



Iran's gas swells economic frustration

KEY POINTS

■ Iran's natural gas reserves are second only to Russia, and Tehran is hopeful that a combination of policy changes at home and better access to funding and technology can transform its gas industry.

■ The view in Tehran, and among European proponents of energy supply diversification, is that Iranian gas can enable Europe to reduce its dependence on Russia for energy.

■ Meanwhile, several obstacles, not least decades of US opposition, continue to hamper Iran from becoming a major player on the global gas market.

Located in Central Eurasia, its southern shore bounded by the Persian Gulf, the northern shore by the Caspian Sea, Iran covers a region that is geologically awash in hydrocarbon reserves.

Already possessing the world's second largest proven oil and natural gas reserves (after Saudi Arabia and Russia respectively) Iran's potential in the energy sector remains enormous. Yet, despite efforts to diversify its economy, Iran continues to be highly dependent on oil and gas exports, representing some 85 per cent of the country's total revenue and 80 per cent of its export earnings.

Options to diversify

There is a lively debate inside Iran about the country's current economic state as oil prices have fallen significantly since mid-2008 and Iran's oil fields have begun to mature. With natural gas reserves at 27.6 trillion m³, one option is to further develop Iran's natural gas industry.

Russia is the world's leading gas producer, holding the largest reserve with 44.6 trillion m³. For Iran, with approximately 15 per cent of the world's natural gas supply, it is critical to find a viable strategy to develop this industry.

In the 10 years before 2007, Iran was a net importer of natural gas as demand increased more rapidly than production capabilities.

Despite a wealth of natural gas, Iran's options to diversify and make capital out of its hydrocarbon resources has been severely limited by political and structural constraints.

Fariborz Ghadar assesses the country's options for exploiting the world's second largest reserve of natural gas and the role European customers might play.

In 2007, Iran produced 111.8 billion m³ of natural gas, barely satisfying the 111.7 billion m³ of domestic consumption.

The Iranian government currently plans to lift large gas subsidies to help curb domestic demand, which would leave Iran with more gas available for export, particularly as Russia's state gas company Gazprom and Ukraine continue to periodically feud over prices, providing an opportunity for Iran to extend its share of the market.

Another way Iran could export gas is by increasing production, which would be possible if it could attract considerably more foreign direct investment.

However, Iran's lack of foreign investors is, in the main, tied to sanctions imposed by the United States which make it very difficult for Western multinationals to invest and operate in Iran.

Russia has taken advantage of this restriction on Iran by helping to develop the South Pars field, the world's largest gas field which Iran shares with Qatar.

Despite this partnership with Russia, which started in 1997, Iran remains barely self-sufficient in its natural gas requirements, lacking the technical infrastructure it needs to become a major exporter. Without Western energy companies available to invest, Iran is effectively cornered into working at Russia's pace.

According to an array of studies on the

Iranian economy, energy production and trade is one area where Iran could collaborate with the West to their mutual benefit. For Iran, an increase in the supply of oil and gas will enable the country to raise export revenues and its overall global market share. The same kind of logic applies to the Iranian nuclear programme. Nuclear power would help Iran diversify its energy supplies and dampen domestic oil and gas demands.

Nuclear plan

Before the 1979 Iranian Revolution and ensuing decades of US sanctions, Iran had planned to build several nuclear power plants with Western companies. Those supporting such initiatives point out that, in addition to securing revenue from building the plants, Western states would have been able to monitor the legitimacy of Iran's nuclear intentions as well. However, with sanctions in place, Western nuclear power companies are barred from doing business in Iran, again leaving Russia to fill the void.

As Iran lags in developing its gas industry, Russia continues to monopolise the regional market, serving as the major supplier of gas to European states, which are eager to reduce their dependence on Gazprom due to concerns about supply reliability.

Europe consumed approximately 500 billion m³ of natural gas in 2007. About

300 billion m³ was imported, with the remaining 197.8 billion m³ produced domestically. By 2015, Europe is projected to need an additional 200 billion m³ annually. Europe's domestic natural gas production is projected to decline 59 per cent by 2030, when it will need to import 84 per cent of its gas requirements.

Russia is already moving to supply Europe's future surge in gas demand with plans to build the South Stream pipeline, which would cross the Black Sea and Bulgaria to Western Europe, bypassing Turkey. A successful South Stream project would mean increased European dependence on Russian gas – a scenario which EU states see as geo-strategically disadvantageous. A reminder came in January 2009 when Russian natural gas supplies were cut off after Russia and Ukraine (the transit state) wrangled over Russian gas destined for Europe via pipelines on Ukrainian territory. European commentators on energy supply security argue that events such as this can be minimised by having alternative gas suppliers.

In this context, Iran is a feasible alternative source of natural gas. It has two distinct advantages over other gas exporting countries that supply Europe. First, it has a geographic advantage. Iran shares a border with Turkey, providing direct access to the European market without having to rely on Russian-controlled pipelines. Second, given that Iran holds the second largest gas reserves and is already the fourth largest producer of gas in the world, improved access to technology and funding can greatly enhance the country's future gas export potential.

Joining the Nabucco Pipeline project, which is envisaged to carry natural gas from the Caspian Basin over 3,300 km across Turkey, Bulgaria, Romania, Hungary and Austria, could facilitate the process of export diversification. The pipeline would carry 31 billion m³ of gas to Europe annually, completely bypassing Russia, and supplying 10 per cent of Europe's current gas imports. The starting point for

the pipeline has not been finalised, possible options are Georgia, Iran or Turkey.

The Nabucco pipeline will most likely not happen without Iranian gas. Azerbaijan, Iraq and Turkmenistan have all shown interest in supplying gas to the Nabucco pipeline. Of the three countries, Turkmenistan has enough supply capacity to provide significant gas to Nabucco. However, most of this capacity is currently planned to be exported to China through another pipeline or sold to Gazprom for re-export via the Russian pipeline system.

Iran could diversify its energy exports by supplying developing Asian countries. India's economy has been growing at an annual rate of seven to eight per cent and is expected to continue at an average of 5.7 per cent until 2030.

Natural gas comprises nine per cent of India's primary energy consumption and is projected to be 14 per cent by 2010. The most convenient way for Iran to supply gas to India is through a pipeline via Pakistan. This proposed pipeline would extend from Iran's South Pars field to the Indian state of Gujarat, carrying 22 billion m³ per year to be shared equally between India and Pakistan, followed by 55 billion m³ per year mainly for India.

Liquid model

Another exporting opportunity is provided by using liquefied natural gas (LNG) instead of relying on pipelines.

Pipelines mean access to markets for producers, provide supplies to consumers, and generate fees for transit nations. They are, however, susceptible to shut-downs by the producer, transit country, buyer, or even violent armed groups.

The LNG model releases those constraints on producers and buyers and is more similar to an oil model where global buyers and sellers interact in a less strict trading market.

Natural gas frozen until it liquefies takes up 1/600th of the volume of gas and can easily be shipped to areas where pipelines are not possible. LNG is one of the

fastest growing sectors in the energy market and would allow Iran to export far greater volumes of gas.

However, as Iran seeks to achieve its potential in the development of its gas industry, technical challenges, bureaucratic obstacles and geopolitical barriers persist, hampering its progress. For example, Russia is paying higher prices for gas from Turkmenistan, Kazakhstan and Uzbekistan to stop these countries supplying the Nabucco pipeline and block outside access to Central Asian gas.

Analysts predict that only three billion m³ has been sourced for the pipeline, which requires a bare minimum of 15 billion m³ before it can be launched.

Further delay in the Nabucco pipeline could provide the South Stream project with a market advantage, therefore diminishing Europe's prospects of independence from Russian gas.

Problems also hamper plans for an Iran-Pakistan-India pipeline. Sanctions and US pressure has prevented the pipeline from moving forward and while importing countries claim their national interests will prevail, delays are viewed with trepidation in Tehran given Iran's fears of losing market share to energy export rivals such as Qatar and Saudi Arabia.

The final setback for Iran comes in the way of its ability to procure modern technological advances. Current sanctions make it very difficult for Iran to receive the necessary technology and scientific and engineering support required to increase production. While countries like Qatar are reaching breakthrough performance in their gas industry through collaboration with multinational companies, Iran is being left on the sidelines to watch from a distance. ■

Further Analysis

■ Upping the ante – Assessing the plausibility of a gas cartel

Jane's Intelligence Review, 27 March 2009

This article was first published online at jiaa.janes.com on 27 April 2009