

# Energy Supply and Demand in Eurasia: Cooperation between EU and Iran

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## **ABSTRACT**

Energy diversification has emerged as one of the most important priorities for a majority of the European countries and the EU. Growing energy demand in Europe combined with a high reliance on Russia as an energy producer have led the EU to look to the Caspian Sea region for alternative energy resources, especially in natural gas. Iran has the 2<sup>nd</sup> largest natural gas reserves in the world and could assist Europe in diversifying supplies. This article argues that there is substantial potential for energy cooperation between Iran and the European countries, particularly Turkey. Increased Iranian participation in the Eurasian energy market, both as consumer and producer, could lead to other benefits including economic development and more efficient energy extraction.

*Keywords* • Energy Cooperation • European Union • Iran • Turkey • Caspian Sea region

## **Introduction**

One may perceive that the world should be concerned over energy security given recent developments in the Middle East. However, the reality is that despite the war in Iraq, the world has not faced problems in terms of energy supplies. With the partial exception of Iraqi supplies, there were never any disruptions of oil exports from the Persian Gulf. Moreover, Saudi Arabia and other Persian Gulf OPEC producers significantly increased production to fill the gap imposed by disruptions of Iraqi oil. The Persian Gulf contains over 65 percent of the world's proven reserves. Stability in these countries combined with security of oil fields and routes of transportation are of paramount importance to the global oil market. In comparison, Central Asia and Caucasus contain 5 percent of proven oil reserves but are nevertheless important from a perspective of energy diversification.

The development of alternative sources of energy, efficiency, and conservation may bring additional energy supplies to the market, but time lags, investment costs, and delivery prices render these alternative

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fuels uncertain in the foreseeable future. Controversies also exist over the size of proven, possible, and potential resources rate of discovery, development and production costs, fields' life, and the impact of advanced technology. Another factor of uncertainty is that the importing states often lack capability to refine crude oil and distribute to the domestic market in a timely manner. This, in turn, can build bottlenecks that not only put pressure on the average consumer but also have a negative impact on demand and pushes up the price of crude oil.

While it is clear that oil prices and economic growth in developed countries are negatively correlated, this correlation runs two ways: high oil prices have negative effects on economic growth in consuming states but low economic growth in industrialized nations causes a decrease in demand for oil and lower oil prices.

In recent years, the oil market has experienced an unexpected increase in oil demand from countries in Asia such as China and India. According to the International Monetary Fund (IMF), this surge from developing countries could account for 40 percent of the increase in oil demand by 2010.<sup>1</sup>

### Energy Security in Europe

Energy security is only one of three goals stated in the European Commission's Communication on energy policy issued in January 2007.<sup>2</sup> The Communication called for "sustainable, secure and competitive energy" and it proposed a series of actions to advance each of these three goals, but was silent on the extent to which the pursuit of one goal may actually frustrate the achievement of other goals.<sup>3</sup>

After eastern, central and western European countries suffered the consequences of the 2007 Russo-Ukrainian dispute over natural gas supply, debates in the EU have intensified and calls for an effective common energy security policy have become more frequent. The events of last winter highlighted the EU's high dependence on Russia and Middle Eastern countries for crucial fossil energy supply.<sup>4</sup>

However, in spite of the resurgent "resource nationalism" and the publicity given to "peak oil" theories, there is no comparable public concern about energy security. Brief interruptions of natural gas supplies transiting Ukraine or Belarus capture news headlines for a day or so, but only some EU citizens feel personally threatened by it. Resurgent resource nationalism in Russia as well as in many other energy-exporting

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<sup>1</sup> Hossein Razavi, "Financing Oil and Gas Projects in Developing Countries," *Finance and Development* (IMF) (June 1996).

<sup>2</sup> European Commission, "An Energy Policy for Europe" COM (2007).

<sup>3</sup> John Gault, "European Energy Security: Balancing Priorities," *FRIDE Comment*, May 2007.

<sup>4</sup> "EU Energy Policy", *PINR*, April 6 2006.

countries is perceived as a distant and perhaps temporary phenomenon. Indeed, public discontent over rising energy prices does not translate into a clear political mandate for an energy security policy.<sup>5</sup> Nonetheless, EU member states have so far failed to launch a well-coordinated, comprehensive common energy policy, mainly because national strategies in recent years have been planned independently from one another (for instance, France wagered on nuclear energy, but its main partners, such as Germany, did not)<sup>6</sup>.

European countries have a large deficit between energy consumption and production but nevertheless have other options to pursue. Russia, Turkmenistan, Iran, Iraq, Qatar, Algeria, and Libya are part of these huge gas reserves surrounding the European continent. In a sense, then, Europe is surrounded by a “sea of gas”. The uncertainty displayed among European countries with regard to gas imports from Russia have made them conclude that finding a good source for sustainable supply of natural gas is the most crucial step they can take in the energy sector. Europeans have been studying various routes for gas imports to Europe for many years and have come to the conclusion that Qatar is too far off while Turkmenistan cannot meet their long-term needs and therefore, they should woo Iran.<sup>7</sup> Though global hegemony has changed over the past years, the European countries are still eyeing Iran as the most strategic country in the region. This is partly because of its importance as a transit route; it is located in a neighborhood of countries with deep impact on regional equations; and, of course, the existence of huge oil and gas reserves in Iran.

Also, due to problems encountered in Russian gas exports to Europe, the European countries face a major challenge in diversifying energy supplies and Iran is an attractive option. Political and regional issues that affect Iran’s economic ties with the EU should, however, also be taken into consideration. Over the past two years, Iran’s insistence on keeping its peaceful nuclear energy program has made the country to top the list of global concerns. Nevertheless, Europe still needs energy diversification and has relatively few options; Iran is one of the primary ones. The primary rationale for this is the dominance Russia repeatedly has demonstrated over Europe’s energy supply. This pertains especially to Russia’s disruption of gas exports to Ukraine which also made European countries worried about its vulnerability vis-à-vis Russia. Today, it seems

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<sup>5</sup> Gault, “European Energy Security,” p. 1.

<sup>6</sup> “EU Energy Policy”, *PINR*, p. 1

<sup>7</sup> Any pipeline from Qatar to Europe needs to transit volatile regions like Iraq and the Southern part of Turkey. At the same time, using Qatar’s gas in LNG form is more costly. Turkmenistan, in turn, has an agreement to supply Russia with up to 100 billion cubic meter (bcm) per year and it is unlikely that Turkmenistan will have extra capacity for export to Europe.

that the EU is trying to appease Iran to supply needed gas to its member states.

### Iran as an Energy Player

Iran has 1 percent of the world's population, about 7 percent of the world's mineral resources and possesses some 10 percent of the global proven oil reserves and 16 percent of the world's natural gas resources. Notwithstanding, the country's recent economic performance has remained well below its actual potential. While events such as the 1979 Revolution, 1980-88 Iran-Iraq war, as well as regional crises have undermined Iran's economic potential, it is valid to argue that internal problems such as mismanagement of resources, "trial and error" mentality, and other ills have also led to the under-utilization of Iran's economic capacity. Nonetheless, in the past few years, the Iranian economy has experienced a period of sustainable growth and there is reason to believe that in the absence of a major regional crisis, this trend will continue potentially leading to Iranian gross domestic product (GDP) growth rates which would be higher than the world average over the next few years.

In view of that Iran has 136 billion barrels of proven oil reserves, oil will also continue to provide the most important revenue for Iran. Iran has 40 producing fields, 27 onshore and 13 offshore while the majority of crude oil reserves are located in Iran's southwestern Khuzestan region close to the Iraqi border.<sup>8</sup> Iran also has an estimated 974 trillion cubic feet (Tcf) in proven natural gas reserves. Around 62 percent of Iranian natural gas reserves are located in non-associated fields and are yet to be developed. In 2005, Iran produced and consumed 3.6 Tcf of natural gas and natural gas consumption is expected to grow around 7 percent annually for the next decade<sup>9</sup>. Both production and consumption have grown rapidly over the past 20 years, and natural gas is often used for re-injection into mature oilfields in Iran. According to FACTS Global Energy, Iran's natural gas exports will be minimal due to rising domestic demand even with future expansion and production from the massive South Pars project. In 2005, 65 percent of Iranian natural gas was marketed production, while 18 percent was for EOR gas re-injection, and 17 percent was lost due to flaring and the reduction of wet natural gas from hydrocarbon extraction. Like the oil industry, natural gas prices in Iran are heavily subsidized by the government.<sup>10</sup>

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<sup>8</sup> Jahangir Amuzegar, "Iranian Oil Buybacks: A Formula no one likes," *Oil and Gas Journal* 99, 35 (August 27 2001), p. 20.

<sup>9</sup> US Energy Information Administration, Iran: Background, <<http://www.eia.doe.gov/emeu/cabs/Iran/Background.html>> (November 1 2007).

<sup>10</sup> CIA World Fact Book,

In 2006, Iran produced 4.1 million barrels of oil per day (b/d), used 1.6 million b/d, and exported 2.5 million b/d of crude oil. Iran's oil production faces a natural decline of 8 percent onshore and by around 10 percent offshore which constitute around 350000 b/d. Gasoline demand in 2006 stood at 422000 b/d and demand is expected to grow by 10 percent annually from 2006-2010. Oil imports in 2006 reached 190000 b/d costing Iran a total of US\$6 billion.<sup>11</sup> The US Department of Energy recently reported that Iran enjoys the world's second biggest gas reserves after Russia and will assume an important role in the future in supplying needed gas to the EU.<sup>12</sup>

Undoubtedly, Iran's natural gas markets are not limited to Europe and other countries like India, Pakistan, and China are also potential long-term markets for the country. Indeed, intense competition for energy consumption in Asia and Europe has imparted great importance to Iran's oil and gas resources. For example, consumption of fuel in China has increased 41 percent over the past decade and the world's most populous country needs six million barrels of crude oil per day. The doubling of energy demand in China and an up to 75 percent increase in fuel imports to that country has prompted Chinese officials to sign a US\$100 billion contract to purchase crude oil and natural gas from Iran for a period of 25 years.

Due to depletion of oil and gas resources, Iran is feeling an urgent need to develop nuclear energy sources while still taking advantage of oil and gas reserves. Undeniably, Iran's nuclear program which has turned into a major source of contention with big powers such as the United States and the EU, will affect Iran's economic relations with those countries. Although Russia and China are not Iran's companions from ideological and political viewpoints, Iran is a major energy source and a suitable regional market for them.

### Cooperation between EU and Iran

In the foreseeable future, the Middle East, and particularly the Persian Gulf producers, will continue to be the driving force to ensure global energy security. The world will grow more dependent on oil supplies from the Middle East and the region also has the hydrocarbon resources to meet growing global demand.<sup>13</sup> Yet, regional conflicts, military

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<<https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html#Econ>> (November 1 2007).

<sup>11</sup> "Analyst sees end to Iranian gasoline crisis by 2012", *Oil and Gas Journal* 105, 30 (2007), p. 30

<sup>12</sup> US Energy Administration Information, <[www.eia.doe./emeu/cabs/Iran/NaturalGas.html](http://www.eia.doe./emeu/cabs/Iran/NaturalGas.html)> (November 1 2007).

<sup>13</sup> Gawdat Bahgat, "Energy Partnership: Pacific Asia and the Middle East" *Middle East Economic Survey* XLVIII, 33 (2005).

operations, and continued political tension in the Middle East have prompted calls to reduce dependence on supplies from that region. Security of supplies for importers can be enhanced by an overall diversification of supply. Put differently, the more producing regions, the more stability in international oil markets. Thus, increasing supplies from Russia, the Caspian Sea region, West Africa, and other regions would reduce the vulnerability of over-dependence on one single region. But again, Iran has a presence in the Caspian Sea as well. The oil and gas wealth is important for economic prosperity in the wider West Asian region, including Iran and its neighbors. One problem is for energy resources to reach the market of high-income importing countries; Iran plays an important role in the exploitation and export of these resources.

#### *Caspian Region*

Iran is not so active in Caspian oil and gas exploration and production, mainly because of US sanctions against any activities of Iran in this region. But at the same time, Iran is eager to find ways and routes to escape from US pressures which are even more tense in the Persian Gulf. For this reason, and despite the insistence of Iran's government to contract with a "buy-back regime", which is a service contract, Iran's High Economy Council has approved exploration activities in the Caspian Sea. This marks the first serious step taken by this country to find oil reserves in a new format which is more similar to a Production Sharing Agreement. The High Economy Council comprises several cabinet members and vice presidents, formed to decide over Iran's major economic plans. With regards to the development of Caspian resources, Iran has been in talks with Brazil's Petrobras, known for its experience with deep water offshore projects. The word is that Petrobras is close to finalize a deal to purchase LNG from Iran, in return for a contract to conduct exploration operations in the Caspian Sea.

In contrast to the US supported "East-West" pipelines<sup>14</sup> in the Caspian Sea region, Iran, Russia, and China are looking to other routes from the north, east and south. The proposed Kazakhstan-Turkmenistan-Iran (KTI) pipeline is one such option and a study is also in process in accordance with the Agreement on Joint Studies concluded between KazMunayGas, Total, Japan National Oil Corporation, and Inpex. This is a long-term export option for delivering Kazakh oil to Asian Markets via Persian Gulf. Swapping oil via Caspian Sea is also working and the capacity of Neka-Ray pipeline inside Iran has been expanded to 170 000 b/d. Iran also swaps gas between Azerbaijan and Nakhichevan.

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<sup>14</sup> These include the Baku-Tbilisi-Ceyhan (BTC) pipeline, Baku-Supsa pipeline, and Baku-Tbilisi-Erzurum (BTE) pipeline.

Turkmenistan's gas is exported to Iran by a 200 km pipeline from Korpedzhe in Turkmenistan to Kordkuy in Iran, which became operational in 1997. The pipeline initially had the capacity to export some 8 billion cubic meter (bcm) per annum of gas to Iran. This amount was subsequently increased to 12 bcm after the pipeline was upgraded in 2005. Although already possessing huge gas reserves, Iran considers imports from Turkmenistan a worthwhile option. This is partly because Iran could re-export it as electricity or other forms of energy to other countries but gas from Turkmenistan could also satisfy domestic demand in its northeastern provinces. Currently, part of the gas imported from Turkmenistan is re-exported to Turkey and the other part is paid for by Iran and used in domestic ventures.

Moreover, Armenia and Iran signed an intergovernmental agreement in 1995 establishing the route of another pipeline, which stretches 114 km, including 41 km in Armenia and 100 km in Iran. The agreement also sets the price for gas to be transported through the pipeline at US\$84 per thousand cubic meters (tcm). The cost of the project was estimated at US\$120 million. This pipeline has already been tested and will be inaugurated on March 21, 2008, the Iranian New Year.

The supply of gas from Iran to the Ukrainian and European markets is in line with these countries' plans to find access to alternative natural gas supplies. In 2000, Ukraine's VNIPITransgaz launched a feasibility study for the Iran-Armenia-Georgia-Ukraine-Europe gas pipeline, with an underwater section stretching 550 km from the Georgian port of Supsa to the Crimean city of Feodosia. The cost of the project was estimated at US\$5 billion, with a total gas supply volume of 60 bcm per annum, including 10 bcm for Ukraine.

Iran built two trunk pipelines to the former Soviet Union during the Cold War with the intention to send its gas to European countries. After the Iranian revolution, Iran cut gas exports to the Soviet Union because of its own high domestic consumption. However, Iran re-started to export 1.8 bcm of natural gas annually to Azerbaijan from October 2006. These exports are the result of a Memorandum of Understanding, calling for gas to be transported to Azerbaijan through a pipeline located at the border city of Astara.

#### *Europe and Iran*

Despite the fact that Europe is not Iran's neighbor, there are several opportunities for both sides to work in regions like the Caucasus, the Caspian, Central Asia and the Persian Gulf. Growing natural gas consumption in Europe combined with the recent moves by major European natural gas suppliers have caused great concern among the European countries.

As mentioned above, Iran has the world's second biggest gas reserves after Russia, and may play an important future role in supplying gas to the EU. By taking advantage of various phases of the South Pars gas field, Iran will be capable of producing 8 billion cubic feet (bcf) gas per day and will earn, at least, US\$11 billion over 30 years. Added to this, Iran also has great potential to produce liquefied natural gas (LNG).

A new gas supply route to Europe from Turkey to Austria via Bulgaria, Romania and Hungary driven by OMV, MOL, Transgaz, Bulgargaz, and BOTAS is currently under study. The potential suppliers of this route and to the so-called Nabucco pipeline are Iran, Azerbaijan, Egypt and later (if the country stabilizes), Iraq.

Central Europe, alone, has an estimated market of 45 bcm of gas and Iran can send 10 to 20 bcm to Turkey to feed this pipeline. Other countries have also showed their inclination to join the project. For example, in an obvious attempt aimed at reducing reliance on Russian gas and boost energy security, Ukraine announced on January 2007 that it is considering joining the Nabucco pipeline project. On the same day, a senior Turkish official commented that his country intends to engage in talks with Iran over the construction of the pipeline. Turkey also has a stated ambition to form a joint company with Iran or Austria to sell gas to European markets via the Nabucco pipeline. The Nabucco pipeline is as valuable for the Turks as it is for the EU to ease dependence on Gazprom. It is of particular importance to the Central and Eastern European countries whose gas imports from Russia, in some cases, amount to almost 100 percent of total imports.

The Ukraine gas crisis of 2006 combined with Gazprom's deal with Algeria's Sonatrach the same year should serve as the final reminder of EU's increasing dependency on Russia. The Iranians know that. For a while, Iran tried to court the Europeans on Iran's role in alleviating this dependence but EU diplomats have made it clear that energy diversification should not come at any price, including political price. All in all, however, Nabucco is much more realistic than the planned India-Pakistan-Iran gas pipeline. Nabucco's first phase is scheduled to be finished in 2013, while the second phase is expected to be completed in 2017. That said, Iran's approach to Russia with the idea of a "gas cartel" along the OPEC model did not really increase European confidence in the Islamic Republic.

#### *Iran-Turkey Energy Cooperation*

Bilateral trade between Turkey and Iran has grown rapidly since the moderately Islamist Turks came to power in November 2002.<sup>15</sup> In 2006,

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<sup>15</sup> Trita Parsi and Omer Taspinar, "Iran Policy, Is Turkey the Model?" *The Globalist*, August 19 2005.



bilateral trade stood at US\$6.7 billion, compared with just US\$1.2 billion in 2002 and Iran is already Turkey's second-largest supplier of natural gas after Russia. Turkey signed its first natural gas agreement with Iran in August 1996, during a short-lived coalition government headed by the Welfare Party (Refah Party, RP). The deal was worth US\$23 billion stretching over 23 years. The agreement was initially plagued by disagreements over pricing, as the RP appeared to have been primarily motivated by ideological considerations and had agreed on a price well in excess of that offered by alternative suppliers, such as Russia. However, the agreement was subsequently renegotiated and Iran currently supplies Turkey with around 6.2 bcm of natural gas per year, which is used both for industry and for residential heating during the winter in eastern Anatolia.<sup>16</sup>

In July 2007, Turkey and Iran signed a Memorandum of Understanding (MOU) to import natural gas from Iran's South Pars field in the Persian Gulf. A final agreement is expected to be signed in November 2007. The proposed project foresees the state-owned Turkish Petroleum Corporation (TPAO) investing a total of US\$3.5 billion to bring the gas to Turkey, including the construction of a US\$2 billion gas pipeline.<sup>17</sup> The Turkish Energy Ministry has repeated Turkey's determination to press ahead with a new natural gas agreement with Iran, despite objections from the United States. If the deal goes ahead, TPAO could become liable to US sanctions under the 1999 Iran Sanctions Act, which makes any foreign company that invests more than US\$20 million in Iran's gas and oil sector subject to punitive measures. When the MOU was signed in July, analysts questioned how Turkey would be able to finance the proposed US\$3.5 billion investment. TPAO does not have an established track record of securing such large sums from the international market, and most foreign financing institutions are reluctant to become involved with projects linked to Iran. On October 3, 2007 officials from the Turkish Energy Ministry announced that Turkey would finance the project itself and that they were confident of being able to find sufficient resources. However, they declined to give details.<sup>18</sup>

In another development, Greece and Italy have built a new gas pipeline. Greece's state-owned gas supplier DEPA and Italy's Edison (EDN.MI) have signed a Memorandum of Understanding to build a 220 kilometer-long natural gas pipeline under the Ionian Sea. The pipeline between Greece and Italy will transport natural gas from Caspian Sea states and Central Asia into West European markets via Turkey. Greece and Turkey agreed already in 2004 to construct a pipeline between the

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<sup>16</sup> Gareth Jenkins, "Ankara pushes forward with Iran gas deal" *Eurasia Daily Monitor*, October 2007.

<sup>17</sup> "Turkey to fund \$3.5 bln Iran gas deal alone," *Reuters*, October 4 2007.

<sup>18</sup> *Anadolu Ajans*, October 3 2007.

Turkish district of Karacabey and Komotini including a measurement station on the border. The Turkey-Greece-Italy pipeline is part of the Southern Europe Gas Ring project, intended to carry natural gas from Iran and Caspian Sea Region to Europe.

## Conclusions

Energy is now a very big political issue. With high prices and high costs, risk factors are growing for the industry. Despite the fact that Europe is surrounded by gas-producers, political considerations impede Iran's role in supplying Europe with gas. Diversification to the Caspian Sea region is an important component in Europe's energy security. Nevertheless, it should also be acknowledged that instability in Central Asia and the Caucasian Republics, neighboring both Europe and Iran, could impact both sides negatively. Iran needs close relations with countries in Europe and Asia, especially the former. This is primarily because Iran's path to the free world, during a very volatile and tense period of US sanctions, is through Europe.

At the same time, the importance of Eurasia for Europe has increased dramatically. Because membership of each new Central or Eastern European country into the EU means additional demand for energy, this also necessitates new supply sources. There are several prerequisites for membership in the EU, including adjustments of state economies. It is expected that new member states adapt to economic structural adjustment programs to improve economic performance and economic development will also lead to a higher energy demand. Some of the Eurasian states have the needed energy resources to support Europe's further development but pipeline politics impede on the flow of energy supplies. Russia, for its part, is trying to dominate Eurasia's energy sector and control its means of delivery.

Iran has very ambitious plans in oil, gas and petrochemicals. Though Iran's strategy on oil's production capacity remains a key topic for debate, major investments in this sector are inevitable. The legal framework for this still remains an issue, though it must be said that slow changes rectifying this have occurred. Iran's focus in the next decade will be on gas and gas-intensive industries while the next important step will be the restructuring of National Iranian Oil Company (NIOC) and consequent corporatization of the energy sector companies.

It should also be acknowledged that Iran began the development of its huge gas reserves relatively late, primarily because of the difficulties in finding gas markets abroad. The first Iranian gas export, which only started in December 2001, were to Turkey, and gas is today also exported to Armenia. On the other hand, the gas imports from Turkmenistan into

Iran that started in 2000 are now expected to reach 14 bcm in 2007.<sup>19</sup> In view of these developments, Iran is increasing its engagement with Central Asia dramatically. It now imports gas from Turkmenistan to consume in the Northern part of Iran and imports oil from Kazakhstan as well, thus making Iran an end-user of Eurasian oil and gas.

The Nabucco pipeline, planned to run from Iran, the Caucasus and Turkey, leading to Europe is a key project. In the past, Europe has preferred to use the Soviet gas pipeline system instead of constructing new links to cheaper Iranian gas. This is now changing. Nabucco is an important pipeline in Euro-Iranian energy relations. It will both open a new gas supply corridor for Europe from the Middle East and Caspian regions and raise transit profiles of participating countries.

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<sup>19</sup> Most of Iran's oil and gas fields are located in the southern part of Iran and in the Persian Gulf. It is cheaper for Iran to import gas from Turkmenistan to cover domestic consumption and to free up gas in the Persian Gulf for exports.