. An international consortium, led by Spain's Enagas, Morocco's SNPP, and Sonatrach, operates the 1,000-mile, 820-Mmcf/d Maghreb-Europe Gas (MEG, also called Pedro Duran Farell). MEG, completed in 1996, connects Hassi R'mel with Cordoba, Spain via Morocco, where it ties into the Spanish and Portuguese gas transmission networks. In August 2001, Sonatrach awarded ABB a $93 million contract to build a natural gas compressor station on the MEG line in order to increase the line's capacity to 1.78 Bcf/d by 2006.

In July 2001, a consortium led by Spain's Cepsa (20%) and Algeria's Sonatrach (20%) agreed to build a new natural gas pipeline linking Algeria and Europe: Medgaz. The 120-mile Medgaz will link Beni Saf, Algeria to Almeria, Spain, with an eventual extension to France. In September 2002, the consortium completed a study of the line's feasibility, but delays have pushed initial

construction on the project to July 2005. The $1.3 billion Medgaz, which should be completed by 2008, will have an initial capacity of 390 Mmcf/d, increasing to a maximum of 1.55 Bcf/d. There are also plans to run a parallel power cable. In November 2002, Cepsa said that it had signed a letter of intent to purchase 35 Bcf/y of natural gas via Medgaz, and in 2004, Iberdrola also agreed to purchase 35 Bcf/y from the line.

In 2002, Sonatrach signed a deal with Italy's Enel and Germany's Wintershall to form Galsi, a consortium to build another natural gas pipeline from Algeria to Italy. Current plans call for an onshore pipeline from Gassi R'Mel to El Kal, Algeria, then an underwater section to Cagliari, Sardinia. This is to be followed by an onshore section to Olbia, Sardinia, then a final, offshore pipeline to C.D. Pescaia, Italy. Galsi estimates initial capacity on the 910-mile line will be 770-990 Mmcf/d, and, as with Medgaz, there are plans for a parallel power cable. The $2 billion project could come on-stream by 2008.

Sonatrach and NNPC, the Nigerian state oil company, formed the Trans-Saharan Natural Gas Consortium (NIGEL) in 2002. The NIGEL consortium aims to construct a 4,550-mile natural gas pipeline from Warri, Nigeria to Hassi R'Mel, via Niger. There are also plans to construct a road and fibre optic cable parallel to the pipeline. The NIGEL pipeline would utilize the proposed Medgaz and existing Transmed pipeline to carry Nigerian gas to European markets. The Nigerian and Algerian governments have sought financial assistance for the $7 billion project from the World Bank and the New Project for Africa's Development (NEPAD). In 2004, both governments expressed their continued commitment to the project, promising concrete action in 2005.

### Liquefied Natural Gas

With the start-up of the Arzew GL4Z plant in 1964, Algeria became the world's first producer of liquefied natural gas (LNG). During the first nine months of 2004, Algeria exported 2.43 Bcf/d of LNG. Algeria is the second largest exporter of LNG (behind Indonesia), with around 17% of the world's total. Most of Algeria's LNG exports go to Western Europe, especially France. Sonatrach has LNG export contracts with Gaz de France, Belgium's Distrigaz, Spain's Enagas, Turkey's Botas, Italy's Snam, and Greece's DEPA. In 2003, Algeria exported 53.4 Bcf of LNG to the United States, some 11% of total U.S. LNG imports. Algeria's largest LNG export terminal is the Arzew facility, whose two facilities produce a combined 840 Bcf/d of LNG. Other important terminals include Skikda (275 Bcf/d) and Algiers.

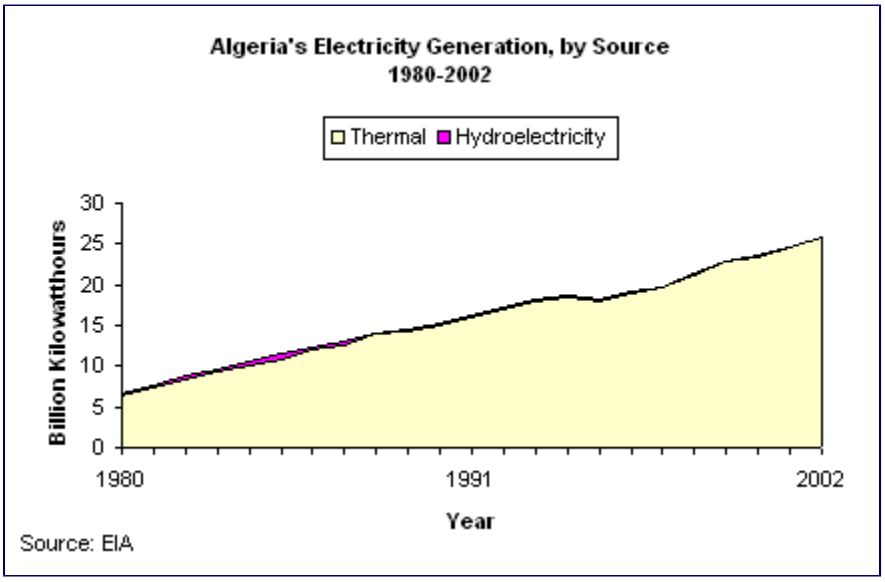
On January 19, 2004, a boiler exploded at the Skikda LNG export terminal. The blast killed at least 27 people and shut operations at several adjacent facilities, including a refinery and oil loading terminals. Three of six LNG trains at the Skikda terminal were destroyed, though the other three also suffered some damage. As a result of the accident, LNG production at the Skikda plant declined 76% during 2004. Sonatrach completed repairs on the last damaged LNG train in November 2004, and the company decided to replace the three destroyed trains with a single, larger one, upon which construction should finish by mid-2007. Sonatrach stated that, while Algeria's LNG exports would remain at a reduced level through 2007, its overall natural gas exports would remain the same due to expansions of its export pipelines.

## ELECTRICITY

### Overview

Algeria generated 25.8 billion kilowatthours (Bkwh) of electricity in 2002. Conventional thermal sources, of which natural gas accounted for 97%, contributed almost all of Algeria's electricity supply, supplemented by a small amount of hydroelectricity. As of 2002, Algeria had 5.93 gigawatts of installed generating capacity. The country consumed 23.6 Bkwh of electricity in 2002, exporting excess supply to Morocco and Tunisia. Algeria's electricity demand is growing at a rapid

rate, and the country will require significant additional capacity in coming years.




Algeria has over 140,000 miles of power lines, serving almost the entire population. There are plans to increase the size of the network by 5% in coming years in order to reach isolated rural communities and hydrocarbon developments in the Sahara Desert. As mentioned above, Algeria does export some electricity to its neighbors, and there are plans to export electricity to Europe. Algeria has proposed undersea power connections to Italy and Spain, likely to run in conjunction with natural gas pipelines. However, Algeria's ability to export electricity in the future will depend upon its ability to build enough generation capacity to meet soaring domestic demand.

State-owned Sonelgaz controls electricity generation, transmission, and distribution in Algeria. A 2002 law converted Sonelgaz into a private company and revoked its monopoly on the power sector, though the Algerian government continues to hold all of the company's shares. The 2002 law also created the Electricity and Gas Regulatory Commission (CREG) to oversee the newly-opened industry and to ensure non-discriminatory access to the sector. Algeria aims to eventually split Sonelgaz into separate generation, transmission, and distribution companies, though those plans have faced domestic opposition from organized labor. Following privatization, Sonalgaz created a joint venture with Sonatrach, the Algerian Energy Company (AEC), in order to pursue partnerships with foreign investors.

In July 2002, Sonatrach and Sonelgaz formed a joint venture, New Energy Algeria (NEAL), to pursue the development of alternative electricity sources, including solar, wind, and biomass. One project reportedly under consideration is a 120-megawatt (MW), hybrid gas/solar power plant near Timimoun. In January 2003, Algeria and the International Energy Agency agreed on technological cooperation in developing solar power. Overall, Algeria hopes to increase the share of solar in the country's electricity mix to 5% by 2010.

**Natural Gas**

Natural gas is the largest source of Algeria's electricity generation. Since the opening of the sector in 2002, there has been considerable private investment in new electricity generating capacity. Algerian law requires that all foreign operators establish joint ventures with AEC, and in return, AEC guarantees that it will purchase all electricity generated by these plants. AEC contracted with Anadarko and General Electric to build the country's first privately-financed, gas-fired power plant at Hassi Berkine. In August 2003, France's Alstom agreed to construct a 300-MW power plant at F'Kirina, some 300 miles east of Algiers. Canada's SNC-Lavalin won a contract in July 2003 to design and build an 825-MW, combined cycle power plant in Skikda, expected to come online in the third quarter of 2005. In 2004, SNC-Lavalin also won a tender to build a 1,200-MW, combined cycle power plant in Tipasa, west of Algiers. In early 2005, Siemens announced that it would build

a 500-MW, gas-fired plant in Berrouaghia: tje caility should become operational by the end of 2006.

The need to provide power to desalination plants has driven much of the foreign investment in gas-fired power plants in Algeria. In 2002, U.S.-based Black and Veatch began construction of a facility near the Arzew oil export terminal, with a generating capacity of 310 MW and desalination capacity of 3.1 million cubic feet per day (cf/d); the plant should come online in mid-2005. In 2004, Japan's Mitsui and U.S.-based Ionics won a tender for a 7.1-million-cf/d desalination plant alongside a 400-MW power plant in Hamma, near Algiers.

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*Sources for this report include: Africa Energy Intelligence; Africa News; Africa Oil and Gas Bulletin; Africa Research Bulletin, AFX.COM; Al-Bawaba; Alexander's Gas & Oil Connections; Algerian Ministry of Energy and Mines; AP Worldstream; APS Review Downstream Trends; APS Review Gas Market Trends; APS Review Oil Market Trends; the Australian; BBC Monitoring; BHP Billiton; Business Wire; CIA World Factbook; CWC Africa Energy Alert; Dow Jones International; Economist Intelligence Unit; Energy Compass; Financial Times; International Oil Daily; Middle East Economic Digest (MEED); Middle East Economic Survey (MEES); Middle East Executive Reports; Middle East News Online; Natural Gas Week; Oil and Gas Journal; Oil Daily; Petroleum Economist; Petroleum Intelligence Weekly; Platts Oilgram News; Power Engineering International; PR Newswire; Reuters; Sonatrach; U.S. Energy Information Administration; Weekly Petroleum Argus; World Gas Intelligence; World Markets Analysis; World Markets Research; Worldwide Projects.*

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## COUNTRY OVERVIEW

**President:** Abdelaziz Bouteflika (since April 1999)
**Prime Minister:** Ahmed Ouyahia (since May 2003)
**Independence:** July 5, 1962 (from France)
**Population (7/04E):** 32.1 million
**Location/Size:** North Africa/919,595 sq. miles, more than one-quarter the size of the United States
**Major Cities:** Algiers (capital), Constantine, Annaba, Arzew, Skikda, Oran, Ghardaia, Bechar, Ouargla, Touggourt
**Languages:** Arabic (official), French, Berber dialects
**Ethnic Groups:** Arab-Berber (99%), European (less than 1%)
**Religions:** Sunni Islam (state religion) 99%, Christianity and Judaism 1%

## ECONOMIC OVERVIEW

**Currency:** Algerian Dinar (AD)
**Market Exchange Rate (2/14/05E):** US$1 = AD 71.85
**Gross Domestic Product (2004E):** $82 billion
**Real GDP Growth Rate (2004E):** 6.1% **(2005F):** 6.9%
**Inflation Rate (consumer prices) (2004E):** 3.6% **(2005F):** 3.2%
**Major Export Products:** Petroleum, natural gas, and petroleum products
**Major Import Products:** Capital goods, foodstuffs, consumer goods
**Merchandise Exports (2004E):** $31.3 billion
**Major Export Partners (2003E):** Italy (19.5%), U.S. (18.5%), France (13.6%), Spain (11.2%)
**Merchandise Imports (2004E):** $16.4 billion
**Major Import Partners (2003E):** France (30.9%), Italy (9.6%), Spain (6.1%), Germany (5.5%)
**Merchandise Trade Balance (2004E):** $14.9 billion
**Current Account Balance (2004E):** $11.4 billion

**Foreign Exchange Reserves (2003E):** $33.4 billion
**Total External Debt (2003E):** $22.7 billion

**ENERGY OVERVIEW**
**Energy Minister:** Chekib Khelil
**Proven Oil Reserves (1/1/05E):** 11.8 billion barrels
**Oil Production (2004E):** 1.93 million bbl/d, of which 1.23 million bbl/d was crude oil, 0.45 million bbl/d was lease condensates, and 0.25 million bbl/d was natural gas liquids
**OPEC Crude Oil Production Quota (11/1/04):** 862,000 bbl/d
**Oil Consumption (2004E):** 246,000 bbl/d
**Net Oil Exports (2004E):** 1.68 million bbl/d
**U.S. Oil Imports from Algeria (January-November 2004E):** 439,000 bbl/d (3.4% of U.S. oil imports)
**Natural Gas Reserves (1/1/05E):** 160.5 Tcf
**Dry Natural Gas Production (2002E):** 2.80 Tcf
**Natural Gas Consumption (2002E):** 0.72 Tcf
**Net Natural Gas Exports (2002E):** 2.05 Tcf
**Electricity Generation (2002E):** 25.8 Bkwh (conventional thermal 99.8%, hydroelectricity 0.2%)
**Electricity Consumption (2002E):** 23.6 Bkwh
**Electricity Generating Capacity (2002E):** 5.9 gigawatts

**ENVIRONMENTAL OVERVIEW**
**Total Energy Consumption (2002E):** 1.31 quadrillion Btu* (0.3% of world total energy consumption)
**Energy-Related Carbon Dioxide Emissions (2002E):** 81.58 million metric tons of carbon dioxide(0.3% of world total carbon emissions)
**Per Capita Energy Consumption (2002E):** 41.1 million Btu (vs U.S. value of 339.1 million Btu)
**Per Capita Carbon Dioxide Emissions (2002E):** 2.61 metric tons of carbon (vs U.S. value of 19.97 metric tons of carbon)
**Energy Intensity (2002E):** 7,971 Btu/$1995** (vs U.S. value of 10,618 Btu/ $1995)**
**Carbon Intensity (2002E):** 0.51 metric tons of carbon dioxide/thousand $1995** (vs U.S. value of 0.63 metric tons/thousand $1995)**
**Fuel Share of Energy Consumption (2002E):** Natural Gas (63.3%), Oil (35.2%); Coal (1.5%)
**Fuel Share of Carbon Emissions (2002E):** Natural Gas (62.7%); Oil (35.0%); Coal (2.3%)
**Status in Climate Change Negotiations:** Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified June 9th, 1993). Not a signatory to the Kyoto Protocol.
**Major Environmental Issues:** Soil erosion; desertification; river and coastal water pollution due to the dumping of raw sewage, petroleum refining wastes, and other industrial effluents; inadequate supplies of potable water.
**Major International Environmental Agreements:** A party to Conventions on Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification, Law of the Sea, Ozone Layer Protection, Ship Pollution, Wetlands. Has signed, but not ratified, the Nuclear Test Ban Treaty.

* 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 INDUSTRY**

**Major State Companies:** Enterprise Nationale pour la Recherche, la Production, le Transport, la Transformation et la Commercialisation des Hydrocarbons (Sonatrach) - State-owned company for exploration, transport and marketing of petroleum, natural gas and related products; Enterprise Nationale de Raddinage des Produits Petroliers (Naftec) - Operates and manages all refineries; Enterprise Nationale de Commercialisation et de Distribution des Produits Petroliers (Naftel) - Domestic product distribution. Societe de Conditionnement, Comercialisation & Transport de Gas Industriels (Cogiz) - produces natural gas by-products.
**Oil Export Terminals:** Arzew (Algeria's largest crude oil export port), Skikda, Algiers, Annaba, Oran, Bejaia, plus the Tunisian facility of La Skhirra.
**Major Oil Fields:** Hassi Messaoud, Hassi Berkine, Ourhound, Hassi R'Mel, Bir Rebaa, Gassi El Agreb/Zotti, Menzel Ledjmet
**Major Natural Gas Fields:** Hassi R'Mel, Rhourde Nouss, Rhourde Nouss Sud-Est, Rhourde Adra, Rhourde Chouff, Rhourde Hamra fields. Smaller gas reserves are located in the In Salah region (5-10 Tcf) as well as at the Tin Fouye Tabankort (TFT)(5.1 Tcf), Alrar (4.7 Tcf), Ouan Dimeta (1.8 Tcf), and Oued Noumer fields.
**Oil Refineries (crude refining capacity bbl/d, 2005E):** Naftec-Skikda (300,000), Naftec-Algiers (60,000), Naftec-Jarzew (60,000), Naftec-Hassi Messaoud (30,000)
**LNG Facilities:** Arzew GL4Z, Arzew GL1Z, Arzew GL2Z, Skikda GL1K
**Selected Foreign Energy Company Involvement:** ABB, Amerada Hess, Anadarko, Burlington Resources, BHP Billiton, BP, Cepsa, CNODC, CNPC, Enagas, Endesa, Enel, ENI, Gaz de France, Maersk, Petrobras, Petrofac, Repsol-YPF, Statoil, Talisman, Total, Wintershall, Woodside, YPF

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**LINKS**

For more information from EIA on Algeria, please see:
EIA: Country Information on Algeria

Links to other U.S. government sites:
CIA World Factbook
U.S. Commerce Department Country Commercial Guide for Algeria
U.S. State Department Consular Information Sheet on Algeria

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**Government Agencies and Intergovernmental Organizations**

Algeria and the IMF
Algerian Central Bank
Algerian Finance Ministry
Algerian Ministry of Energy and Mining
Algerian Mission to the UN
Embassy of Algeria in Washington, DC

**Non-governmental Organizations**

Arab Net: Algeria

Infoplease: Algeria

**Oil and Gas Industry**
Amerada Hess
Anadarko
BHP
British Petroleum
Burlington Resources
Cepsa
CNPC
Kuwait Foreign Petroleum Exploration Company
Naftec
Petroceltic
Repsol-YPF
Sonatrach
Statoil
Talisman Energy

**Electricity Industry**
Sonelgaz
SNC-Lavalin

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