

COUNTRY ANALYSIS BRIEFS

Azerbaijan

Last Updated: August 2006

Background

Since becoming independent in 1991, Azerbaijan has attracted significant international interest in its oil and natural gas reserves. Foreign investors are helping the country develop its rich oil and natural gas reserves in the Caspian Sea basin, and completion and possible expansion of new pipelines, especially the BTC (Baku-T'bilisi Ceyhan) pipeline, will allow Azerbaijan to become an important energy exporter over the next decade.

As a Caspian littoral state, Azerbaijan is capitalizing upon the Sea's sizeable, but still mostly untapped, hydrocarbon resources. Azerbaijan's real gross domestic product (GDP) grew by an impressive 26 percent to \$13 billion in 2005 as foreign investors pushed ahead with major projects in Azerbaijan (see [Azerbaijan Production Sharing Agreements](#) for more information). Foreign direct investment in the country contracted from \$2.3 billion in 2004 to just under \$500 million in 2005 largely due to the completion of construction on the BTC pipeline in Azerbaijan. In the next couple years favorable real GDP growth is expected, but maintaining low inflation rates as energy and transit revenues flow into the country represents a major challenge.



In the meantime, Azerbaijan is struggling to overcome the economic collapse that followed independence from the former Soviet Union, as the country's GDP contracted by almost 60 percent from 1990 to 1995. By 2000 and 2001 wages were increasing around 20 percent each year, and by the end of 2005 the average monthly wage was around \$125. Still, according to the International Monetary Fund (IMF), almost 45 percent of the population lives below the poverty line. Azerbaijan has drawn over \$120 million (as of April 2006) from an IMF-run [Poverty Reduction and Growth Facility program](#) in Azerbaijan that has helped re-structure the country's economy and alleviate economic hardships.

Azerbaijan's hope for future economic growth rests in large part with successful development of its oil and natural gas resources in the [Caspian Sea region](#) and through effective management of the resulting revenue stream. After the first commercial oil flows through BTC during Summer 2006, oil revenues will contribute to a doubling of Azerbaijan's GDP by 2008. Azerbaijan will have drastically higher oil revenues than ever before, and although the country has effectively managed a \$1 billion oil fund, bankers and investors question whether Azerbaijan can manage an oil fund that could eventually be worth \$100-200 billion (depending on the oil price). Although the entire fuel sector represented 27 percent of Azerbaijan's GDP in 2000, it grew to approximately 41 percent of GDP in 2005 (See Table 1).

	2002	2003	2004	2005	2006	2010
Oil Production /1	310	320	319	440	600	1,250
Net FDI /2	1,048	2,353	2,351	1,173	-157	476
Oil Sector Net FDI	984	2,315	2,258	1,091	-245	366
as share of total (%)	94%	98%	96%	93%	-	77%
Oil Sector Exports	2,046	2,250	3,097	4,989	7,931	17,857
as share of total (%)	89%	86%	83%	90%	93%	95%
Oil Sector Revenue	21.9	21.4	20.3	23.1	-	-
as share of total (%)	55%	56%	52%	54%	-	-
Oil Fund Assets	693	821	974	1,320	2,165	42,517

1. Thousand barrels per day, 2. Foreign Direct Investment
Oil Production source: US Energy Information Administration, Short Term Energy Outlook
Other Indicators from IMF, Country Report, No. 05/260, July 2005

To manage the revenues, former president President Heydar Aliyev created a State Oil Fund in 1999, which is designed to use money obtained from oil-related foreign investment for education, poverty reduction, and efforts aimed at raising rural living standards. As of the end of 2005, the State Oil Fund reported assets of \$1.3 billion, but the fund's assets are expected to almost double during 2006. Please see a recent paper in [Geopolitics of Energy](#) for more information on the effects of energy revenues on Azerbaijan.

Economists at the IMF warn Azerbaijan that institutional reform and economic liberalization are necessary for the country to sustain its upcoming oil wealth. Some of the slow-paced reform has been due to the transfer of power to Ilham Aliyev, who was elected president in October 2003. He succeeded his father, Heydar Aliyev, the longstanding president during the 1970s and much of the 1990s. However, the shift in power from father to son was reportedly tainted and accompanied by violence. Ilham Aliyev has a background in his country's energy sector, was educated in Russia and the United States, and has maintained a good working relationship with foreign investors and the U.S. Regardless of the policy direction that Azerbaijan takes, the establishment of the oil fund and Azerbaijan's leadership in the Extractive Industries Transparency Initiative (EITI), which urges data transparency and hopes to reduce corruption, show positive signs that Azerbaijan is aware of the challenges it faces.

The Organization for Security and Cooperation in Europe (OSCE) noted some improvements in the election process during the November 2005 elections, but observed "deteriorating" conditions during the tabulation of votes and the interference of local executive authorities in the campaign process (see [full report](#) for more information). Results for 10 seats in last November's national election were annulled because of these violations, and concerned authorities scheduled a re-vote in May of 2006. Following the re-vote, a [statement](#) issued May 15 by the OSCE's Office for Democratic Institutions and Human Rights called the vote "a welcome step toward increased transparency." The ODIHR assessment lauded authorities for "inclusive candidate registration" and "a largely unimpeded campaign." It also stressed a need for further electoral reforms, and cited several "issues of concern, including the composition of election commissions, instances of interference by local authorities in the election process and the handling of complaints and appeals by election commissions and courts." Opposition figures again said the balloting was marred by official abuse.

One of the most significant challenges to Ilham Aliyev's government is maintaining good relations with Azerbaijan's neighboring states. One source of conflict is the dispute over [Nagorno-Karabakh](#). The conflict, which started over the Armenian claims to the area, grew into a full-scale war that led to the death of over 30,000 people on both sides. As a result of Azerbaijan's armed conflict with Armenia from 1988-1994, around 12 percent of Azerbaijan's 8.3 million people became refugees and internally displaced persons (IDPs). While Baku and its environs have been the recipient of high levels of foreign direct investment (FDI) in recent years, the Western regions have the lowest levels of income and the highest incidence of poverty. As a result of a 1994 cease-fire, Azerbaijan lost approximately 16 percent of its territory. Lingering tensions between the two countries remain, which raises concerns for stability and energy security in the area. Fueled in part by new oil revenues, Azerbaijan's military expenditures have also risen from \$135 million (2.7 percent of non-oil GDP) in 2001 to \$300 million (4 percent of non-oil GDP) by 2005. The Minsk Group of the OSCE, co-chaired by France, Russia and the U.S., has been facilitating negotiations since 1994, but has not been successful in brokering an agreement between the parties. Currently, Azerbaijan's relations with Russia are also tense, and disputes over Caspian

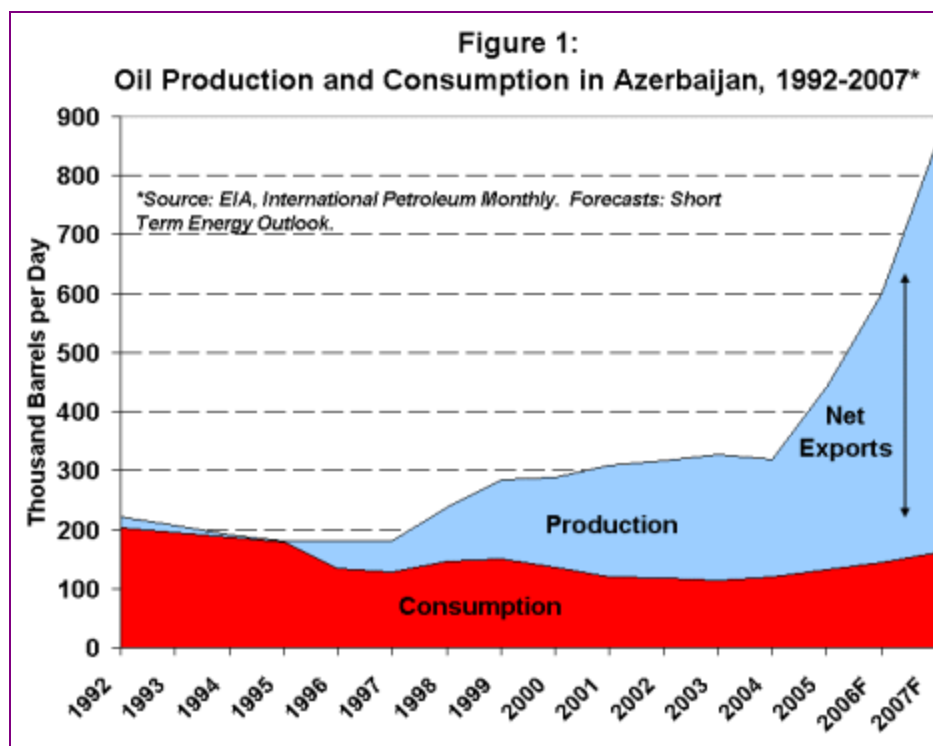
Sea borders hinder relations with Iran and Turkmenistan. (For more information see: [U.S. Department of State Fact Sheet](#) on Nagorno-Karabakh and a [background paper](#) from the International Crisis Group.).

Oil

Oil production growth in Azerbaijan comes primarily from the Azeri-Chirag-Guneshli (ACG) field. Production grew over 150,000 barrels per day during 2005 and is poised for further gains now that the ACG oil can be sent via the newly completed BTC pipeline.

During 2005, monthly oil production in Azerbaijan rose 150,000 bbl/d during 2005, driven almost exclusively by growth from the Azeri-Chirag-Guneshli (ACG) field. This is above the production levels the country produced at its peak during World War II. SOCAR, the state oil company of Azerbaijan expects the country's total liquids production to average roughly 600,000 bbl/d for all of 2006. Domestic petroleum consumption in Azerbaijan has fallen since independence, resulting in a growing margin for net petroleum exports (see Figure 1). Azerbaijan's net exports amounted to roughly 310,000 bbl/d in 2005, most of which was routed to Russia, Italy, Turkey, and Germany.

Estimates of Azerbaijan's proven crude oil reserves range between 7 and 13 billion barrels according to industry journals and government sources. The State Oil Company of the Azerbaijan Republic (SOCAR) estimates proven reserves at 17.5 billion barrels which, under an antiquated Soviet reserve classification system, may include reserves that are either not viable or not fully proven. The country's largest hydrocarbon structures are located offshore in the Caspian Sea and account for most of the country's current petroleum production. The majority of Azerbaijan's oil output (59 percent in 2005) comes from SOCAR, but AIOC oil represents a growing share of the country's total production.



SOCAR

SOCAR was established in September 1992 with the merger of Azerbaijan's two state oil companies, Azerineft and Azneftkimiya. SOCAR and its many subsidiaries are responsible for the production of oil and natural gas in Azerbaijan, for operation of the country's two refineries, for running the country's pipeline system (except BTC), and for managing the country's oil and natural gas imports and exports. Although government ministries handle exploration and production agreements with foreign companies, SOCAR is party to all of the international consortia developing new oil and gas projects in Azerbaijan. The company does not have effective control over output levels and the state is reorganizing the company to create greater operating and fiscal efficiency. Since 2003, SOCAR has owned the oil it produces; previously, SOCAR relinquished ownership once the oil had been sent to processing facilities. The restructuring also involved transferring some of the non oil-producing businesses to the Ministry for Economic Development. Further restructuring of SOCAR is likely in upcoming months as the company implements recommendations of an international consulting consortium that was funded by an EBRD grant.

The company (not including subsidiaries) employs 60,000 people and is headed by Abdullayev Rovnag, who was formerly head of Socar's Azerneftyanag refinery. The former head of SOCAR, Natic Aliyev (no relation to President Ilham Aliyev), was appointed Minister of Energy in

December 2005.

Almost half of SOCAR's oil production in recent months came from the offshore field "shallow-water Guneshli," known in the Soviet era as the "28th of April Field," and located 60 miles off Azerbaijan's Absheron Peninsula. Shallow water Guneshli first came online in 1981, but was developed only to a maximum water depth of 400 feet due to technological constraints. Recently, production levels have been falling as equipment is in disrepair and the structure is losing reservoir pressure. Residual reserves at the field are estimated at 1.3 billion barrels of oil according to *Interfax*, a news service.

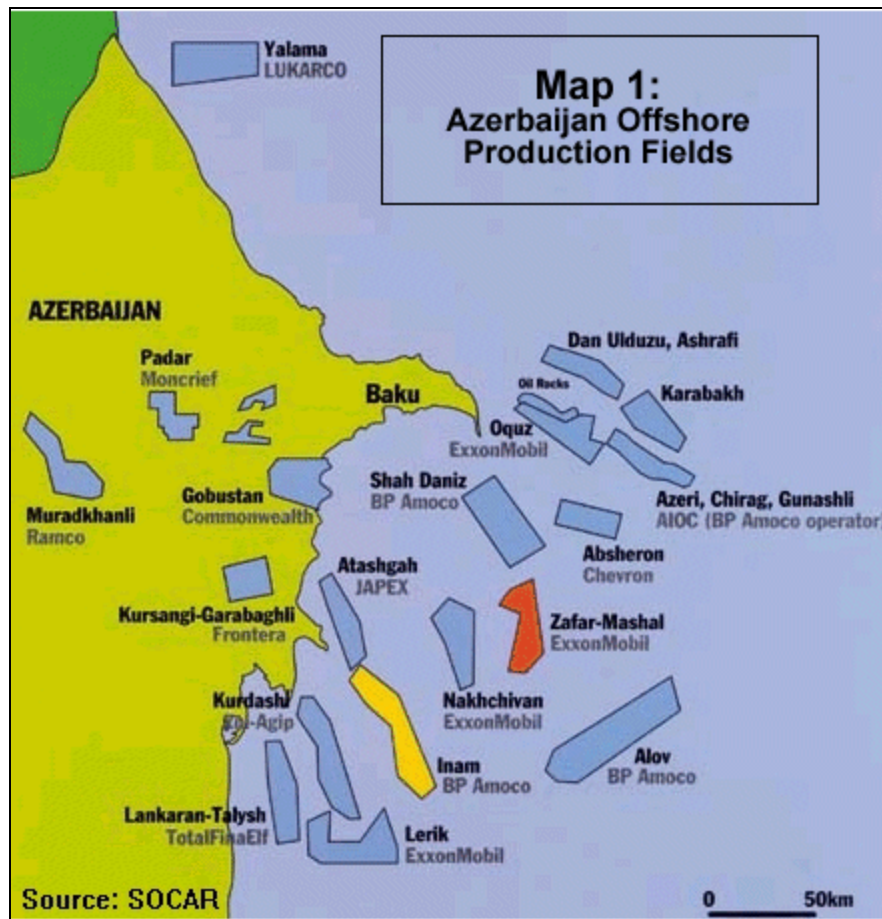
As a result, in August 2002 SOCAR began efforts to independently rehabilitate shallow-water Guneshli by adding new production platforms. By the fall of 2004, SOCAR announced the recommissioning of several new wells with improved production capacities, but by 2005 Guneshli's stock of wells had only increased by six, and the company plans to complete only three new wells during the first half of 2006 due to material shortages.

SOCAR also operates 40 other older fields (both on- and off-shore), many of which are considered to be in similar disrepair and have been artificially stimulated for years using water injection. Press reports indicate that inefficiencies from aging equipment and largely depleted reservoirs have caused the cost of production of SOCAR's onshore crude oil to reach \$15-\$17 per barrel.

Azeri, Chirag, Deepwater Guneshli (ACG)

Although production from SOCAR's Soviet-era fields are in decline, foreign direct investment since independence has revitalized the country's oil sector through the development of large-scale new projects and the refurbishment of existing facilities. To date, Azerbaijan has signed over 20 major field agreements with approximately 30 companies from 15 countries. (For a listing of these agreements, see: [Azerbaijan Production Sharing Agreements](#))

Azerbaijan's increase in oil production since 1997 has mainly come from the international consortium known as the [Azerbaijan International Operating Company \(AIOC\)](#), which represents over 70 percent of Azerbaijan's total oil exports. AIOC (partners: BP, Chevron, SOCAR, Inpex, Statoil, ExxonMobil, TPAO, Devon Energy, Itochu, Delta/Hess) operates the offshore Azeri, Chirag, and deep water Guneshli (ACG) mega-structure (see Map 1), which is estimated to contain proven crude oil reserves of 5.4 billion barrels according to the field's operator and largest stakeholder, British Petroleum. In 2005 SOCAR raised its assessment of the field's recoverable reserves from 5.4 billion barrels to 6.9 billion barrels.



The start of oil production from the Central and West Azeri fields in the ACG complex increased AIOC production from 140,000 bbl/d in January 2005 to roughly 420,000 bbl/d in May 2006. Adding to the existing 140,000 bbl/d of “early” oil production from the Chirag field, output from the Central Azeri field began in February 2005. Production at Central Azeri averaged roughly 240,000 bbl/d at the end of 2005 from eight pre-drilled wells. Operator BP began re-injection of natural gas at the Central Azeri field in May 2006, which enabled the field to stop routine natural gas flaring and to support well pressure and oil production. The West Azeri field began production in late December 2005 at a plateau rate of 300,000 bbl/d and will add to production growth during 2006. Production of oil from East Azeri is planned to come on stream early in 2007 as part of the second phase of ACG. In total, oil production from AIOC and SOCAR fields is slated to reach approximately 800,000 bbl/d by 2007 and around 1 million bbl/d by 2010, following the completion of Phase 3.

Upstream Oil Investment

BP sources said talks on a possible fourth phase, which includes an additional platform to be installed in an undeveloped area between the Chirag and Guneshli fields, is active again after losing momentum during 2005. Outside of the ACG field, not all of Azerbaijan's foreign investment projects have been successful, with several projects announcing disappointing drilling results and several [production sharing agreements](#) (PSAs) shutting down in recent years. Besides the ACG project, many of Azerbaijan's offshore prospects have been relatively disappointing in contrast to the high expectations for the Caspian Sea region during the 1990s.

Most recently, the failure of ExxonMobil and Lukoil to discover commercially viable hydrocarbon reserves at the Zafar-Mashal and Yalama blocks, respectively, will lower future production estimates from Azerbaijan's offshore area. The first well at Zafar-Mashal was the deepest in the Caspian Sea, reaching a total depth of over 22,000 feet (6,600 meters) and was the most expensive at around \$100 million. Exxon Mobil announced in January 2006 that it will pay the Azerbaijani government \$32 million claim to exit exploration at the Zafar-Mashal field. The Yalama Block was the last drilling program underway in offshore Azerbaijan. Finally, without an agreement on the maritime borders in the Caspian Sea, entire fields have been left untapped due to the lack of clarity on ownership.

Oil Exports

During 2004, Azerbaijan exported approximately 211,000 bbl/d, but exports are expected to more than double to 478,000 bbl/d in 2006 and reach as high as 1.1 million bbl/d by 2008 according to

Azeri government estimates. Implicitly, the government estimates assume additional production from new offshore discoveries as well as the modernization of old fields.

BTC

On May 25, 2005 Azerbaijan began filling the Azeri section of the long-awaited Baku-T'blisi-Ceyhan (BTC) pipeline that runs 1,040 miles from the Azeri capital city of Baku, via Georgia, to the Mediterranean port of Ceyhan. At a cost of almost \$4 billion, the BTC pipeline allows oil to bypass the crowded Bosphorus and Dardanelles Straits. Test filling began in early May 2005, and the [BP-led consortium](#) loaded its first tanker on July 13, 2006. For more information about the significance of the pipeline, please consult the [Caspian Regional Analysis Brief](#).

Other Export Options

Currently, Azerbaijan's other export routes are the Baku-Novorossiysk pipeline ("northern route"), which sends approximately 50,000-90,000 bbl/d of Azeri (and exclusively SOCAR) crude oil to the Russian Black Sea. The Baku-Novorossiysk pipeline closed briefly in late June 2004 after oil thieves set off an explosion when they attempted to steal oil from the pipeline. The Azeri state company began reducing oil exports via the Baku-Novorossiysk pipeline in August 2005 in order to divert crude to the BTC line, once it becomes operational. Some Azeri government officials have hinted that SOCAR will stop using the Novorossiysk route once BTC becomes fully operational because it will no longer be economic to have higher quality Azeri crude oil mixing with Russian-based Urals blends. The crude oil mixing has decreased the price of pure 'Azeri light' at the port of Novorossiysk by as much as \$4-5 per barrel. [AIQC](#) will, however, continue to export oil via pipeline and rail from Baku to Supsa (also called the Western early oil pipeline) and to Batumi on the Georgian Black Sea coast. (see [Map 2, PDF, high Res](#)). The Baku-Supsa line has an estimated capacity of 155,000 bbl/d and the Exxon and Azpetrol rail links to Batumi has 120,000 bbl/d of transport capacity.

Early in June, a small pipeline was completed to allow Exxon's share of ACG production to be pumped direct from BP's Sangachal terminal to the nearby Azpetrol rail tank-car terminal in Azerbaijan. Before the startup of BTC, Batumi offers shippers like Exxon the ability to keep their Azeri Light crude oil streams isolated in the rail system and maintain their price premium over the regional Russian Urals blend. ExxonMobil launched shipments in June 2005 and has since committed itself to supplying over 70 million barrels of oil over five years (roughly 40,000 bbl/d) via Batumi. The company will continue to use its 8 percent share of Baku-Supsa to which it is entitled to as an ACG shareholder. Since it is not a member of the BTC consortium, it will avoid paying some of the capital costs of the pipeline.

During the summer of 2004, Iranian president Mohammad Khatami visited Baku and discussed a North-South transport corridor stretching from Russia to Iran. Although relations between Azerbaijan and Iran remain tense, Khatami's visit may lead to improved trade and economic cooperation and oil export options. During the first half of 2005, gasoline shipments averaged around 10,000 bbl/d. As more crude oil export options become feasible, Azerbaijan plans to decrease refined product shipments beginning in June to a level of around 2,800 bbl/d.

Downstream/Refining

Azeri crude oil is refined domestically at two refineries: the Azerineftyag (Baku) refinery, with a capacity of 239,000 bbl/d; and the Heydar Aliev (formerly called Azerneftyanajag) refinery, which has a capacity of 160,000 bbl/d. Overall refinery utilization rates are as low as 40 percent. [Middle distillates](#) (e.g. diesel fuel, gasoline, kerosene) comprise the majority of Azeri refinery output.

Liquefied Petroleum Gas (LPG)

Azerbaijan also produces liquefied petroleum gasses (LPGs) at the Heydar Aliev refinery. In 2005 the plant produced 1.8 million barrels, 127,000 of which was exported. SOCAR forecasts production growth of around 1.6 percent in 2006.

At a cost of \$120-140 million, Azerbaijan plans to build two high-quality gasoline production units at the Baku Heidar Aliyev refinery (formerly known as Azerneftyanajag refinery) between 2006 and 2008, boosting production by almost 50 percent. Azerbaijan's automobile gasoline output rose 6.4% on the year to 7.7 million barrels in 2005.

Both of the country's refineries are in need of modernization and pollution control equipment. Under a \$500 million modernization project approved in 2004, new equipment will be installed at both refineries and at the specialized port of Dubendi to increase throughput to 260,000 bbl/d by 2010.

Natural Gas

With the addition of According to the *Oil and Gas Journal*, Azerbaijan has proven natural gas reserves of roughly 30

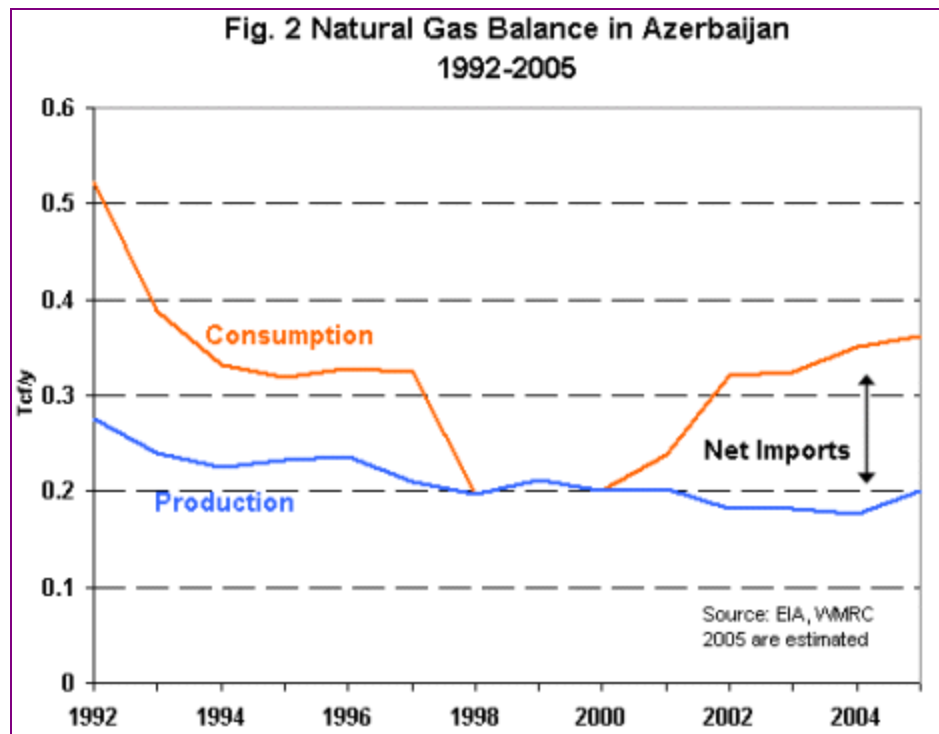
the Shah Deniz natural gas and condensate field and the South Caucasus Pipeline (SCP), Azerbaijan can become a large natural gas provider to Turkey and to Europe in the upcoming decade.

trillion cubic feet (Tcf), and BP estimates the country has 48 Tcf of proven reserves. In 2004, state statistics showed that the country extracted 177 billion cubic feet (Bcf), a 4.4 percent increase from 2003. Roughly 77 percent of natural gas production in Azerbaijan is produced by Azneft, a SOCAR subsidiary, and the rest is produced by joint ventures (the largest of which is AIOC). State officials project that Azerbaijan will produce up to 390 Bcf by 2008. But until the requisite infrastructure is completed (see Natural Gas Trade), natural gas is being flared off instead of being piped to markets. As a result, Azerbaijan is currently importing roughly four times more natural gas than it was in 2001. Besides higher economic growth rates, one main cause of the newfound natural gas dependency is that oil-fired power plants have been converted into gas-fired ones. This has forced Azerbaijan to import roughly 160-175 bcf per year from Russia at a price of \$1.70 per 1,000 cubic feet (mcf), up from \$1.47 per mcf in 2004.

Upstream

Virtually all of Azerbaijan's natural gas is produced from offshore fields. The country's leading natural gas producer, the Bakhar oil and gas field, is located off the southern tip of the Absheron Peninsula and currently accounts for slightly over half of the country's natural gas output. Output at Bakhar has been declining in recent years, and according to press reports, SOCAR has begun efforts to develop a new deposit, known as Bakhar-2 located adjacent to Bakhar. SOCAR reportedly has plans to utilize some of the Bakhar-2 natural gas production for export in the near future. In just the past year, SOCAR completed construction of a \$29 million Bakhar-Neftyanıye Kamni pipeline, which it hopes will help double gas transport from the Gunashli field by 2010. Planned capacity is roughly 194 million cubic feet/day (mmcf/d). Production from the Gunashli field accounts for approximately 50 percent of the natural gas produced in the country.

Over the next 10 years, SOCAR plans to invest \$224 million to expand natural gas production (see Fig. 2) in Azerbaijan by drilling 23 gas wells in the shallow-water Gunashli field, by expanding existing platforms, and by building underwater gas pipelines. The company hopes this will help increase production to around 330 bcf/y by 2010.



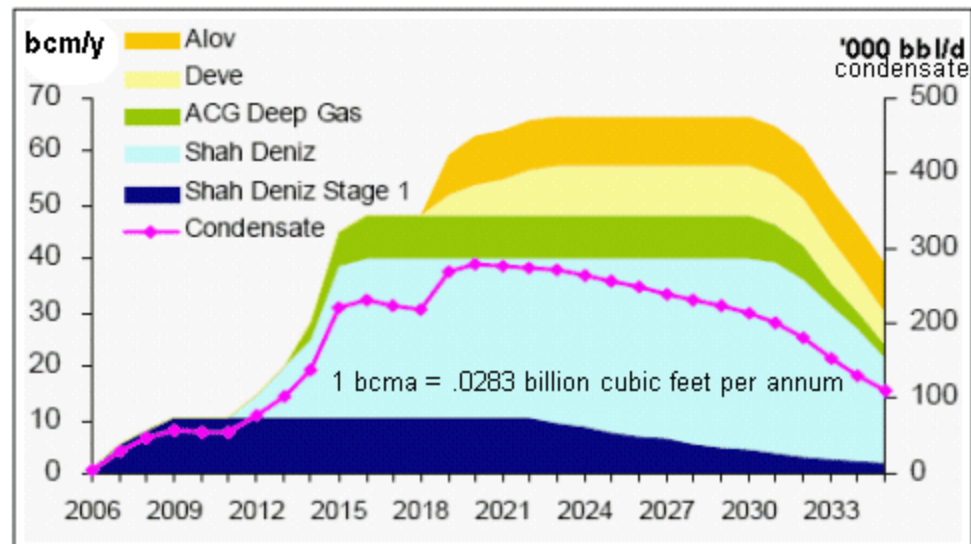
Shah Deniz

Azerbaijan's major natural gas production increases in the future are expected to come from the development of the Shah Deniz offshore natural gas and condensate field. Industry analysts estimate that Shah Deniz is one of the world's largest natural gas field discoveries of the last 20 years. According to the project's operator, BP, the field contains "potential recoverable resources" of roughly 15 Tcf of natural gas and 600 million barrels of condensate. However, other industry and trade sources, employing widely different definitions of "reserves", estimate the field's size to be as high as 35 Tcf. Shah Deniz is located offshore, approximately 60 miles southeast of Baku (see Map 3), and is being developed by the Shah Deniz consortium (members: BP, Statoil, SOCAR, LukAgip, NICO, TotalFinaElf, and TPAO). The Shah Deniz production sharing agreement was signed in 1996.

The first phase of the Shah Deniz field's development was officially approved on February 27, 2003, and estimates place its cost at over \$4 billion, a 25 percent increase from previous estimates. Phase 1 entails the installation of a new fixed offshore platform, two subsea pipelines to bring the hydrocarbons ashore, and a new onshore gas-processing terminal to be erected adjacent to the existing oil terminal at Sangachal, near Baku. [Shah Deniz consortium members](#) expect to begin producing natural gas for export during late 2006. Until the South Caucasus Pipeline comes online, Georgia will buy some of the natural gas and leave it in storage until the Turkish section of the pipeline is complete. According to the partners, once the new pipeline infrastructure is in place, Shah Deniz will be capable of producing approximately 350 Bcf of natural gas per year as early as 2009 (roughly on par with 2004 natural gas production from Kuwait) as well as 40,000 bbl/d of condensate. Natural gas from Shah Deniz, as well as associated gas from ACG and the Bakhar-2 project, is expected to make Azerbaijan self-sufficient in natural gas, and it will result in significant export revenues.

The second phase of the Shah Deniz project is set to produce an additional 1 Tcf per year of natural gas as early as 2015 according to BP.

Figure 3: Potential Gross Natural Gas Production



Source: BP Azerbaijan, May 2006

Natural Gas Trade

Despite the large Shah Deniz natural gas field, Azerbaijan is currently a net natural gas importer. Azerbaijan produced 190 billion cubic feet (Bcf) of natural gas in 2004, while consuming roughly 360 Bcf.

The long-term contract with Gazprom, Russia's largely state-owned gas company, came into effect on January 1, 2004 and lasts until December 31, 2008. Azerbaijan's natural gas dependency is a temporary security issue due to pipeline sabotage in southern Russia and political disputes over natural gas pricing between Russia and Turkmenistan. As natural gas production from domestic fields like Shah Deniz increases, this dependency on Russian natural gas imports will decrease.

South Caucasus Pipeline (SCP)

Azerbaijan currently lacks any infrastructure for the export of natural gas. However, efforts are currently underway to secure export routes and customers for gas deliveries beginning in 2006. The main conduit for Azerbaijan's natural gas exports will be the "[South Caucasus Pipeline](#)," also known as "Baku-T'bilisi-Erzurum," which will run parallel to the Baku-T'bilisi-Ceyhan oil pipeline for most of its route before connecting to the Turkish gas pipeline network near the town of Horasan (see Map 3). The \$1.3 billion pipeline's capacity is expected to carry 233 Bcf per year initially and can be increased later up to 700 Bcf with the future addition of compression stations. Pipeline construction activities began in late 2004 and will be completed during the first quarter of 2007. BP holds a 25.5 percent stake in the project, Norway's Statoil holds also 25.5 percent shares, with the State Oil Company of Azerbaijan Republic SOCAR, Russia's Lukoil, Turkey's TPAO, France's Total, and Iran's NICO holding around 10 percent each.

The SCP consortium has dual operatorship with BP as the technical operator responsible for

construction and operation of the SCP facilities. Statoil, as commercial operator, is responsible for SCP's business development and administration.

On March 12, 2001, Azerbaijan signed its first major natural gas export deal when it concluded an agreement to supply Turkey with natural gas beginning in 2004. In February 2003 the deal was renegotiated, intended for exports to begin in 2006 at a rate of 71 Bcf per year, increasing to an average rate of 222 Bcf per year in 2009. Since the SCP's full integration into the Turkish network has not been completed, Georgia will take some of the natural gas and place it into storage. In the long term, doubts linger about Turkey's ability to consume and transport the quantities of gas that the country has agreed to purchase (for more on natural gas in Turkey see EIA's [Turkey Country Analysis Brief](#)).

Trade with Iran

Due to lingering tensions between Azerbaijan and Armenia, Azerbaijan began implementing a swap deal that provides natural gas to Azerbaijan's geographically separate Nakhchivan enclave. Azerbaijan is sending natural gas into Iran via the Baku Astara Pipeline, and Iran then delivers the gas via a new 30 mile pipeline into the enclave. Iran will receive a 15 percent commission on transit fees, which entail initially 2.47 Bcf during 2006, rising to 12.4 Bcf per year by 2009.

Electricity

Increased electricity generation will be required for Azerbaijan to meet rising electricity demand.

Azerbaijan's power sector has an installed generating capacity of approximately 5.5 gigawatts (GW). Eight state-owned thermal plants account for roughly 80 percent of generating capacity. The country also has six hydroelectric plants, all of which are owned by the state. Both electric generation and consumption have been relatively flat since independence, with generation totaling 20.4 billion kilowatt hours (Bkwh) in 2004 (85 percent of which is conventional thermal generation), and consumption of 20.6 Bkwh. Due to the recent startup of the BTC pipeline, power demand in Azerbaijan is expected to grow during 2006 and 2007. Because of the country's inefficient distribution network, Azerbaijan must import some of its power to make up for transmission losses (7 percent of total generation in 2004).

Trade

Without electricity capacity growth to take advantage of the country's new fuel sources, Azerbaijan will continue to need to import electricity from its neighbors. The most recent data show that for the six month period of January to June 2006, Azerbaijan has cut electricity imports by 11 percent from 2005. On average, Azerbaijan imports roughly 2.1 Bkwh, slightly under 10 percent of its total consumption. In order to supply electricity to all parts of the country (including the Nakhchivan enclave), Azerbaijan imports power from Russia, Turkey, Iran, and Georgia. Russia and Azerenergy plan to resign a nine-month bilateral electricity trade accord which expires on November 30, 2006. Russia currently supplies Azerbaijan with electricity at 3.636 cents per 1 kWh, and Azerbaijan supplies Russia at 1.6 cents per kWh. Azerbaijan's imports 150,000 nWh from Iran and around 575,000 kWh from Turkey into the Nakhchivan Autonomous Republic (NAR).

Electricity sector structure

Although state electric company Azerenergy has a monopoly on power generation, the country's national electricity network is divided into five regional grids—Baku; Nakhchivan; North (Sumqayit); South (Ali Bayramli); and West (Ganja)—each of which has been opened to foreign investors via open joint stock companies. Built during the Soviet era, Azerbaijan's power infrastructure is in generally poor condition, with minimal public investment and maintenance since independence. The country's economic contraction during the mid-1990s, along with systemic problems—such as prices capped below market rates and frequent non-payment by customers—have left Azerbaijan's power sector without sufficient capital to upgrade aging power-generation facilities.

The international donor community has undertaken several projects to restore and add new capacity to Azerbaijan's power sector. These include a \$53 million loan by the World Bank to build the 4,000 megawatt (MW) Yenikand hydroelectric plant (completed in May 2000), and the European Bank for Reconstruction and Development's (EBRD) roughly \$21 million loan (in conjunction with the Islamic Development Bank and the European Union) for reconstruction of the 360-MW Mingechaur hydroelectric station on the Kura River (completed in 2001). The EBRD also plans to loan money to Azerenergy to overhaul its 2,400 MW Thermoelectric Power Station (TPS). The TPS was built during the 1980s and is the largest generator in the South Caucasus.

Restructuring

Currently, below-cost tariff levels, low payment collections, and inadequate private sector funding have made rehabilitating the power sector difficult. Recent reform plans have been announced that will help upgrade Azerbaijan for the expected strain economic growth will have on its electricity infrastructure. In May 2004 Russia's dominant electricity group, UES, signed an agreement with AzerEnergy to construct new networking infrastructure to help bolster Russia's electricity exports to Azerbaijan and to neighboring Iran. Also, in May 2005 the World Bank

announced a \$48 million program to improve transmission performance. Plans entail upgrading the electricity dispatch system that would facilitate financial settlements in a future wholesale electricity market, investing in new high-voltage transmission lines and substations, and improving Azerenerji's management systems for future energy sector restructuring.

Maps and Tables

Tables

[Producer Sharing Agreements \(PSA\) – Updated August 2006](#)

Bosphorus Bypass Options (please click below for a full map)



(Source: CIA/DI Cartography Center) – [click for high resolution version](#)

Caspian Sea Region Fields Map ([click for a high resolution version](#))



(Source: CIA/DI Cartography Center) – click for high resolution version

Caspian Region Oil Pipelines



(Source: CIA/DI Cartography Center) – click for high resolution version

Caspian Region Natural Gas Pipelines



(Source: CIA/DI Cartography Center) – click for high resolution version

Other Maps:

[Oil Pipelines to China](#)

[Gas Pipelines to China](#)

Other Non-U.S. Government Maps:

- [University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(North Region\)](#)
- [University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(South Region\)](#)
- [University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(Legend\)](#)

Profile

Country Overview

Chief of State	President Ilham ALIYEV (since 31 October 2003)
Head of Government	Prime Minister Artur RASIZADE (since 4 November 2003)

Location	Southwestern Asia, bordering the Caspian Sea, between Iran and Russia, with a small European portion north of the Caucasus range
Independence	30 August 1991 (from Soviet Union)
Population (2005E)	7,911,974
Languages	Azerbaijani (Azeri) 89%, Russian 3%, Armenian 2%, other 6% (1995 est.)
Religion	Muslim 93.4%, Russian Orthodox 2.5%, Armenian Orthodox 2.3%, other 1.8% (1995 est.) note: religious affiliation is still nominal in Azerbaijan; percentages for actual practicing adherents are much lower
Ethnic Group(s)	Azeri 90.6%, Dagestani 2.2%, Russian 1.8%, Armenian 1.5%, other 3.9% (1999 census) note: almost all Armenians live in the separatist Nagorno-Karabakh region

Economic Overview

Minister of Economic Development	Heyday Babayev
Currency/Exchange Rates (End 2005)	4,593 Manat/US\$
Inflation Rate (2005E)	9.6%
Nominal Gross Domestic Product (2005E)	\$13 Billion at Market Exchange Rates
Real GDP Growth Rate, (2005E)	26.4%
Unemployment Rate (2005)	1.5%
External Debt (2005E)	\$1.873 Billion
Merchandise Exports (2005E)	\$7.65 Billion
Exports - Commodities	oil and gas 90%, machinery, cotton, foodstuffs
Exports - Partners (2004E)	Italy 31.1%, Czech Republic 14.5%, Germany 9.4%, Turkey 6.1%, Russia 6%, Georgia 5.3%, France 4.9%
Merchandise Imports (2005E)	\$4.35 Billion
Imports - Commodities	machinery and equipment, oil products, foodstuffs, metals, chemical
Imports - Partners (2004E)	UK 13.9%, Russia 13.1%, Turkey 11.5%, Germany 8%, Netherlands 5.3%, China 5%, US 4.7%, Italy 4.5%, Ukraine 4.3%
Current Account Balance	\$167 Million (2005)

Energy Overview

Minister of Oil/Energy/whatever	Natiq Aliiev
Proven Oil Reserves (January 1, 2006E)	7 billion barrels
Oil Production (2006E)	579.6 thousand barrels per day, of which 99% was crude oil.
Oil Consumption (2005E)	132 thousand barrels per day
Crude Oil Distillation Capacity (2006E)	399 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2006E)	30 trillion cubic feet
Natural Gas Production (2004E)	200 billion cubic feet
Natural Gas Consumption (2004E)	351 billion cubic feet
Recoverable Coal Reserves (2003E)	None
Coal Production (2004E)	None
Coal Consumption (2004E)	None
Electricity Installed Capacity (2004E)	5.5 gigawatts
Electricity Production (2004E)	20.4 billion kilowatt hours
Electricity Consumption (2004E)	20.6 billion kilowatt hours

Total Energy Consumption (2004E)	0.7 quadrillion Btus*, of which Natural Gas (51%), Oil (42%), Hydroelectricity (4%), Coal (0%), Nuclear (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	75.8 million Btus
Energy Intensity (2003E)	22,547.5 Btu per \$2000 -PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	36.5 million metric tons, of which Oil (51%), Natural Gas (49%), Coal (0%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	4.4 metric tons
Carbon Dioxide Intensity (2003E)	1.3 Metric tons per thousand \$2000-PPP**
Environmental Issues	local scientists consider the Abseron Yasaqligi (Apsheron Peninsula) (including Baku and Sumqayit) and the Caspian Sea to be the ecologically most devastated area in the world because of severe air, soil, and water pollution; soil pollution results from oil spills, from the use of DDT as a pesticide, and from toxic defoliants used in the production of cotton
Major Environmental Agreements	party to: Air Pollution, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Marine Dumping, Ozone Layer Protection, Wetlands signed, but not ratified: none of the selected agreements

Oil and Gas Industry

Major Oil/Gas Ports	Baku, Sangachal (BTC)
Foreign Company Involvement	See PSA list
Major Oil Fields (production, bbl/d)	ACG (~400,000 bbl/d)
Major Natural Gas Fields (production, Bcf/d)	Shah Deniz (2006): 350 bcf per year by 2009
Major Pipelines (capacity, bbl/d)	BTC Pipeline (1 million bbl/d, 42"), Western Early Oil (155,000 bbl/d, 20"), Northern Early Oil (95,000 bbl/d, 20")
Major Refineries (capacity, bbl/d)	Azneftiyag—Baku (238,978), Azneftyanajag—New Baku (160,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

- [EIA: Country Information on Azerbaijan](#)
- [EIA: Environmental Brief on the Caspian Sea Region \(Feb. 2003\)](#)
- [EIA: Country Information on Iran](#)
- [EIA: Country Information](#)
- [EIA: Country Information on Russia](#)
- [EIA: Country Information on Central Asia \(Turkmenistan, Uzbekistan\)](#)

U.S. Government

- [U.S. Agency for International Development](#)
- [U.S. Department of Commerce, Business Information Service for the Newly Independent States \(BISNIS\)](#)
- [U.S. Department of Commerce, Country Commercial Guides](#)
- [U.S. Department of Commerce, Trade Compliance Center: Market Access Information](#)
- [CIA World Factbook](#)
- [U.S. Department of Energy, Office of Fossil Energy: International Affairs](#)
- [U.S. Department of State: Fact Sheet on Nagorno-Karabakh](#)
- [U.S. International Trade Administration, Energy Division](#)
- [Library of Congress Country Study on Iran](#)
- [Library of Congress Country Study on the former Soviet Union](#)
- [Radio Free Europe/Radio Liberty \(RFE/RL\)](#)
- [RFE/RL: Energy Politics in the Caspian and Russia](#)
- [U.S. Department of State: Background Notes](#)

[U.S. Department of State](#)
[U.S. Embassy, Baku](#)
[U.S. Treasury Department's Office of Foreign Assets Control](#)

General Information

[Amnesty International: Human Rights on the Line—The Baku-Tbilisi-Ceyhan Pipeline Project](#)
[Azerbaijan International](#)
[Azerbaijan Internet Links](#)
[Caspian Development and Export page](#)
[Caspian Pipeline Consortium](#)
[Caspian Sea News](#)
[Central Asia-Caucasus Institute of The Johns Hopkins University](#)
[Embassy of the Russian Federation in the United States](#)
[Energy Russia: website of the Centre for Energy Policy in Moscow, Russia](#)
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[President Heydar Aliyev's Home Page](#)
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[The Times of Central Asia](#)
[TRACECA](#)
[United Nations Framework Convention on Climate Change and the Kyoto Protocol](#)
[U.S.-Azerbaijan Chamber of Commerce](#)
[The Washington Post](#)
[World Bank](#)

Associations and Institutions

[Columbia University: Russia Subject Index](#)
[Harvard University: Caspian Studies Program](#)
[University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(North Region\)](#)
[University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(South Region\)](#)
[University of Texas: Perry-Castaneda Map Collection: Link to Detailed Map of Caspian Sea \(Legend\)](#)

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