Political History of Iran's Energy Policy

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Abstract

This article analyzes the evolution of Iran's energy agenda with a particular focus on oil, nuclear and natural gas. It aims to indicate whether Iran's energy policy, which relies on oil revenues and prioritizes nuclear energy over gas, stems from a definable historical track. Energy security parameters prove a certain degree of influence on Iran's energy policy. Yet, the way Iran delayed international gas trade cannot be fully explained from energy security perspective. The interaction between oil, nuclear energy and gas merits a historical analysis that may help in explaining the processes in which political concerns and international issues intersect with energy security priorities. The analysis, within this context, indicates how energy security parameters would support more focus on natural gas from international trade perspective with regard to the State's policy that prioritizes nuclear energy and leads to a delay in international gas projects. Iran's nuclear deal with P5+1 promises to foster natural gas projects, and yet this contingency cannot be detached from the continuities in political history of Iran's energy policy.

Keywords: *Iran, energy policy, oil, gas, nuclear.*

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İran'ın Enerji Politikasının Siyasi Tarihi

Öz

Bu makale İran'ın enerji ajandasının tarihsel gelişimini petrol, nükleer ve doğal gaz odağında ele almaktadır. Çalışmanın esas amacı, petrol gelirlerine dayanarak nükleer enerjiye doğal gaz endüstrisine göre daha ivedi bir rol atfeden İran'ın bu yaklaşımının süreklilik arz eden bir tarihsel arka planının olup olmadığını ortaya koymaktır. Enerji güvenliği parametreleri İran'ın enerji politikasında belirli bir noktaya kadar etkin rol oynamaktadır. Buna mukabil, İran'ın uluslararası doğal gaz ticaretini bugüne kadar ötelemiş olma nedeni sadece enerji güvenliği perspektifinden izah edilememektedir. Petrol, nükleer enerji ve gaz arasındaki etkileşim politik önceliklerin ve uluslararası hususların enerji güvenliği perspektifiyle nasıl kesiştiğini gösteren tarihsel bir yaklaşımı gerektirmektedir. Bu çerçevede yapılan analiz, enerji güvenliği parametrelerinin uluslararası ticaret perspektifinden doğal gaza daha çok önem atfedilmesinin gerekliliğini işaret ederken, devlet politikasına referansla nükleer enerjiye verilen önceliğin uluslararası doğal gaz projelerini nasıl ertelediğini ele almaktadır. İran'ın P5+1 ile yapmış olduğu nükleer anlaşma doğal gaz projelerinin yapımını teşvik ederken, bu olasılığın gerçekleşmesi enerji politikalarının siyasi tarihinde ortaya çıkan sürekliliklerden ayrı tezahür etmeyecektir.

Anahtar kelimeler: *İran, enerji politikası, petrol, gaz, nükleer.*

1. Introduction

This article adopts a comparative perspective to elaborate the factors that interacted with Iran's energy policies, and resulted in a contextual rupture between oil, nuclear and gas. Iran's energy policy stems from development of its oil industry and prioritizes nuclear energy while undermining the vast potential of natural gas. Certain scholars underline that Iran's nuclear program played an important role in shaping country's international status.[1] Accordingly, Iran's difficult encounter with the international community resulted in significant consequences such as international sanctions, which, in turn, did not allow international gas projects.[2] Other consequences included dependence on oil revenues, vulnerability to oil price fluctuations and delays in energy investments. Therefore, Iran's energy security parameters necessitate a further analysis to understand the interaction between oil, nuclear and natural gas.

The paper starts its analysis from the emerging oil economy of Iran in 1960s to point out how it caused some socio-economic features that are assumed to be common in many oil producer countries. It then refers to developments concerning nuclear and natural gas, thereafter up to nowadays, to analyze in what ways they led to contextual change that was not typical in similar oil producers. It elaborates how oil, nuclear energy and natural gas intersected with Iran's political conjuncture and its status in international politics. The first section entitled 'The Impact of Oil' makes a review of Iran's encounter with oil politics. The following section entitled 'Prospects of Nuclear and Natural Gas' analyzes the status of nuclear and gas with a particular focus on historical continuities. The section entitled 'Tracks to Nuclear Energy' focuses on Iran's nuclear program with a particular attention on changing dynamics in domestic and international politics. The last section entitled 'Incentives and Obstacles of Natural Gas' elaborates the rising significance of natural gas that occasionally makes Iran search new types of international cooperation.

2. The Impact of Oil

How did Iran, which developed common features similar to other oil producers in 1960s, deviate from them? To answer this question we need to start our analysis from the common features characterized by the oil

[1] Gawdat Bahgat, "Nuclear Proliferation: The Islamic Republic of Iran," *Iranian Studies*, Vol. 39, No. 3, 2006, pp. 307-327.

[2] Robert E. Ebel, *Geopolitics of the Iranian Nuclear Energy Program,* Washington, CSIS, 2010.

impact, and then look into nuclear and natural gas issues to point out the track of deviation. The rise of the Organization of the Petroleum Exporting Countries (OPEC) in 1960s and early 1970's helped Iran benefit from increasing oil revenues from 29 billion rials in 1963 to 182 billion rials in 1972.[3] 'However, rough economic structure, which did not permit much of the new wealth to be distributed extensively, rising inflation and an immense rise in urban rents were important problems.[4] The share of oil revenues in total government revenues increased from 11 percent in 1954, to 45 per cent in 1963, to 56 per cent in 1971 and to 77 per cent in 1977.[5] 'The declining trend began with the 1976-1977 recession under Shah and reached its highest rates in 1979 and 1980 with the sharp drop in oil revenue, flight of skilled workers, start of conflict over state power and the social question of the revolution, Iraq's invasion of Iran, and the take over of the American Embassy in Tehran by the students of the *Imam's Line.'*[6] The 1979 Revolution overthrew Shah and crowned Ayatollah Khomeini as the top Iranian authority who was committed to use Shia Islam as the most significant unifying factor along with Persian language.[7] Khomeini expressed a will to freeze relations with the US, Israel and their Western allies to avoid cultural influence of the West, curb economic dependence on the US, avoid the decline of Iranian agriculture and stop oil sales to Israel.[8]

Khomeini forced foreign oil companies to immediately leave Iran in 1979. The oil production started to decline drastically. Khomeini's political rhetoric would, however, confront country's economic need for international cooperation to carry out oil business and fuel domestic need of energy. The production capacity fell in 1980 due to lack of technical measures to manage wells. Iraq's invasion of Iran in September 1980 resulted in total collapse of oil industry.[9] Iran's oil production fell from 5.5

[3] Hossein Bashiriyeh, *The State and Revolution in Iran 1962-1982,* New York, St. Martin's Press, 1984, p. 37.

[4] M. Ruthven, *Islam in the World,* Oxford, Oxford University Press, 2006, pp. 336-337.

[5] Bashiriyeh, 1984, p. 36.

[6] Hooshang Amirahmadi, *Revolution and Economic Transition,* Albany, State University of New York Press, 1990, pp. 136-137.

[7] Homa Katouzian, *Iranian History and Politics,* New York, Routledge, 2003, pp. 28-29.

[8] Jahangir Amuzegar, *The Dynamics of the Iranian Revolution,* Albany, State University of New York Press, 1991, p. 5.

[9] Abbas Alnasrawi, "Economic Consequences of the Iraq□Iran War," *Third World Quarterly*, Vol. 8, No. 3, 1986, pp. 869-895.

million barrels per day to 1.5 million barrels per day in 1980.[10] This picture prevailed throughout Khomeini's rule, and yet Iran managed at developing tentative skills to manage oil industry such as injecting gas in wells to keep up pressure and increase oil production.

Even though National Iranian Oil Company (NIOC) had managed at increasing the production to a certain extent after 1989, the government looked for international support in order to boost production that was not adequate to meet the domestic demand and pay off the foreign debts of post-1989 years.[11] Iran's plans to involve in international cooperation remained undeveloped due to US sanctions. In May 1993 the Clinton administration started dual containment against Iran and Iraq, and announced a total embargo on Iran in April 1995 following the announcement of Conoco on a $1 billion deal to develop Iran's offshore oil. In 1996 the US congress, claiming support of Iran and Libya for terrorism, passed Iran-Libya Sanctions Act, which was proclaimed to be null and void by the European Union (EU), and threatened non-US countries' energy investments in Iran.[12] Despite US sanctions, Iran's oil and gas sectors attracted $15 billion from foreign firms from 1997 to 2006.[13] Iran, however, needed more support from foreign companies to increase its production capacity to 5.5 million barrels per day (the level of 1979).

A conservative political line prevailed after Khomeini's death in 1989. Khatami (1997-2008) and Rouhani (2013 onwards) appeared as exceptions since the first launched a liberalization program to ease US sanctions released by Clinton Administration in May 1993, whereas the second adopted a moderate perspective to end Iran's isolation with more international cooperation on nuclear issue with respect to US priorities expressed by Obama Administration in 2014. Actually, oil revenues below expectations, the need for international support to fuel domestic energy need, the need to boost oil and gas exports appear as the main reasons which encourage economic motives over political concerns. It is yet not clear to what extent economic motives can override political concerns.

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[10] Peter Tertzakian, *A Thousand Barrels a Second: The Coming Oil Break Point and the Challenges Facing an Energy Dependent World,* New York, McGraw-Hill, 2007, p. 83.

[11] Nikki R. Keddie, *Modern Iran: Roots and Results of Revolution,* New Haven, Yale University Press, 2006, p. 265.

[12] Ibid, pp. 265-266.

[13] David J. Lynch, "Political, Tech Hurdles Muddle Iran oil industry," *USA Today* (14 September 2006), p. 01b.

3. Prospects of Nuclear and Natural Gas

Iran needs to commercialize gas and start benefitting from nuclear energy to supply its domestic electricity demand for at least three reasons. First, carbon emissions in Iran have risen by 240 per cent from 33.1 million metric tons emitted in 1980 to 80.8 million metric tons emitted in 2000 and continued its increase thereafter.[14] Second, Iran is likely to turn into a weak oil exporter after 2020 because the demand for refined oil products is growing rapidly at about 6.5 per cent per year in contrast to declining oil production in greatest fields.[15] Iran's oil production, most of *which comes from south western province* of Khuzestan, is decreasing each year by about 300,000 barrels a day, because the fields are old and have already lost their productivity.[16] Third, the domestic demand appears as an important challenge. "Just between 1982 and 2004; the size of population is about 1.59 times, the final energy consumption is more than 3.5 times and the electricity production is 5.75 folded to meet the existing demand."[17] In turn Iran accelerated its nuclear energy program and engaged in a rapprochement with Russia who would support Iran's nuclear program and benefit from Iran's disability to commercialize its gas. This strategy did not only isolate Iran and kept gas industry underdeveloped on behalf of nuclear, but also caused a weak energy mix that appeared as a flaw in domestic energy security.

86.5 per cent of total installed capacities of power plants in Iran operate on fossil fuels, using gas, diesel and gas oil. With limited hydro resources, Iran plans to reach an energy mix of Gas Power Plant 70 460MW (29 per cent); Gas Combined Power Plants 154,800MW (65 per cent); and Nuclear Power Plant 15,000MW (6 per cent) by 2033.[18] Accordingly, Iran aims to diversify its energy mix by benefitting from nuclear energy and natural gas to satisfy its domestic power demand and increase its exports. This aim, however, confronts the doubts of international community on Iran's nuclear program, which in turn results in a delay in massive gas projects. This is why there is a further need to focus on nuclear energy and natural gas to locate their roles with regard to political features.

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[14] A.R. Karbassi, M.A. Abduli and E.M. Abdollahzadeh, "Sustainability of energy production and use in Iran," *Energy Policy*, Vol. 35, No. 10, 2007, p. 5178.

[15] Ibid, p. 5179.

[16] Lynch, 2006, p. 01b.

[17] Amir Hossien Ghorashi, "Prospects of Nuclear Power Plants for Sustainable Energy Development in Islamic Republic of Iran," *Energy Policy, Vol.* 35, No. 3, 2007, p. 1644.

[18] Ibid, p. 1646.

4. Tracks to Nuclear Energy

Iran started its nuclear research and development program in late 1950s and early 1960s, followed by its bilateral agreements with the US which supplied 5-megawatt nuclear research reactor to Tehran Nuclear Research Center (TNRC), founded in 1967 at Tehran University, and run by Atomic Energy Organization of Iran (AEOI).[19] Nuclear Non-Proliferation Treaty (NPT) led to a turning point in history of nuclear energy policy.[20] Iran, considering that Article IV of NPT guaranteed members' "inalienable right to develop research, production and use of nuclear energy for peaceful proposes without discrimination, and acquire equipment, materials, and scientific and technological information", signed the treaty on 1 July 1968 which became effective on 5 March 1970 after its being ratified by the parliament.[21]

In response to the rapid increase in oil prices in early 1970s, the Shah, who ruled the country between 1945 and 1979, launched a program of 20 reactors to finally reach 23,000 MW of nuclear power plants for domestic use and then to export more oil. The US supported the plans of Shah. The US Atomic Energy Commission head Dixie Lee Roy's 1974 agreement with Iran to sell two reactors and enriched uranium would be followed by US Secretary of State Henry Kissinger's $15 billion trade agreement with Iran which included the Shah's purchase of eight reactors from the US at the cost of $6.4 billion.[22]

But the deal was languished not only because 1957 agreement between the US and Iran excluded nuclear power development[23] but also due to the disagreement on whether Iran might have been allowed to reprocess the plutonium and other elements extracted from the spent fuel.[24] The US, along with its European allies, originally had supported Iran's nuclear energy program to the extent that Shah's regime was compatible with global political concerns and economic expectations. However they were also concerned with Iran's interest in reprocessing the plutonium and other

[19] Mohammad Sahimi, "Iran's Nuclear Program. Part I: Its History," *Payvand's Iran News*, http://www.payvand.com/news/03/oct/1015.html, accessed on 20 July 2015.

[20] IAEA, Treaty on the Non-Proliferation of Nuclear Weapons, INFCIRC/140, 22 April 1970. https://www.iaea.org/sites/default/files/publications/documents/infcircs/1970/infcirc140.pdf, accessed on 31 May 2016.

[21] Ibid.

[22] Sasan Fayazmanesh, *The United States and Iran,* New York, Routledge, 2008), p. 124.

[23] Ibid.

[24] D. Poneman, *Nuclear Power in the Developing World,* Winchester, Alien & Unwin, 1982, p. 87.

elements extracted from the spent fuel with the fear that they could be used for military purposes by provoking nuclear proliferation in the Middle East. 'No matter exactly how the Tehran government might succeed in obtaining these key fissile materials, it could then conceivably realize Washington's greatest fears by withdrawing from the 1968 treaty, giving the ninety-day notice period the agreement requires on the grounds that extraordinary events have jeopardized the supreme interests of its country.'[25]

The US supported Iran's nuclear initiative until 1970s but changed its policy drastically after the 1979 revolution and started its refusal of Iranian claims on peaceful motives of the program by dismissing it as a hostile attempt to develop nuclear weapons. 1979 revolution and Iran's war with Iraq from 1980 to 1988 led to two drastic consequences on its nuclear energy initiative. First of all, the regime change and the devastative consequences of the war stopped investment plans such as that of West German firm Siemens which had acquired a contract from Shah to build a nuclear power plant at Halile near Bushehr. Siemens' project would be ceased by political consequences of Iran's 1979 Islamic revolution, and the 1980-1988 Iran-Iraq War, during which the planned nuclear site was bombed by Iraqis. Second, the US totally changed its policy *vis-à-vis* Iran by considering the new regime and its intentions on nuclear issue as a threat to regional stability.[26] The US approach would well fit allegations on Iran's agenda to develop weapons of mass destruction including nuclear bombs. This policy change was justified by the claims of Iranian officials who consolidated their power after the 1979 revolution. Throughout late 1980s and early 1990s most Iranian public opinion leaders identified Israel as the main motivation and justification of Iran's nuclear weapon agenda as in the cases of Rafsanjani who in 1988 told that Iran needed a full equipment of defensive and offensive chemical, biological and radioactive weapons; as well as of Ayatollah Mohajerani who in November 1991 said that all Moslem countries had to enjoy the right to have nuclear weapons.[27] In their view, these statements justified the US and Israeli stance against Iran's nuclear program and raised doubts about it. In testimony to the US Congress in January 1992, US Director of Central Intelligence Robert

[25] Roger Howard, *Iran in Crisis?: Nuclear Ambitions and the American Response,* London, Zed Books, 2004, p. 94.

[26] Shireen T. Hunter, "Iran and the Spread of Revolutionary Islam," *Third World Quarterly,* Vol. 10, No. 2, 1988, pp. 730-749.

[27] Shai Feldman, *Nuclear Weapons and Arms Control in the Middle East,* Cambridge, MIT Press, 1997, p. 137.

W. Gates supported the Israeli allegation on Iran's secret agenda to develop nuclear weapons, by saying that Iran's military program included weapons of mass destruction.[28]

US' insistence on not allowing Iran's nuclear program obscured Iran's search for civilian nuclear technology. Countries and companies, some of which had even agreed to transfer technology, build reactors and supply nuclear fuel, halted their cooperation with Iran. Some examples, as summarized by Eisenstadt, included Germany, Argentina, China, India and Russia.[29] Germany, which started to construct Bushehr plant in 1970s, due to an agreement with Shah, repeatedly refused Iranian claim of rights starting in 1984. Argentina accepted to supply Iran neither with nuclear fuel fabrication and reprocessing technology nor with a 20-30 MW research reactor in 1987. China declined Iran's demand of a 30 MW research reactor in 1990 and a uranium hexafluoride conversion plant in 1998. India did not accept to supply Iran with a 10 MW research reactor in 1991; and Russia refused to transfer a gas centrifuge-enrichment facility or a 300 MW research reactor in 1995 that it had previously promised to Iran.[30]

Despite some blurring statements, Iran constantly refused the claims on its nuclear weapon agenda. Iran systematically emphasized that economic reasons and peaceful purposes were the main motivations of the program. Consequently Iran allowed International Atomic Energy Agency (IAEA) inspectors to examine six additional sites of their choosing in 1992 followed by another inspection in 1994 both of which resulted in no public evidence on Iran's claimed nuclear weapons program.[31] 'In December 1994, the Atomic Energy Authority of Iran signed an $800 million contract with Moscow to rebuild two 1,000 MW light water, nuclear fuelled generators, as part of a nuclear power plant, to be finished by May 2003, with Iranian participation in the construction.'[32] Tehran, despite the pressures from the US, switched to a turnkey arrangement in February 1998 claiming inadequate progress

[28] Jalil Roshandel, "Iran", in *Nuclear Weapons After the Comprehensive Test Ban, ed. by* Eric H. Arnett, Oxford, Oxford University Press, 1996, p. 60.

[29] Michael Eisenstadt, "Living with a Nuclear Iran," in *Crises in the Contemporary Persian Gulf* , ed. by Barry M. Rubin, Oxon, Frank Cass, 2002, p. 248.

[30] Ibid.

[31] Roshandel, 1996, p. 60.

[32] Dilip Hiro, *Neighbors, Not Friends. Iraq and Iran after the Gulf Wars,* London, Routledge, 2001, p. 208.

of this joint venture.[33] Iran, furthermore, managed at sustaining technology transfer from China, Russia and Pakistan and purchased nuclear relevant components in Western Europe which together provided the technical and engineering know how to step forward in its nuclear program comprising construction of a reactor at Arak, a uranium conversion facility at Isfahan and a centrifuge enrichment plant in Natanz.[34] Russia supplied Iran with nuclear fuel according to a $1 billion contract to build the Bushehr plant.[35]

Iran's nuclear initiatives, though claimed to be for civilian purposes, raised additional threat perceptions of Western group of states led by the US. 'The United States, for its part, accused Iran of developing weapons of mass destruction; attempting to derail the Arab-Israeli peace process; supporting terrorist groups in the Middle East so as to subvert pro-American Arab regimes there; and violating the human rights of its citizens.'[36] Iran's nuclear issue had already became intricate when 'President Bush labeled Iran, along with Iraq and North Korea, as the "Axis of Evil" trio in his January 2002 State of the Union address to Congress.'[37]

In 2003, the IAEA reported that Iran had hidden a uranium enrichment program since 1995 and Western members of the IAEA asked Iran to stop enrichment activities permanently.[38] Iran immediately refused this demand by emphasizing its rights on peaceful use of nuclear energy. The conflict on nuclear issue escalated in March 2006 when United Nations (UN) Security Council accepted to take the issue after examining a copy of an IAEA report, dating February 2006, on Iran which said that it could not 'conclude that there are no undeclared nuclear materials or activities in Iran.'[39] The Security Council approved resolutions 1696 (2006), 1737 (2006) and 1747 (2007).

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[33] Ibid.

[34] Efraim Inbar, *Israel's National Security,* Oxon, Routledge, 2008, p. 208.

[35] Reuters (Moscow), "Russia to complete Iran nuclear plant in 2009," *Tass, Reuters India* (27 November 2008) http://in.reuters.com/article/worldNews/idINIndia-36735220081127?pageNumber=1&virtualBrandChannel=0, accessed on 20 July 2015.

[36] Kamran Taremi, "Iranian Foreign Policy towards Occupied Iraq 2003–05," *Middle East Policy*, Vol. 2, No. 4, 2005, p. 31.

[37] William F. Engdahl, "Understanding the True Dynamics: Why the Iran Oil Bourse is not a Casus Belli," *Military Technology*, Vol. 30, No. 4, 2006, p. 22.

[38] IAEA, *Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran*, GOV/2003/40, (6 June 2003).

[39] BBC, "Iran and the nuclear issue," *BBC News*, (7 October 2008) http://news.bbc.co.uk/1/hi/world/middle_east/4031603.stm, accessed on 20 July 2015.

Resolution 1696, which demanded Iran to suspend all enrichment-related and reprocessing activities, was adopted due to failure of Iran to comply with its IAEA safeguard obligations and its obligation under Article II of the NPT not to seek or receive assistance in the manufacture of nuclear weapons or other nuclear explosive devices.[40] Unanimously adopting resolution 1737 (2006) under Article 41 of the Charter's Chapter VII, the Council decided that Iran should, without further delay, suspend the following proliferation of sensitive nuclear activities: all enrichment-related and reprocessing activities, including research and development; and work on all heavy-water related projects, including the construction of a research reactor moderated by heavy water. Resolution 1737 asked all UN member states to prevent the supply, sale or transfer of all items, materials, equipment, goods and technology which could contribute to Iran's enrichment-related, reprocessing or heavy water-related activities or to the development of nuclear weapon delivery systems.[41] Resolution 1747 (2007), affirmed Council's decision that Iran should, without further delay, suspend all enrichment-related and reprocessing activities, including research and development, to be verified by IAEA and widened the scope of its December 2006 sanctions against Iran by banning the country's arms exports and freezing the assets and restricting the travel of additional individuals engaged in the country's proliferation-sensitive nuclear activities.[42]

In May 2008, IAEA reported that Iran has not suspended its enrichment related activities contrary to the decisions of the Security Council which had demanded Iran to stop all enrichment activities, including the preparation of uranium ore, the installation of the centrifuges in which a gas from the ore is spun to separate the richer parts and the insertion of the gas into the centrifuges.[43]

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[40] UN Security Council, *Security Council Demands Iran Suspend Uranium Enrichment by 31 August, or Face Possible Economic, Diplomatic Sanctions*, Resolution 1696 (2006) Adopted by Vote of 14 - 1 (Qatar), 31 July 2006, http://www.un.org/News/Press/docs/2006/sc8792.doc.htm, accessed on 20 July 2015.

[41] UN Security Council, *Security Council Imposes Sanctions on Iran for Failure to Halt Uranium Enrichment*, Unanimously Adopting Resolution 1737 (2006), SC/8928, 23 December 2006, http://www.un.org/News/Press/docs/2006/sc8928.doc.htm, accessed on 20 July 2015.

[42] UN Security Council, *Security Council Toughens Sanctions against Iran, Adds Arms Embargo*, With Unanimous Adoption of Resolution 1747 (2007), SC/8980, 24 March 2007, http://www.un.org/News/Press/docs/2007/sc8980.doc.htm, accessed on 20 July 2015.

[43] IAEA, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007) and 1803 (2008) in the Islamic Republic of Iran*, GOV/2008/15, 26 May 2008, http://www.isis-online.org/publications/iran/IAEA_Iran_Report_26May2008.pdf, accessed on 20 July 2015.

The relations between the US and Iran, as well as Israel and Iran, entered an era of higher tension characterized by severe statements and mutual threats highly linked to the nuclear issue. 'Ayatollah Khamenei, the successor to Ayatollah Khomeini after 1989 was convinced that the problems the US had with Iran were not about the government's external behavior—be it the nuclear issue, opposition to Israel, or support for Hezbollah—but its very existence as an independent Islamic government on one of the most strategic patches of real estate in the world.'[44] This is why diverse concerns of actors have led to a vicious circle characterized by perceptions of mutual threats.[45]

Problems, and Iran's difficult encounter with the international community continued throughout Obama's presidency, who according to certain observers, was originally expected to start face-to-face talks on long-drawn-out issues.[46] Other observers claimed the opposite, suggesting that Iran would need to keep nuclear issue highly tensed in order to secure the political heritage of religious clerks and the current government. According to this approach, 'Iran is more likely to challenge the US with tactics such as irregular warfare and terrorism through Hezbollah and certain Palestinian factions, selective efforts to puncture U.S.' overall dominance (e.g., concealment and deception against U.S. attack from the air, jamming of GPS), and nuclear weapons aboard long-range missiles.'[47] The EU, along with other countries with partial exception of Russia and China, took a similar stance in general.[48] This is why the US and the international community, according to the latter approach, need to take more serious measures to compel Iran. 'Iran, because of its oil and strategic position as well as the publicly stated US concerns over Iran's nuclear program and support for groups like Hezbollah could be a target of another US preventive military attack or of attempts to overthrow the government and install one more friendly to the US.'[49]

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[44] Karim Sadjadpour, "The Nuclear Players," *Journal of International Affairs*, Vol. 60, No. 2, 2007, pp. 126.

[45] Ibid 133.

[46] Robert Tait and Ewen MacAskill, "Revealed: The Letter Obama Team Hope will Heal Iran Rift", *The Guardian*, 29 January 2009, http://www.guardian.co.uk/world/2009/jan/28/barack-obama-letter-to-iran, accessed on 20 July 2015.

[47] Ashton B. Carter, "Defense Management Challenges for the Next American President," *Orbis, Vol.* 53, No. 1 2009, p. 53.

[48] Tom Sauer, "Coercive Diplomacy by the EU: the Iranian Nuclear Weapons Crisis," *Third World Quarterly*, Vol. 28, No. 3, 2007, pp. 613-633.

[49] Keddie, Modern Iran, 2006, 322.

The facts, in the meantime, indicate that Iran has secured nuclear cooperation with Russia and completed the first phase of its first nuclear power plant in 2012. 'Atomstroyexport, the Russian firm building the Bushehr plant, said in September 2008 the plant was nearing completion and that it would start technological work in December 2008 to February 2009 that would put the plant on an irreversible final course.'[50] This "irreversible final course" expression makes certain experts and observers suggest that the US might bomb nuclear facilities in Iran just like Israel that had previously attacked Iraq's nuclear facilities and currently claims to do the same thing in Iran.[51] Bombing Bushehr nuclear power plant facilities will definitely harm Atomstroyexport economically and hamper Russia's interests, which together result in a more complicated situation when compared to past cases. Military intervention would lead to negative consequences for every party, according to another perspective which suggests that: 'A realistic approach to Iran is neither to change the regime through military action nor to support opposition groups. Rather, it is to offer the Iranians prospects of integration into the international community by supporting its accession to the World Trade Organization, unfreezing Iran's assets in the USA, lifting sanctions and respecting its sovereignty.'[52] Within one perspective, trade should concern only economic facts and terms rather than domestic issues such as regime type. Yet for others, political issues and security concerns are above economic expectations in the case of Iran. This realistic approach, indeed, confronts the US security priorities to a certain extent.

The Iranian government does not only own oil, natural gas, other minerals and the major industries but also controls at least 80 percent of the economy as the biggest contractor, buyer and employer.[53] Most of the private sector belongs to Shia based foundations which are subject to Supreme Leader.[54] According to this approach; Iran's inclusion within the World economy will support Shia ideology and endanger regional stability.[55] From this perspective, Iran's insistence on nuclear energy is a

[50] Reuters, 2008.

[51] Ibid.

[52] Adam Tarock, "Iran's Nuclear Programme and the West," *Third World Quarterly*, Vol. 27, No. 4, 2006, p. 663.

[53] Siavash Abghari, "Political Economy of Political Power of the Islamic Regime in Iran," *Journal of Third World Studies, Vol. 24, No. 1, 2007, p. 255.*

[54] Ibid.

[55] Ibid.

clear sign that supports this statement, for at least, going nuclear keeps doubts on the possibility of nuclear proliferation high.

This is why Shlomo Ben-Ami, Israel's former Foreign Minister, suggested that 'the question at the time was not when Iran would have nuclear power, but how to integrate it into a policy of regional stability before it obtained such power.'[56] Within this perspective, there emerged a need for further involvement by international community to monitor and regulate Iranian nuclear activities and its access to fissile materials and advanced technology. The US, UK, France, Russia, China, Germany (P5+1), the EU and Iran agreed on a deal, on 14 July 2015, according to which Iran would guarantee peaceful use of nuclear energy, reduce its low-enriched Uranium by 98 percent, show full commitment to inspection and transparency measures for 25 years, and accept the provisional protocol as to lift nuclear based international sanctions.[57] The signing of the deal, and Iran's commitment to it, would result in gradual lifting of economic sanctions that could increase Iran's foreign trade relations with diverse aspects. This climate change raised the significance of natural gas projects since Iran's vast potential could affect regional and global dynamics of gas geopolitics.

5. Incentives and Obstacles of Natural Gas

Iran has long postponed natural gas projects and preferred to attribute priorities first to oil and then to nuclear. In the meantime, natural gas became a primordial energy source at global scale due to economic (relatively high oil prices) and environmental (it releases very low CO2 emissions and other pollutants) reasons. Iran, with its 911 tcf of natural gas, holds 13 per cent of world reserves ranking second after Russia and before Qatar. Russia, Iran, and Qatar together contain more than half of the world's total known natural gas reserves, which, together with large potential resources, could last at least 130 years, based on current usage.[58] Most of Iran's natural gas is found in the offshore section of the Gulf known as South Pars; a natural geological extension of Qatar's North Field prospect.

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[56] Bradley L. Bowman, "The Demand-Side: Avoiding a Nuclear-Armed Iran," *Orbis, Vol.* 52, No. 4, 2008, p. 642.

[57] Full Text of the Iran Nuclear Deal, Joint Comprehensive Plan of Action, Vienna, 14 July 2015, https://assets.documentcloud.org/documents/2165399/full-text-of-the-iran-nuclear-deal.pdf, accessed on 01 June 2016.

[58] Robert Kunzig and Prachi Patel-Predo, "Our Invisible Energy," *Discover*, Vol. 29, No. 8, 2008, 54-59.

Natural gas, within this sense, may secure state revenues and support domestic energy security if Iran manages at accomplishing massive investments for infrastructures and field development. In 1970, Iran completed its first 1,100 km. long domestic pipeline named Iranian Gas Trunkline I (IGAT I) between southern gas fields (Agha Jari, Marun and Ahwaz) and Astara (current Iranian-Azeri border) with an initial capacity of 19 Bcm/annum (its current capacity is 10 Bcm/annum).[59] In addition to IGAT I, IGAT II currently runs from Kangan gas fields of Southern Iran to Astara.[60] IGAT III transports gas from South Pars field to the north western region of Iran.[61] IGAT IV, transports natural gas from South Pars (phases 1 to 5) and from Asalouyeh to Fars and Isfehan. IGAT V takes place between South Pars (phases 6, 7 and 8) and Khuzestan Province. This web of pipelines is aimed at supplying domestic need and contributing to oil production as Iran injects natural gas in oil wells to increase pressure and force the oil to come to air which indeed is the main purpose of IGAT V. Iran needs additional domestic infrastructure (such as IGAT VI and VII which are under construction and such as IGAT VIII which is under feasibility study) to satisfy increasing domestic need such as that of Tehran. Amongst these pipelines, the planned IGAT IX (between Asalouyeh and north western city of Bazargan to reach Turkish border, also known as Europe gas export line) deserves further attention because it aims to export gas to Europe via Turkey. Besides, Iran aspires to sell natural gas to India via the proposed Iran-Pakistan-India (IPI) pipeline (or by Iran-India submarine gas pipeline); and increase the gas flow to Armenia by a second pipeline to be constructed shortly.

Iran needs $85 billion in investment and foreign technology to develop natural gas industry and make it possible to become a net exporter in the short term.[62] This is why Iran looked ways of international cooperation during late 1990s and early 2000s characterized by the rising interest of international firms to penetrate Iran. In 1990s Iran involved in gas deals and agreements to construct new pipelines to increase production and start exports. Iran signed a buyback contract with Conoco. However, as men-

[59] Dimitros Mavrakis, Fotios Thomaidis and Ioannis Ntroukas, "An Assessment of the Natural Gas Supply Potential of the South Energy Corridor from the Caspian Region to the EU," *Energy Policy,* Vol. 34, No. 13, 2006, p. 1675.

[60] Bruce W. Jentleson, *Pipeline Politics: The Complex Political Economy of East-West Energy Trade, Ithaca, Cornell University, 1986, p. 166.*

[61] Mavrakis et al, 1676.

[62] Bruce W. Jentleson, *Sanctions against Iran: Key Issues,* New York, The Century Foundation, 2007, p. 23.

tioned in the previous section, the economic sanctions against Iran implemented by Clinton administration (Iran and Libya Sanctions Act or ILSA) in 1995 and 1996 made Conoco abstain from this agreement.[63]

To the extent that ILSA allowed the US president to waive sanctions for the sake of national interests, Clinton administration later changed this policy pragmatically. 'When the French company Total SA and partners took over the Conoco deal and agreed to invest some $2 billion in phases 2 and 3 of the South Pars gas field, a deal between the Clinton administration and the Chirac government waived the sanctions and a contract, with better conditions and incentives than the Conoco agreement, was signed.'[64] This policy change led to an increase in the number of Iran's agreements with foreign partners especially on natural gas. In 2001 the Bush administration renewed the sanctions against Iran. Nevertheless Iran made significant agreements with international counterparts. Iran made oil agreements with Totalfina Elf Aquitaine in 1999 ($1 billion contract to develop the Doroud oil field); with ElfAquitaine and Canada's BowValley in 1999 ($300 million to develop the Balal oil field); with Royal Dutch/Shell in 1999 ($800 million to develop the Soroush and Nowruz oil fields); with Norway's Norsk Hydro in 2000 (amount unknown to develop the Anaran oil field); with Sweden's GVA Consultants in 2001 ($226 million to explore for oil in Iran's portion of the Caspian Sea); with ENI in 2001 (estimated to be worth $550 million to $1 billion, to develop Iran's Darkhovin oil field); with Japan in 2001 ($2.8 billion to develop the large Azadegan field); and with Canada's Sheer Energy in 2002 (Sheer acquired 49 per cent stake of $88 million project to develop the Masjid-e-Soleyman onshore oil field).[65] Iran furthermore made significant natural gas agreements with Total SA of France and its minority partners, Gazprom of Russia and Petronas of Malaysia in 1997 ($2 billion contract to develop phases 2 and 3 of the 25-phase South Pars gas field); with ENI in 2000 ($3.8 billion to develop phases 4 and 5 of South Pars); with South Korea's LG Engineering Group and two Iranian firms in 2002 ($1.6 billion to develop and exploit phases 9 and 10 of South Pars); and with Norwegian Statoil (to invest $300 million in phases 6, 7 and 8 of South Pars).[66]

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[63] Willem J.H. van Groenendaal and Mohammad Mazraati, "A Critical Review of Iran's Buyback Contracts," *Energy Policy, Vol. 34, No. 18, 2006, p. 3711.*

[64] Ibid.

[65] Kenneth Katzman, *The Iran-Libya Sanctions Act (ILSA)*, CRS Report for Congress RS20871 (31 July 2003): pp. 4-6.

[66] Ibid.

In the meantime, Iran agreed with neighbouring Turkey, Turkmenistan and Armenia on three gas pipelines which are currently operational. In August 1996, Iran signed an agreement to construct a 1420 km. gas pipeline from Tabriz (Iran) to Erzurum (Turkey) and supply natural gas to Turkey for 22 years despite US pressures and attempts of Congress members to persuade Turkey not to involve in business with Iran. In December 1996; Turkey, Iran and Turkmenistan signed a memorandum of understanding according to which Turkey would buy Turkmen gas via Iran after completion of Turkey-Iran natural pipeline. 'At the end of July 1997, the US administration announced that it would not oppose the construction of a $1.6 billion pipeline to carry natural gas from land-locked Turkmenistan to Turkey across a 788 km. stretch of northern Iran because the project did not technically violate the 1996 secondary sanctions law.'[67] Although the construction of pipeline lasted longer than originally planned, Turkey would start imports in early 2002. 'In January 2002 the first exports of Iranian gas since the 1979 Islamic Revolution, to Turkey boosted confidence that the resource would become a major export earner in the 21st Century.'[68] This process resulted in three existing pipelines which are still operational. The 200 km. long Korbedje-Kurtkui pipeline, with a capacity of 8-13 Bcm/annum, takes place between Turkmenistan and Iran. The second pipeline between Turkey and Iran is 1,174 km long. The third one is a 141 km. long pipeline which started functioning in 2006 from Tabriz (Iran) to Megrhi (Armenia). Iran recently agreed with Armenia on construction of a second pipeline with an annual capacity of 36 Bcm from Tabriz (Iran) to Erash (Armenia) at the cost of $240 million. This second pipeline to Armenia might enable Iran to sell gas to Russia to be re-exported by Gazprom.

In addition to IGAT framework and newly developed export pipelines; Iran has two major options to develop natural gas trade with India and Europe. First, Iran might sell gas to India via the proposed 2,775 km long IPI pipeline which starts from South Pars passes through Pakistan and reaches India with the possibility of an extension to China.[69] The proposal of IPI (to run 1,100 km. in Iran, 760 km in Pakistan's Baluchistan state before reaching Indian border in Rajasthan), was first made in 1989 by R. K. Pachauri, director general of The Energy and Resources Institute

[67] Alan J. Day, "Economy," in *The Middle East and North Africa 2004, ed. by* Lucy Dean, London, Routledge, 2003, p. 406.

[68] Ibid, p. 404.

[69] Shiv Kumar Verma, "Energy Geopolitics and Iran–Pakistan–India Gas Pipeline," *Energy Policy, Vol.* 35, No. 6, 2007, p. 3299.

(TERI, New Delhi) and A. S. Ardekani (later became Iran's deputy foreign minister) with an initial plan to supply 50 million cubic meters of gas to Pakistan and 90 million cubic meters of gas to India.[70] India, world's sixth largest energy consumer which relies on imports for about 75 percent of its oil and natural gas consumption attributed a top priority to IPI just like Iran who was in search of corridors for gas exports.[71] This project remained suspended until now first down to political problems between Pakistan and India, then due to economic and technical restraints and finally because of the clashes and security problems in Pakistan.[72] Iran may also supply natural gas to Europe via Turkey through Southern Gas Corridor, which is currently based on TANAP pipeline project that starts from Azerbaijan and reaches Turkey via Georgia.

6. Conclusion

Historical continuities are effective in Iran's energy policies stemming from an early energy trade motives pointing to the significance of natural gas. This historicity makes it possible to cluster Iran's political encounter with energy issues in terms of: 1- the socio-economic impact of oil; 2- the political and diplomatic impact of nuclear energy; and 3- cooperative characteristics of natural gas trade.

Contextual differences emerged between oil, nuclear and natural gas with regard to the type of cooperation and conflict they caused. Regarding oil; it generated diverse forms of cooperation and conflict according to government's point of view about collaborating with other countries and foreign companies. Regarding nuclear program; it allowed sporadic cooperation with the US until 1979 revolution, and then caused a constant disagreement with international community with partial exception of Russia that became Iran's major nuclear partner. Regarding natural gas, and from energy security perspective, one would have expected to see the rise of natural gas industry not only as a way to secure state revenues extracted from hydrocarbons, but also as a tool to consolidate regional relations. This did not happen until recently as natural gas export projects were postponed because of Iran's nuclear agenda that resulted in its isolation.

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[70] Ligia Noronha, "India's Energy Situation: The Need to Secure Energy Resources in an Increasingly Competitive Environment," in *Energy Perspectives on Singapore and the Region, ed. by Mark Hong, Singapore, Institute of Southeast Asian Studies, 2007, p. 139.*

71 Alidad Mafinezam and Aria Mehrabi, *Iran and Its Place Among Nations,* Westport, Praeger Publications, 2008, p. 78.

[72] Verma, 3299.

Contextual deviation between oil, nuclear and gas appears as an important factor that interacts with Iran's energy policy. The change in Iran's international status, following the nuclear deal signed on 14 July 2015, is likely to be linked to a cooperative context that is based on international collaboration on nuclear program; rather than a defensive context based on manipulation of oil revenues and the political use of gas and nuclear. Actual cooperative context encourages a myriad of regional and global actors establish long-term trade relations with Iran in which gas promises to be of utmost significance. Whilst, it is too early to conclude that the nuclear deal led to a new era of cooperation. As elaborated in this article, Iran's political history of energy policy brings out a complex web of interaction between oil, gas, nuclear and non-energy issues that have been subject to occasional changes.

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