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COUNTRY ANALYSIS BRIEFS

Iran

Last Updated: Feb. 17, 2012

Background

Iran holds the world's fourth-largest proven oil reserves and the world's second-largest natural gas reserves. International sanctions and unfavorable investment terms, however, have impeded developments across the energy sector.

Iran, a member of the Organization of the Petroleum Exporting Countries (OPEC), ranks among the world's top four holders of both proven oil and natural gas reserves. In 2010, Iran was the third-largest exporter of crude oil globally after Saudi Arabia and Russia. However, falling production and increases in domestic consumption will continue to squeeze the volumes of oil available for export in recent years.

Iran has the world's second largest natural gas reserves but the sector is under-developed and used mostly to meet domestic demand. Natural gas accounts for 54 percent of Iran's total domestic energy consumption. Most of the remainder of energy consumption is attributable to oil, with marginal contributions from coal and hydropower. Iran is expected to increase natural gas production from its offshore South Pars natural gas field in the Persian Gulf, an integral component of energy sector expansion plans.

International sanctions enacted in the summer of 2010 have slowed progress across the energy sector, especially affecting upstream investment in both oil and natural gas projects. The United States, United Nations, the European Union, and a number of European and Asian countries have targeted the Iranian energy sector with sanctions of varying degrees of stringency. These have prompted a number of international energy companies to pull out of upstream projects. Sanctions have also impeded the import of refined products, prompting efforts to boost domestic production and curb rising demand in Iran.

The Strait of Hormuz, on the southeastern coast of Iran, is an important route for oil exports from Iran and other Persian Gulf countries. At its narrowest point the Strait of Hormuz is 21 miles wide, yet an estimated 17 million bbl/d flowed through it in 2011 (35 percent of all seaborne traded oil and 20 percent of oil traded world-wide). In addition to oil, liquefied natural gas (LNG) volumes also flow through the Strait. In total, about 70 million tons of LNG flowed through the Strait

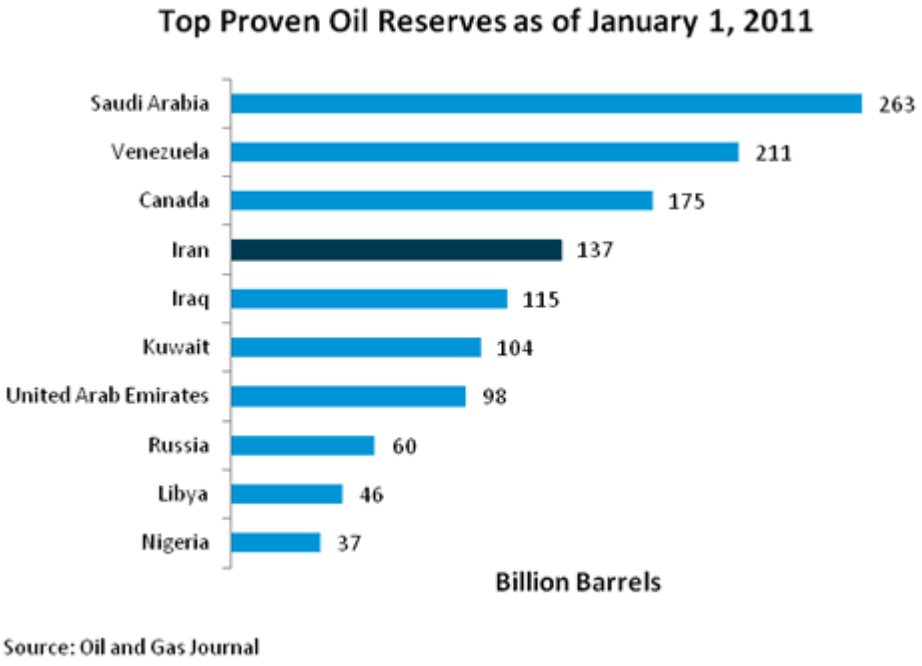
between January and October 2011.

Oil

Iran is OPEC's second-largest oil producer and the third-largest crude oil exporter in the world.

According to *Oil & Gas Journal*, as of January 2011, Iran has an estimated 137 billion barrels of proven oil reserves, 9.3 percent of the world's total reserves and over 12 percent of OPEC reserves. In July 2011, OPEC released its 2010 Annual Statistical Bulletin which raised Iran's proven reserves to more than 151 billion barrels of crude. Some analysts are skeptical of this estimate, however, as Iran revised its reserves a week after Iraq had revised its own, leading some to speculate the move was political.

Over 50 percent of reserves are confined to six supergiant fields. Of those onshore reserves, 85 percent are located in the southwestern Khuzestan Basin near the Iraqi border. Iran's crude oil is generally medium in sulfur content and in the 28°-35° API range. Iran faces continued depletion of its production capacity, as its fields have relatively high natural decline rates (8-13 percent), coupled with an already low recovery rate of around 20-30 percent. Sanctions and prohibitive contractual terms have impeded the necessary investment to halt this decline.



Source: Oil and Gas Journal

Sector Organization

The state-owned National Iranian Oil Company (NIOC), under the supervision of the Ministry of Petroleum, is responsible for all upstream oil projects, encompassing both production and export infrastructure. The National Iranian South Oil Company (NISOC), a subsidiary of NIOC, accounts for 80 percent of oil production covering the provinces of Khuzestan, Bushehr, Fars, and Kohkiluyeh and BoyerAhmad. Nominally, NIOC also controls the refining and domestic distribution networks, by way of its subsidiary, the National Iranian Oil Refining and Distribution Company (NIORDC), although functionally there is a separation between the upstream and downstream sectors.

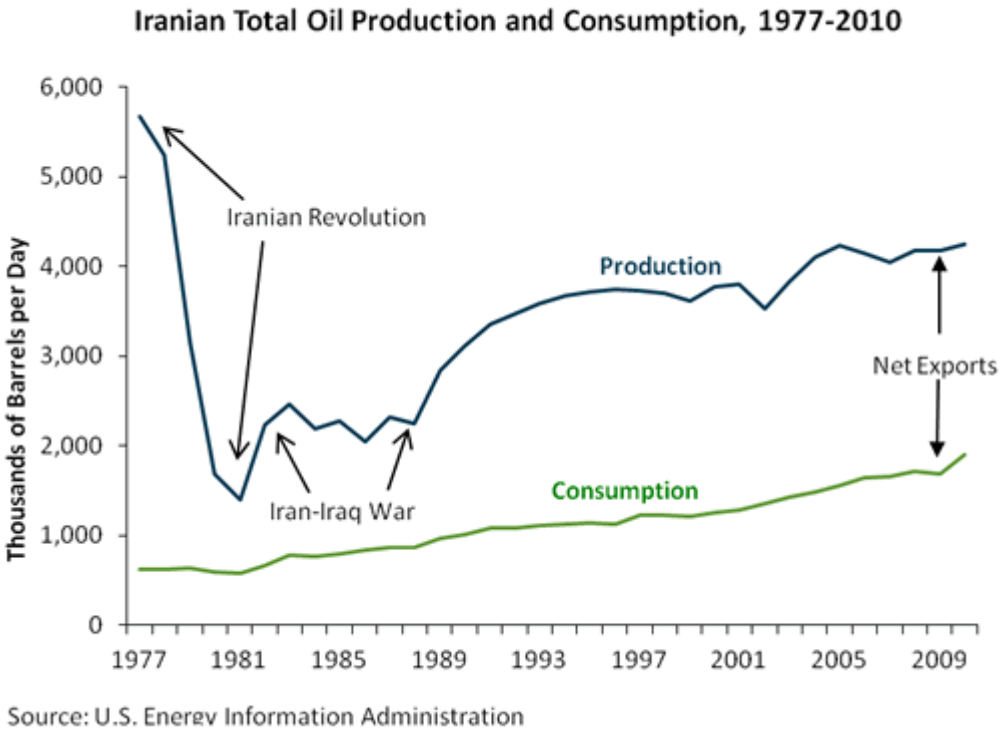
The Iranian constitution prohibits foreign or private ownership of natural resources. The government permits buyback contracts that allow international oil companies (IOCs) to enter into exploration and development contracts through an Iranian affiliate. The contractor receives a remuneration fee, usually an entitlement to oil or gas from the developed operation, leaving the contractor to provide the necessary capital up-front. Once development of a certain field is complete, however, operatorship reverts back to NIOC or the relevant subsidiary.

Exploration and Production

Iran is OPEC's second-largest producer after Saudi Arabia. In 2010, Iran produced approximately 4 million barrels (bbl) of total liquids per day, of which roughly 3.7 million bbl/d was crude oil, equal to about 5 percent of global production. Thus far in 2011, it is estimated that Iran's crude production has been approximately 3.6-3.65 million bbl/d, still above its former OPEC production target of 3.34 million bbl/d. Iran has 40 producing fields (27 onshore and 13 offshore), with onshore fields comprising 71 percent of total reserves.Currently, Iran's largest producing field is the onshore Ahvaz field, followed by the Maroun field, both located in Khuzestan province.

As of the June 2011 OPEC meeting, however, the production target system has been acknowledged as irrelevant, since no formal agreement on production levels could be reached. Saudi Arabia had proposed an increase of 1.5 million bbl/d, but Iran in particular spearheaded an effort to block such an increase, leaving Saudi Arabia, Kuwait, and the United Arab Emirates to boost production independently.

Since the 1970s, Iran's production has varied greatly. Iran averaged production of over 5.5 million bbl/d of oil in 1976 and 1977, with production topping 6 million bbl/d for much of the period. Since the 1979 revolution, however, a combination of war, limited investment, sanctions, and a high rate of natural decline in Iran's mature oil fields have prevented a return to such production levels. An estimated 400,000-700,000 bbl/d of crude production is lost annually due to declines in the mature oil fields. To offset natural decline rates, Iran's oil fields require structural upgrades including enhanced oil recovery (EOR) techniques such as natural gas injection, which has put even greater strain on energy supply due to rising demand for natural gas domestically.



Iran's reserves are not confined to the southwest and offshore Persian Gulf, creating potential for further discoveries. Iranian has oil reserves under the Caspian Sea, but exploration and development of these reserves have been at a standstill due to territorial disputes with neighboring Azerbaijan and Turkmenistan. Iran also shares a number of both onshore and offshore fields with neighboring countries, including Iraq, Qatar, Kuwait, and Saudi Arabia.

There were a number of new discoveries in Iran over the past couple of years. In May 2011, NIOC announced a discovery of a deposit of light oil (35° API gravity) in the Khayyam field, offshore in the Hormuzgan province. The field had been discovered in 2010 but was originally classified as a gas field. According to the NIOC, the volume of in-place oil at this field is 758 million barrels, of which around 170 million barrels are recoverable. Also in May 2011, Iran announced the discovery of new onshore oil fields in its south and west with an estimated half a billion barrels of reserves. In late 2010, Iran claimed the discovery of new crude finds near gas reservoirs in the Persian Gulf, holding total in-place reserves of more than 40 billion barrels of oil, however recoverable reserves could be less than 10 billion barrels.

Upstream Projects

There are few upstream oil projects in development, and those that are proceeding have been slowed by the loss of expertise, technology and funding in the wake of various sanctions. The most promising prospects for a boost in production capacity comes from two specific projects: Azadegan and Yadavaran. Other current oil projects include Jofeir, Resalat, and Forouzan, all of which have been significantly delayed due to sanctions.

The Azadegan field was Iran's biggest oil find in 30 years when announced in 1999. It contains 26 billion barrels of proven crude oil reserves, but its geologic complexity makes extraction difficult. The field is separated into two portions: North and South Azadegan. China National Petroleum

Corporation (CNPC) is developing North Azadegan in a two-phase development with ultimate total production estimated at 150,000 bbl/d (75,000 bbl/d for each phase).

In 2004, a consortium of NIOC (25 percent) and Japan's INPEX (75 percent) signed an agreement for development of the southern portion of the Azadegan field. In 2006, INPEX lowered its stake to 10 percent and following growing pressure in the wake of sanctions last year; it pulled out of the project completely in October 2010. In September 2009, a subsidiary of CNPC, China National Petroleum Corporation International Limited (CNPCI), signed a memorandum of understanding (MOU) with NIOC to develop South Azadegan in two phases.

Yadavaran is the other promising upstream oil development project. China Petroleum & Chemical Corporation (Sinopec) signed a buyback contract at the end of 2007 to develop Yadavaran in two phases. The first will produce at a plateau of 85,000 bbl/d (by 2014), while the second will boost production to 185,000 bbl/d by 2016.

Over the past year, a number of new exploration projects have been undertaken and completed. The completed exploration projects include the Anaran Block, which consists of two large oil fields, Changooleh and Azar (expected to produce 67,000 bbl/d and 68,000 bbl/d, respectively). In addition, exploration projects in the Koohdasht, Garmsar, and Tousan Blocks have been completed, with disappointing results. Some of the exploration projects resulted in no successful gas and/or oil discoveries. Overall, according to FACTS Global Energy (FGE) , Iran's discoveries of crude oil and condensates totaled 10.7 billion barrels in 2010.

Exports

In 2010, Iran exported approximately 2.2 million bbl/d of crude oil. Iranian Heavy Crude Oil is Iran's largest crude export followed by Iranian Light. In 2010, Iran's net oil export revenues amounted to approximately $73 billion. Oil exports provide half of Iran's government revenues, while crude oil and its derivatives account for nearly 80 percent of Iran's total exports.

Iran's Top Export Destinations, 2010		
Country	000 bbl/d	Share of total (percent)
China	426	20
Japan	362	17
India	345	16
Italy	208	10
South Korea	203	9
Other	610	28
Total Exports	**2,154**	**100**

Source: Global Trade Atlas, U.S. Energy Information Administration

Data through the end of June 2011 show that Iranian exports are on track to remain over 2.2 million bbl/d, should exports continue at the same pace for the second half of the year. Based on the 6-month data, China, India, South Korea, and Turkey have increased their imports of Iranian crude oil thus far this year, as crude oil volumes are reallocated to the countries that have imposed less stringent sanctions on them. At the same time, export volumes to Italy and the UK have decreased at least in part due to sanctions imposed on the Iranian energy sector.

IRAN CRUDE OIL AND CONDENSATE EXPORTS FOR KEY COUNTRIES
January - June 2011

	Percent of Iran's Exports	Total Volume of Crude Imported from Iran ('000 b/d)	Iran as a Percentage of Total Crude Imported
European Union	**18**	**452**	
Italy	7	183	13
Spain	6	137	13
France	2	49	4
Germany	1	17	1
UK	<1	11	1
Netherlands	1	33	2
Others	1	22	1
Japan	**14**	**341**	**10**
India	**13**	**328**	**11**
South Korea	**10**	**244**	**10**
Turkey	**7**	**182**	**51**
South Africa	**4**	**98**	**25**
Sri Lanka	**2**	**39**	**100**
Taiwan	**1**	**33**	**4**
China	**22**	**543**	**11**

Source: Global Trade Atlas, APEX

Iran's oil exports also have been affected by sanctions. In 2011, Iran experienced significant problems with receiving payments from India for its exports, when the Reserve Bank of India halted a clearing mechanism due to sanctions. Some of the payments have been cleared through Turkish and UAE banks. More recently, NIOC announced that India has cleared all oil debts to Iran through Gazprombank of Russia and Iran has already received all overdue payments for its exports to India.

Export Terminals

Kharg Island, the site of the vast majority of Iran's exports, has a crude storage capacity of 20.2 million barrels of oil and a loading capacity of 5 million bbl/d. Lavan Island is the second-largest terminal with capacity to store 5 million barrels and loading capacity of 200,000 bbl/d. Other important terminals include Kish Island, Abadan, Bandar Mahshar, and Neka (which helps facilitate imports from the Caspian region).

Consumption and Downstream

Iran is the second-largest oil consuming country in the Middle East, second only to Saudi Arabia. Iranian domestic oil demand is mainly for diesel and gasoline. Total oil consumption was approximately 1.8 million bbl/d in 2010, about 10 percent higher than the year before. Iran has limited refinery capacity for the production of light fuels, and consequently imports a sizeable share of its gasoline supply. Iran's total refinery capacity in January 2011 was about 1.5 million bbl/d, with its nine refineries operated by the National Iranian Oil Refining and Distribution Company (NIORDC), a NIOC subsidiary.

The Iranian government subsidizes the price of refined oil products, however price reforms instituted in December 2010 removed some of the subsidies, which significantly affected gasoline consumption in Iran (see Gasoline section below). Iran is an overall net petroleum products exporter due to large exports of residual fuel oil.

Iran has had other difficulties with refinery capacity expansion recently. During the inauguration ceremony (led by Iran's president Mahmoud Ahmadinejad) of the Abadan refinery expansion, a gasoline unit blew up as a result of a gas leak. It took NIORDC four months to rebuild the unit and bring it online.

Finally, Iran plans to increase refining capacity with the aim to become self-sufficient for gasoline. Plans for capacity increases through expansions at existing refineries as well as planned greenfield refinery construction have been announced. Iran has issued permits to construct six new refineries with a combined refining capacity of 1.2 million bbl/d, however there has been little progress because of financing difficulties.

Iran's Refining Capacity, 2011	
Refinery	000 bbl/d
Abadan	350
Isfahan	284
Bandar Abbas	232
Tehran	220
Arak	170
Tabriz	100
Shiraz	40
Lavan Island	30
Kermanshah	25
Total Output	**1,451**

Source: Oil and Gas Journal, January 2011

Gasoline

Sanctions imposed on Iran have made it difficult for the country to import needed volumes of gasoline. The government has attempted to control consumption by implementing accelerated subsidy reform, resulting in a sharp increase in the price of gasoline. The subsidy reform spurred political opposition because of inflationary fears in the midst of an economic downturn. Furthermore, petrochemical plants were converted so that they can produce gasoline as a short-term measure. However, the converted plants produce low quality gasoline, causing significant environmental problems.

In 2010, Iran consumed around 400,000 bbl/d of gasoline, about 4 percent less than consumed in 2009. Iran does not currently have sufficient refining capacity to meet its domestic gasoline and other light fuel needs. However, the government has approved a number of expansions of existing as well as construction of new refineries with the aim to make Iran self-sufficient (and an exporter of gasoline).

Iranian gasoline imports were approximately 78,000 bbl/d in 2010, nearly 70 percent of total product imports. Current and proposed expansions of Iranian refineries likely will come online between 2012 and 2017. Iran is expected to remain a gasoline importer next year, however if proposed expansions occur as planned, it is possible the country will become a gasoline exporter in 2015.

Rationing and Subsidies

Iran's energy sector is characterized by inefficiency and the government heavily subsidizes energy prices, particularly gasoline. Since December 2010, private motorists pay approximately 40 cents per liter for the monthly quota of 60 liters and about 70 cents per liter on the market, according to FGE. These prices are significantly higher than the previous price of 10 cents per liter that motorists paid between December 2009 and December 2010. Furthermore, the government lowered the allowance from 100 liters to 60 liters per month.

U.S. Sanctions

As per the Iran Transactions Regulations, administered by the U.S. Department of Treasury's Office of Foreign Assets Control (OFAC), U.S. persons may not directly or indirectly trade, finance, or facilitate any goods, services or technology going to or from Iran, including goods, services or technology that would benefit the Iranian oil industry. U.S. persons are also prohibited from entering into or approving any contract that includes the supervision, management or financing of the development of petroleum resources located in Iran. See OFAC's Iran Transactions Regulations page for more information.

Pipelines

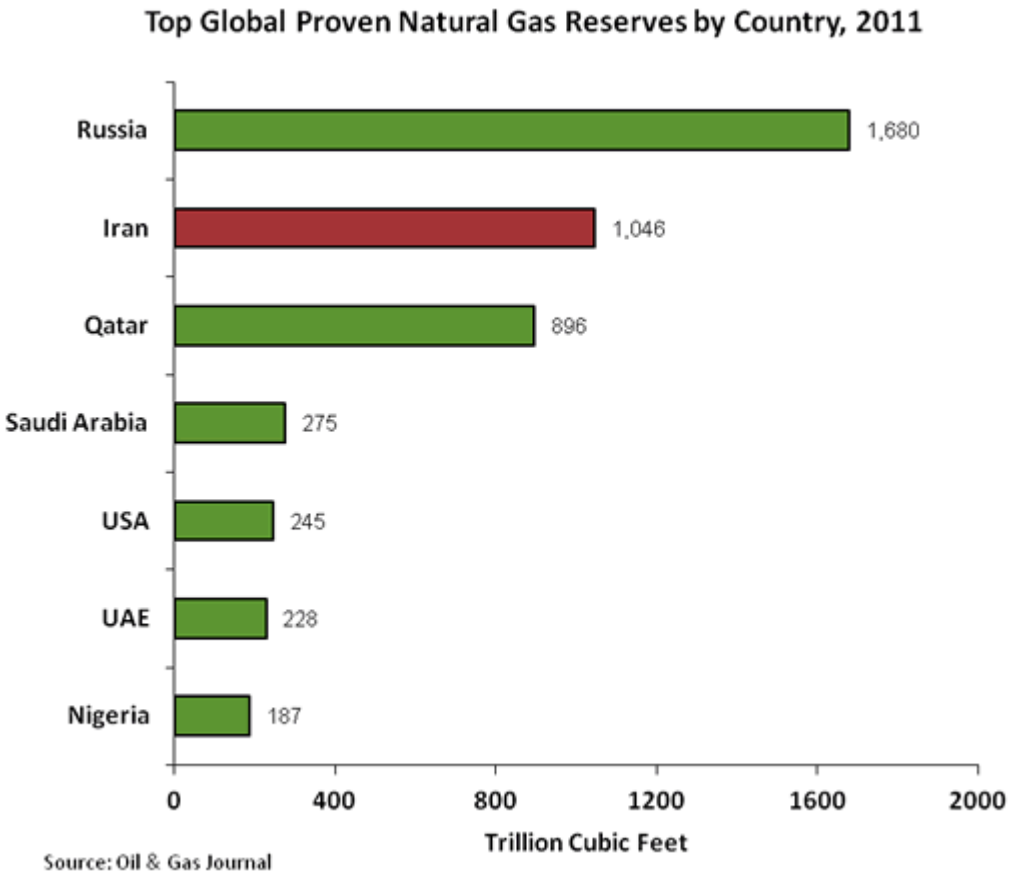
Iran has an expansive domestic oil network including more than 10 pipelines that run between 63 and 630 miles in length. Iran has invested in its import capacity at the Caspian port to handle increased product shipments from Russia and Azerbaijan, and enable crude swaps with Turkmenistan and Kazakhstan. In the case of crude swaps, the oil from the Caspian is consumed domestically in Iran, and an equivalent amount of oil is produced for export through the Persian Gulf with a Swiss-trading arm of NIOC for a swap fee.

According to FGE, Khatam Al-Anbia Construction Headquarters (KACH), the construction company controlled by Iran's Islamic Revolutionary Guard Corps (IRGC), was awarded a new contract by NIOC worth $1.3 billion to build two oil pipelines. The new oil pipelines will total 684 miles and will deliver crude oil from the Khuzestan Province to the Tehran oil refinery. In addition, KACH is constructing three other pipelines that will deliver crude oil and petroleum products. These include the Nayeen-Kashan, Rafsanjan-Mashhad, and Bandar Abbas-Rafsanjan pipelines.

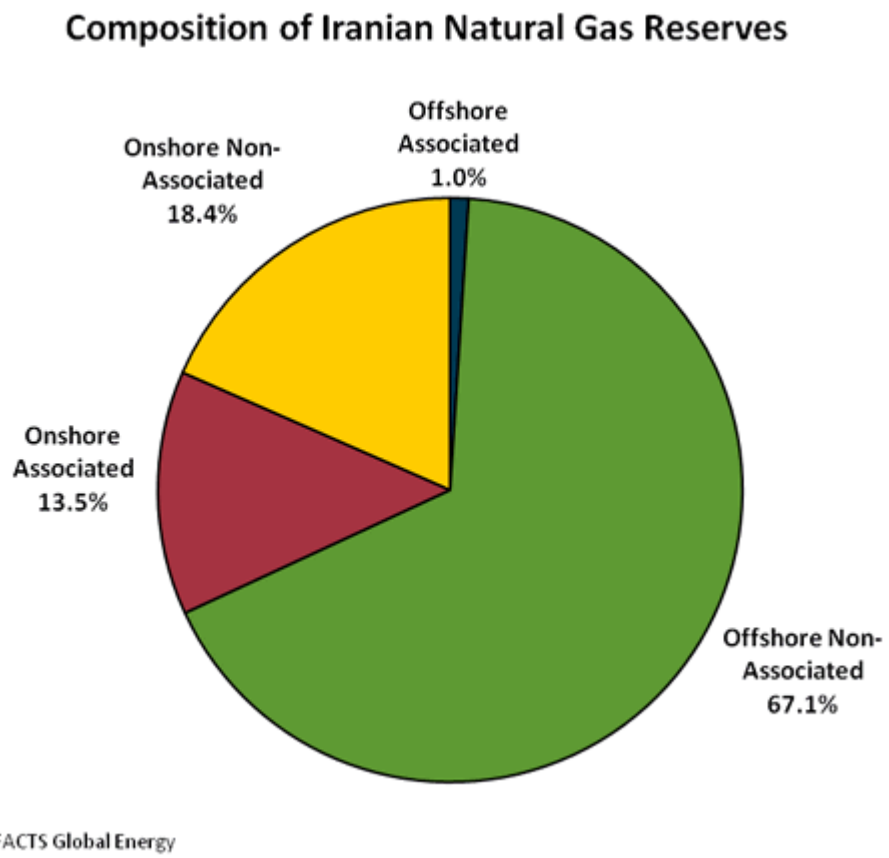
Natural Gas

In 2010, Iran was the world's fourth largest producer and third largest consumer of natural gas

According to *Oil & Gas Journal*, as of January 2011, Iran's estimated proven natural gas reserves stood at 1,046 trillion cubic feet (Tcf), second only to Russia. Over two-thirds of Iranian natural gas reserves are located in non-associated fields, and have not been developed. Major natural gas fields include: South and North Pars, Kish, and Kangan-Nar. In 2010, Iran produced an estimated 5.2 Tcf of dry natural gas and consumed an estimated 5.1 Tcf. Natural gas consumption is expected to grow around 7 percent annually for the next decade.



Iran's natural gas reserves are predominantly located offshore, although significant production originates from onshore oil fields (associated gas). Over two-thirds of Iranian natural gas reserves are located in non-associated fields, and are just recently beginning to be developed. The giant South Pars gas field, only a portion of which is in Iranian territory, comprises over 47 percent of total reserves. Other large natural gas fields include North Pars, Kish, Kangan-Nar, Golshan, and Ferdowsi fields.



Source: FACTS Global Energy

Sector Organization

The National Iranian Gas Company (NIGC) is responsible for natural gas infrastructure, transportation, and distribution. The National Iranian Gas Exports Company (NIGEC) was created in 2003 to manage and to supervise all gas pipeline and LNG projects. Until May 2010, NIGEC was under the control of the NIOC, but the Petroleum Ministry transferred NIGEC, incorporating it under NIGC in an attempt to broaden responsibility for new natural gas projects.

Due to the poor investment climate and international political pressure, some international oil companies including Repsol, Shell, and Total have divested from Iran's natural gas sector. In response, Iran has looked toward eastern firms, like state-owned Indian Oil Corp., China's Sinopec, and Russia's Gazprom to take an increased role in Iranian natural gas upstream development. Activity from these sources has also been on the decline due to logistical difficulties experienced as a result of sanctions on technology and financial transactions.

Under Iran's buy-back scheme, foreign firms hand over operations of fields to the National Iranian Oil Company (NIOC), and after development they receive payment from natural gas production to cover their investment. National Iranian South Oil Company (NISOC), a subsidiary of NIOC, is responsible for much of the southern natural gas production.

Production and Consumption

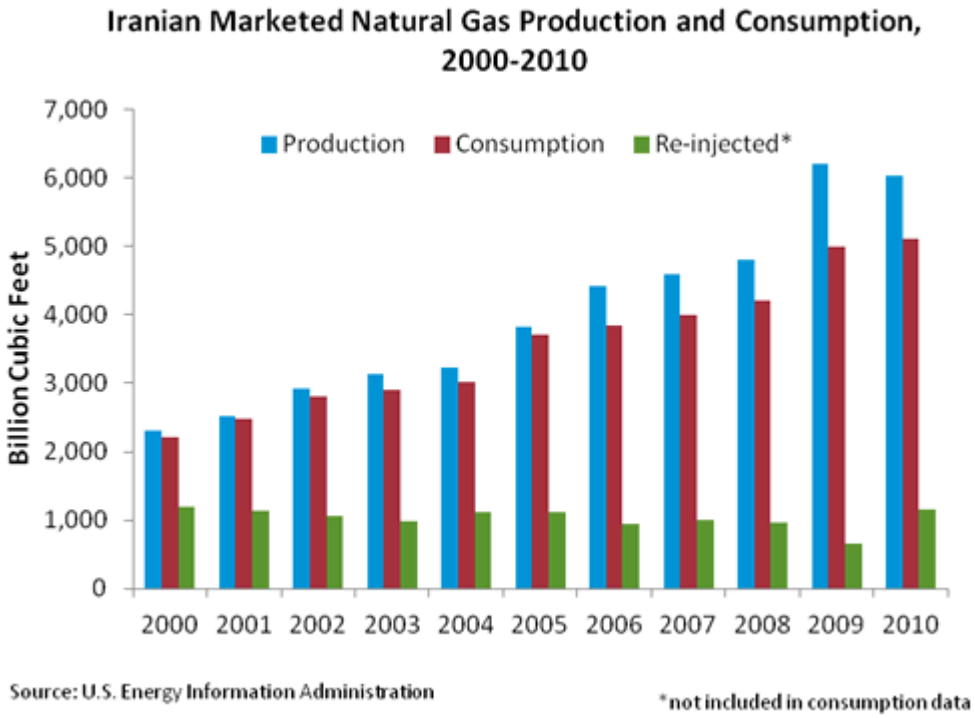
Iran's natural gas production has increased by over 550 percent over the past two decades, and the consumption has kept pace. As demand growth rates persist, the potential for shortfalls in natural gas supply grows. Iran's natural gas exports likely will be limited due to rising domestic demand, even with future expansion and production from the massive South Pars project, and other development projects.

In 2010, Iran produced an estimated 6 Tcf of marketed natural gas and consumed an estimated 5.1 Tcf. A sizeable volume of the gross natural gas produced (7.7 Tcf in 2010) was reinjected (1.2 Tcf). As Iran implements its plans for increased crude production through EOR techniques, however, the share of natural gas used for re-injection is expected to increase dramatically.

Imports and Export

Iran imports natural gas from its northern neighbor Turkmenistan. According to FGE imports jumped to 1.1 Bcf/d between January and October 2011 as a result of completion of the Dauletabad-Hasheminejad pipeline. Iran has been importing natural gas from Turkmenistan since 1997.

Iran exports natural gas to Turkey and Armenia via pipeline. Turkey, an importer since 2001, received 762 MMcf/d in 2010, while exports to Armenia totaled 24 MMcf/d in 2010.



South Pars

The most significant energy development project in Iran is the offshore South Pars field, which produces about 35 percent of total gas produced in Iran. Discovered in 1990, and located 62 miles offshore in the Persian Gulf, South Pars has a 24-phase development scheme spanning 20 years. The entire project is managed by Pars Oil & Gas Company(POGC), a subsidiary of the National Iranian Oil Company. Each phase has a combination of natural gas with condensate and/or natural gas liquids production. Phases 1-10 are online. The majority of South Pars natural gas development will be allocated to the domestic market for consumption and gas re-injection. The remainder will either be exported as liquefied natural gas (LNG) and/or used for gas to liquids (GTL) projects.

South Pars Project Phases

Completed Phases			
Phase	**Capacity (Natural Gas; Condensate)**	**Participating Companies**	**Start-up**
1	1 bcf/d; 40,000 bbl/d	Petronas; Petropars Ltd.	2003
2	2 bcf/d; 80,000 bbl/d	Total; Gazprom;	2002
3			
4	2 bcf/d; 80,000 bbl/d	Eni; Petronas; NIOC	2004
5			
6	3.9 bcf/d; 156,000 bbl/d	Statoil; Petropars Ltd.	2008/2009
7			
8			
Future/Ongoing Phases			
9	2 bcf/d; 80,000 bbl/d	LG International; OIEC; IOEC	2011/2012
10			
11	2.0 bcf/d; 80,000 bbl/d	NIOC; CNPC	2015/2016
12	3 bcf/d; 110,000 bbl/d	SonAngol; PdVSA; Petropars Ltd.	2013/2014
13	2 bcf/d; 77,000 bbl/d	Mapna;SADRA; Petro Paydar	2016/2017
14	2 bcf/d; 77,000 bbl/d	IDRO;NIDC; IOEC	2016/2017
15	2 bcf/d; 80,000 bbl/d	KACH;IOEC; Saaf; ISOICO	2014/2015
16			
17	2 bcf/d; 80,000 bbl/d	IDRO;OIEC; IOEC	2015/2016
18			
19	1.8 bcf/d; 77,000 bbl/d	Petropars Ltd.; IOEC	2017/2018
20	2 bcf/d; 75,000 bbl/d	OIEC	2016/2017
21			
22	2.0 bcf/d; 77,000 bbl/d	Petro Sina Arian; SADRA	2015/2016
23			
24			

Source: FACTS Global Energy

Other Field Developments

Kish, with estimated reserves of 50 Tcf, it is expected to produce 3 Bcf/d of natural gas. Phase I of the project, which experienced repeated delays is expected to come online in 2016. Phase I is expected to produce approximately 1 Bcf/d and Phase II of the project will produce an additional 2 Bcf/d.

In addition to Kish, there are other promising gas fields that could further boost Iran's production. However, these projects also are characterized by delays and other difficulties. These additional fields include the Golshan, Ferdowsi, and North Pars gas fields although their start-ups are unlikely to occur until the next decade.

Liquefied Natural Gas (LNG)

POGC is responsible for LNG development, although various companies including the National Iranian Gas Export Company (NIGEC) are also involved.

A number of LNG projects have been proposed in the past, however only one South Pars LNG project still remains an option, Iran LNG. This planned project includes two liquefaction trains with an expected capacity of 10.8 million tons of LNG. Sanctions continue to delay the development of this project. The other projects, Pars LNG (South Pars Phase 11) and Persian LNG (South Pars Phase 13) have largely been shelved as a result of financing difficulties.

Pipelines

Domestic Pipelines

Iran has an extensive natural gas pipeline system, which includes trunklines, import/export pipelines, and gathering and distribution lines. The backbone of the domestic pipeline system is the Iranian Gas Trunkline (IGAT) pipeline series, which transport natural gas from processing plants to end-use consumers. Development of IGAT pipelines, fed by South Pars development phases, is important to Iran's natural gas transport. IGAT-8 (2012/2013) will run nearly 650 miles to Iran's northern consumption centers, including Tehran. IGAT-9 and IGAT-10 are still in the planning phase and are not likely to become operational before 2017.

Export Pipelines

Iran exports natural gas via pipeline to Turkey and Armenia. The Iran-Turkey pipeline began exports in 2001 with 34 million cubic feet (MMcf) per day and exports gradually rose to 762 MMcf per day in 2010.

In May 2009, Iran began exports of natural gas to Armenia after a couple of years of delays. Exports to Armenia totaled 24 MMcf per day of gas in 2010 in exchange for electricity. Pipeline exports to Armenia are expected to increase to 224 MMcf per day in 2020.

Future pipeline projects (at various stages of planning) include the Iran-UAE pipeline, Iran-Pakistan pipeline, and Iran-Europe gas export project. Additionally, the governments of Iran and Syria have signed several MOUs to build a pipeline linking the two countries. However, this project is becoming less likely as a result of the unrest in Syria and is predicated upon the survival of the Assad regime.

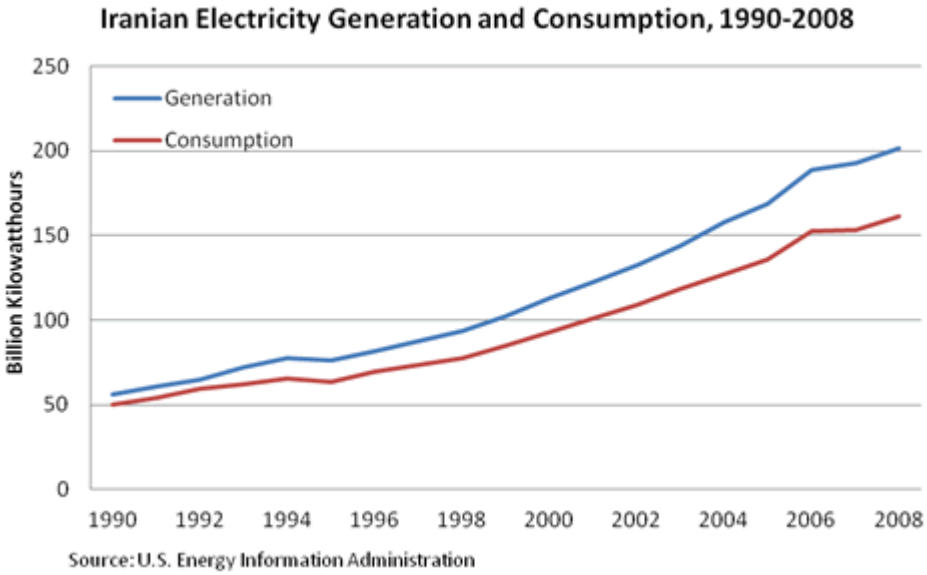
Iran-Pakistan-India (IPI) Pipeline

A controversial pipeline proposal is the $7.4-billion Iran-Pakistan-India (IPI) line which would transport Iranian natural gas south to the Asian subcontinent. With a proposed 1,700 miles and a 5.4 Bcf/d capacity, the pipeline has been stalled in the past due in part to disputes over the cost of the shipments. Iran and Pakistan have finalized gas sales and purchase agreements, but without India's participation in the negotiations. It is probable that Iran would extend its domestic Iran Gas Trunkline 7 (IGAT-7) pipeline into Pakistan, avoiding the creation of a new, parallel pipeline.

Electricity

Although a net exporter of electricity, increasing domestic demand has created shortfalls in supply during times of peak energy demand.

In 2009, Iran generated 201.6 billion kilowatthours (Bkwh) of electricity and consumed 161.5 Bkwh. This was generated from a network capacity of 53 gigawatts (GW), which is strained during times of peak demand. Approximately 97 percent of total electricity supply was generated by conventional thermal electric power. The remaining proportion was from hydroelectric source, with marginal generation from wind power. Some power plants are running as low as 10 percent of their nameplate capacity as Iran's electricity infrastructure is largely in a state of dilapidation and rolling blackouts become endemic in summer months. The amount of generation lost in distribution is a central indicator of the disrepair of the electricity network, with upwards of 19 percent of total generation lost during transmission.



Iran has focused on meeting higher demand by expanding gas-fired combined-cycle and hydroelectric power capacity. Expansion of electric power generation capacity will require significant investment, made much tougher by international sanctions. The government has announced that it has opened the sector to foreign investment, but sales of existing state-owned facilities as well as new independent power projects has been almost non-existent.

Iran's controversial foray into nuclear power resulted in a single power plant, Bushehr (1,000 MW peak capacity), which is being brought online and is expected to reach peak capacity by the end of this calendar year. The power plant was connected to the power grid in early September 2011.

Electricity Trade

Iran is a net exporter of electric power and currently exports electricity to neighboring states including Armenia, Pakistan, Turkey, Iraq, and Afghanistan. Azerbaijan and Armenia supply electricity to Iran. Armenia and Iran will increase the volume of electricity that they deliver to each other on a seasonal basis, according to a November 2011 agreement. Total volume of power swapped between the two countries will rise from 350MW at present to 1,200MW following the completion of construction of a third, 400-kV transmission line connecting Iran and Armenia, expected for mid-2012.

Links

U.S. Government

CIA World Factbook - Iran
Library of Congress - Country Study of Iran
OPEC Fact Sheet
U.S. State Department - Iran
U.S. Treasury Department - Office of Foreign Asset Control

Foreign Government Agencies

Interests Section of Iran in Washington, DC (in the Pakistani Embassy)
Permanent Mission of Iran in the United Nations
National Petrochemical Company
Pars Times - Caspian
Pars Times: Iranian Oil and Gas Resources

General

BBC News - Iran
Bushehr: Global Security.org
Iran Nuclear Resources
Iranian Trade

Sources

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Dow Jones
Economist Intelligence Unit Ltd.

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FACTS Global Energy, Inc .
Financial Times
Global Insight
IHS Inc.
Middle East Business Intelligence
Middle East Economic Survey
Oil and Gas Journal
Organization of Petroleum Exporting Countries
Petroleum Economist
PFC Energy, Inc.
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U.S. Energy Information Administration

Contact Info

cabs@eia.doe.gov
(202)586-8800
cabs@eia.doe.gov