



JOURNAL FOR IRANIAN STUDIES

Specialized Studies

A Peer-Reviewed Quarterly Periodical Journal

Year 1. issue 4, Sep. 2017

ISSUED BY



Arabian Gulf Centre for Iranian Studies

The Iranian Energy Sector: A Vague Future under the Nuclear Deal Agreement

Ahmed Qandeel (Ph.D.)

Chief of the Energy Studies Program and Expert
at the Al-Ahram Centre for Political and Strategic Studies

Following the implementation of the Iranian nuclear deal on January 16, 2016, most of its advocates expected the agreement, as well as the relief of sanctions, to achieve significant and immediate benefits for the Iranian energy sector in three major areas: 1. Increasing oil and natural gas production and exportation and, thus, public revenues. 2. Re-integrating Iranian banks into the international banking system to facilitate financial transactions and attract foreign investments in the various Iranian energy sectors. 3. Releasing Iranian assets that were frozen abroad so they could be utilized to develop this sector, knowing that half of Iran's oil production comes from seventy-year-old fields.

Twenty months have passed since the signing of the nuclear deal between Iran and the P5+1 group – the United States, China, Russia, Germany, France, and Britain; however, the great expectations that accompanied this agreement (officially called the “Joint Comprehensive Plan of Action”) with respect to the revival of the Iranian energy sector have not materialized.⁽¹⁾

These expectations resulted from the disastrous effects of international sanctions on Iran, intended to curb its nuclear and missile programs, its support of terrorism and its human rights violations. Before implementation of the JCPOA, the United Nations, the United States, and the European Union⁽²⁾ adopted a series of actions and sanctions against Tehran, which led international oil companies – especially those in Europe – to cease their activities and leave Iran. These procedures severely and negatively affected the Iranian energy sector; they led to a decrease in Iranian crude oil production, a suspension of American and European investments in the Iranian energy sector, the exclusion of Iran from the International Transaction Organization “SWIFT”, the prevention of American and European companies from doing business with Iran, and the prevention of Iranian crude oil tankers from docking in European ports.⁽³⁾

Iranian crude oil production decreased from 3.7 million barrels per day in 2011 to 2.7 million barrels per day in 2013, while during that same time frame oil exports declined from 2.6 million to 1.3 million barrels per day. Sanctions also prevented Tehran from buying the state-of-the-art technology needed to extract liquefied natural gas. In 2011 US officials estimated that Iran had lost sixty billion USDs in the oil sector due to the withdrawal of major international companies from this sector.⁽⁴⁾ In 2013, the Iranian Oil Minister admitted, for the first time, that his country had suffered about four to eight billion USDs in monthly losses due to the decline of oil exports.

After implementing the nuclear deal, Iran increased its oil production and exportation to levels similar to those that existed before the international sanctions (about 3.7 million barrels per day). Over the past two years, in light of the significant economic opportunities available in Iran, many large international companies, both Eastern and Western, hastened to the nation to explore potential cooperation in the Iranian energy sector. However, Tehran seemed unable to increase its production capabilities by either making internal investments or attracting foreign investments to the Iranian energy sector. Furthermore, most experts predicted that the Iranian energy sector would be unable to start in the immediate future because of the state of elusiveness surrounding Iran, both internally and externally. Based on that assumption, this study aims to evaluate the features of the nuclear deal concerning the Iranian energy sector two years after its implementation. This study is divided into three parts: the importance, state, and future of the Iranian energy sector.

First: Importance of the Iranian Energy Sector

Iran is one of the world's energy giants because of its vast reserves of oil and natural gas. It is ranked fourth in oil⁽⁵⁾ and second in natural gas reserves in the world.⁽⁶⁾ See figures (1) and (2).

Figure (1): Top countries with the world's biggest proven oil reserves

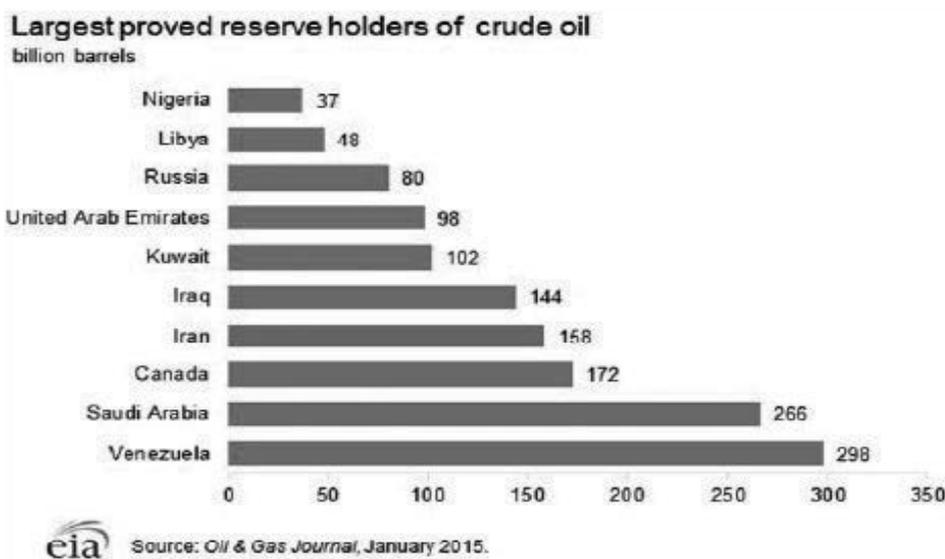
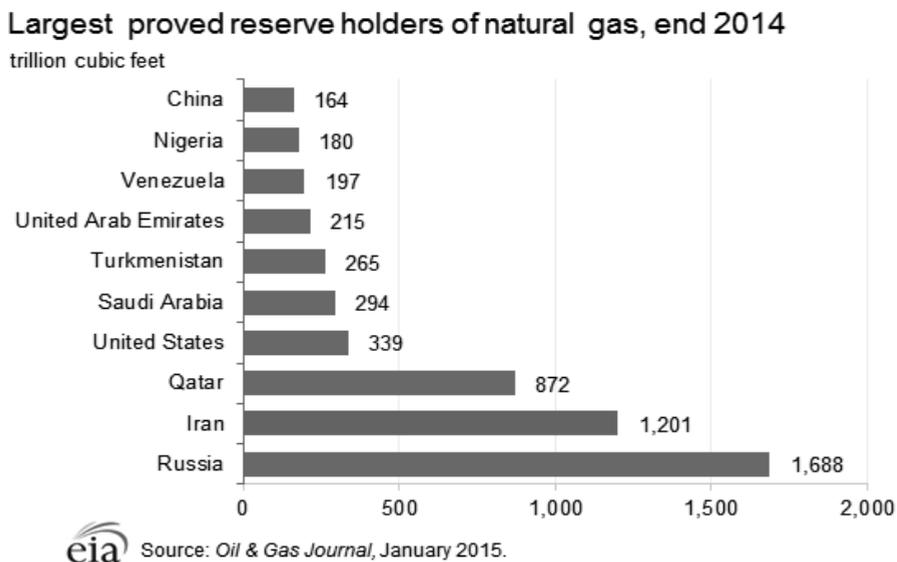


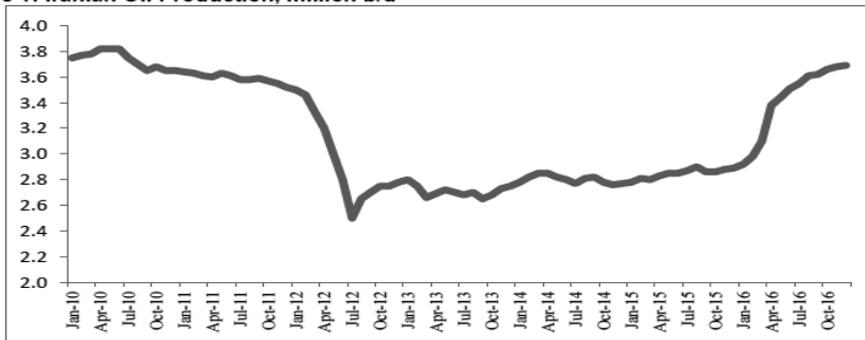
Figure (2): Top countries with the world's biggest proven natural gas reserves at the end of 2014



In addition, Iran is one of the top ten countries with respect to the world's crude oil production⁽⁷⁾ and one of the top five countries with respect to the world's natural gas production.⁽⁸⁾ See figures (3) and (4).

Figure (3): Development of Iranian oil production from January 2010 to October 2016 in millions of barrels per day

Figure 1: Iranian Oil Production, million b/d

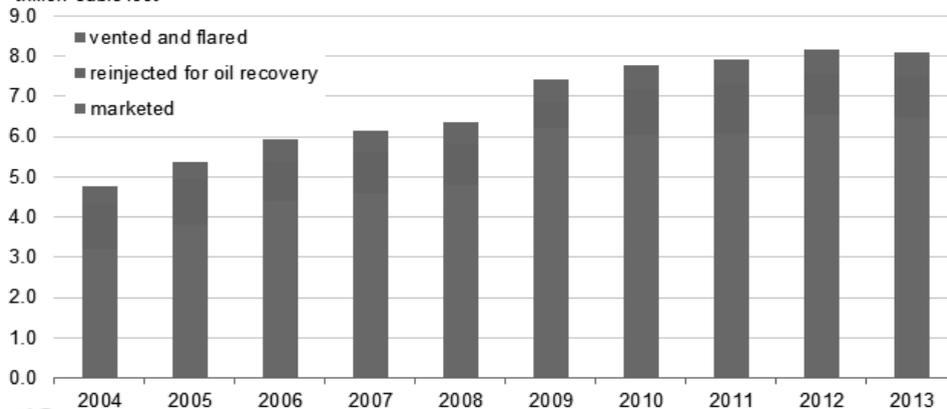


Source: MEES

Figure (4): Development of Iranian natural gas production from 2004 through 2013 in trillions of cubic feet

Gross natural gas production in Iran

trillion cubic feet



Source: U.S. Energy Information Administration.

Iran also controls the Hormuz Strait – the main sea passage from the GCC countries to the world for the oil and liquefied natural gas trade⁽⁹⁾ and is one of the founding members of OPEC, established in 1960 as one of the great oil exporters.⁽¹⁰⁾

Furthermore, Iran requires significant investment to improve its energy sector, which, from the perspective of international energy companies, provides big opportunities for such activities.⁽¹¹⁾ Table (1) lists the estimates for these investments by specialized organizations.

Table (1): Financing institutions' estimates regarding investments required to develop Iran's oil fields in billions of USDs

	2015	2016
(US Energy Information Administration (EIA	54.07	58.5
(Economic Intelligence Unit (EIU	53.12	60.03
Standards and Powers	50	55
HSBC bank	55.4	60
Barclays bank	55	63
Golden Sachs Institute	53.7	49.5
Bank of America	55.6	55
Standard Chartered	54	63
JP Morgan	54.5	52.5

Source: Oil Price

Second: The State of Iran's Energy Sector After Implementation of the Nuclear Deal

To resist the international sanctions imposed in 2010, Iran's consecutive governments adopted a series of counter-cyclical policies under the umbrella of Iran's Supreme Leader Ali Khamenei's concept of a "Resistant Economy". The goals of these policies were to expand domestic Iranian capabilities and steer clear of external dealings represented by trade and foreign investments that, in the past, had been considered an Achilles heel aimed at destroying the Iranian Republic.⁽¹²⁾

In recent years, the Resistant Economy has significantly affected the Iranian energy sector. Local companies – especially IRGC companies subject to the international sanctions before and after the JCPOA – sought to fill the gap left by the withdrawal of international oil companies from the Iranian energy sector. Recognizing these

companies as successful in one way or another, despite their weak performance in meeting industrial standards, Iran could not make up the shortage left by its Western partners, which had been important sources of technology and financing. This led to the deterioration of the Iranian energy sector.

On the other hand, as a result of the implementation of the JCPOA in January 2016 and the EU and UN's complete lifting of sanctions on the Iranian energy and financing sectors,⁽¹³⁾ Tehran escaped the harshest constraints that curbed its capabilities over the past six years.⁽¹⁴⁾ To a great extent, restrictions on Iranian oil and natural gas exportation were eliminated, which opened the door for foreign investments – especially European and Asian investments – to return to Iran after permission was granted to European banks and insurance companies to resume their business with this country.

In 2016, a number of large international oil companies – including the French Total, the US-Netherland Schlumberger, the British-Netherland Shell, the Chinese CNPC, the German Wintershall, the Italian Sebum, the Japanese INPEX, the Norwegian DNO, and the Russian Gazprom – signed several memoranda of understanding with the Iranian government to invest in the Iranian energy sector. See table (2).

Table (2): Preliminary memoranda of understanding signed between the Iranian government and international energy companies to extract crude oil in 2016

Operator	Partners	Field	Date	Type
Lukoil	None	Ab Teymour / Mansouri	24-Jan	MoU for study
Total	None	South Azadegan	24-Mar	MoU for study
Wintershall	None	Four fields in western Iran	12-Apr	MoU for study
OMV	None	Zagros area	04-May	MoU for study
Zarubezhneft	None	Aban / Paydar Gharb	13-Jul	MoU for study
Persia Oil and Gas	None	North Yaran Phase 2	04-Oct	IPC*
Persia Oil and Gas	None	Koupal EOR	04-Oct	IPC
Persia Oil and Gas	None	Maran EOR	04-Oct	IPC
Tatneft	None	Dehloran	08-Oct	MoU for study
PGNiG	None	Sumar	06-Nov	MoU for study

Total (50%)	CNPC (30%), Petropars (19.5%)	South Pars Phase 11	08-Nov	Heads of Agreement
DNO	None	Changuleh	16-Nov	MoU for study
Pergas consortium	None	Shadegan / Rag-e Sefid	23-Nov	MoU for study
Schlumberger	None	Shadegan / Rag-e Sefid / Parsi	27-Nov	MoU for study
PTTEP	None	Changuleh / Balal / Dalamperi	06-Dec	MoU for study
Shell	None	South Azedagan/Yadavaran/Kish Gas	07-Dec	MoU for study
Gazprom Neft	None	Changuleh / Cheshmeh Khosh	13-Dec	MoU for study
Petronas	None	South Azadegan / Cheshmeh Khosh	22-Dec	Mou for study

Source: *Energy Aspects*⁷

Despite this large number of agreements signed in January 2016 following the nuclear deal, all contracts and investments in the Iranian energy sector were noticeably obstructed except for the contract signed on July 3, 2017 between Iran and the trilateral coalition that comprised the French giant Total, the Chinese National Petroleum Company (CNPC), and the Iranian Petronas Company to develop the eleventh stage of South Pars field.⁽¹⁵⁾

This stalemate in the agreements between Iran and the international energy companies, despite sanctions relief, can be attributed to internal and external factors. Internally, sanctions relief arrived in the midst of a severe political rivalry between all competitors for power in Iran. In fact, two major Iranian political currents exist. The first is led by President Hassan Rouhani and his relatively moderate government. Advocates of this current regime aim to re-integrate Iran politically and economically into the international community and believe that the nation's isolationist attitude and confrontational position against the great powers led to sanctions during the era of former president Ahmadinejad. According to this point of view, continuing such practices would threaten the security and stability of the Iranian Republic and result in the loss of significant economic opportunities. Supporters of this current believe in the necessity of adopting internal reform policies and being open to interactions

with other nations to achieve the overriding interests of the Iranian people. Indeed, because of these goals, Rouhani won two presidential terms, in 2013 and 2017.

The other camp comprises hardliners close to the Iranian Supreme Leader Ali Khamenei and the IRGC. Advocates of this current promote the idea that the great powers – especially the United States – antagonize the Iranian revolution and that any cooperation with these powers would not produce positive results for Iran. Instead, according to this point of view, collaboration with these powers would undermine the foundation and viability of the Iranian state. Based on that assumption, supporters of this current believe in the necessity of expanding the Resistant Economy and limiting international cooperation to the lowest possible level.

The power struggle that erupted between the two camps – Reformers and Hardliners – harmed the Iranian energy sector through attempts to control it. Traditionally, the Iranian National Oil Company, owned by the government under the supervision of the Ministry of Petroleum, was responsible for all oil projects in the country.⁽¹⁶⁾ However, during former president Ahmadinejad's era, the IRGC strongly penetrated Iranian energy projects to fill the gap resulting from the withdrawal of the Western partners after the extension of international sanctions on Iran in 2010-2011. For example, in 2011, Nejad appointed as minister of oil Rostum Qasemi, former chief of the IRGC Khatam Alanbia Company. In addition, after the inauguration of the current president, Hassan Rouhani, in 2013, the IRGC remarkably strengthened its own position in the Iranian energy sector.

To confront the growing influence of the hardliner current over this vital sector of the Iranian economy and politics, President Rouhani took serious steps and replaced Iran's Oil Minister Qasemi with Began Zanganah. The new oil minister is a technocrat who has extensive experience. He took over the Ministry of Petroleum from 1997 through 2005 and the Ministry of Energy from 1988 through 1997. On the other hand, Rouhani sought to pass a new law to contract, in the Iranian energy sector, with international companies that expressed their unwillingness to do business with Iran within the new form of buyback contracts.⁽¹⁷⁾

As a substitute for these contracts, the Iranian government introduced a draft law under the name "Iran's Petroleum Contract" that triggered controversy in the Iranian parliament and the Guardian Council that reports to the Supreme Leader. As a result, President Rouhani and Minister of Petroleum Zanganah were obliged to amend a number of terms of the new draft law to strike a balance between the tendencies toward Reform and Toleration of the interests of the conservative current headed by IRGC. The Iranian parliament approved the new structure of the Iranian Petroleum Contract in September 2016. It achieved the

balance and included terms to draw international oil companies back to Iran. Unlike the structure of the old contract, which was based on a buyback context, the new contract included the detaining, but not ownership, of oil reserves for 20 to 25 years to regain the companies' running costs.⁽¹⁸⁾ The new contract also allowed foreign companies to take their rights either in cash or through barter deals in the form of production quotas.

To enhance the structure of internal capabilities, the new contract emphasized the necessity of a partnership between the international and Iranian companies. This would guarantee the participation of Iranian companies and stakeholders in developing Iranian oil and natural gas fields.

In this way, the new Iranian oil contract succeeded in reconciling the Reform camp agenda, which emphasized the need to encourage international cooperation to reap significant benefits from the Iranian energy sector's extensive capabilities, and the hardliner camp agenda, which was based on the "Resistant Economy" strategy to prevent foreigners from curbing the advantages of the Iranian Revolution. To consolidate this success, Rouhani's government asserted, as quoted by Iran's Oil Minister Zanganah, that more than half of future oil contracts would be granted to Iranian companies, especially companies owned by advocates of the hardliner current, like Khatam Alanbia Company and others, under the new law regarding Iranian oil contracts. Indeed, the Iranian government granted to the company a contract to develop four oil fields for the development of the oil and gas industry in Fars (POGIDC), reporting to "Setad-E Ejraei-E Farman-E Imam Company" under the supervision of the Supreme Leader Khamenei. Based on the above, the internal rivalry between the reformers and hardliners in Iran played a major role in the recovery of the Iranian energy sector despite sanctions relief on Tehran throughout the past two years. President Rouhani succeeded in assuaging hardliners with respect to their interests in the Iranian energy sector by including hardliner companies in the sector's future projects; otherwise, the new Iranian oil contract would not have been passed because it opens the door for foreign companies to resume their activities in the Iranian energy sector, as stated in the aforementioned "Total" contract. However, the international oil companies would not welcome the inclusion of the hardliner current's companies, as will be explained hereinafter.

Externally, since sanctions relief in January 2016, the following developments contributed significantly to the stalemate in terms of signing contracts with world energy companies despite sanctions relief:

1. The world's oil prices declined more than fifty percent since mid-2015, which posed a major challenge regarding attracting new companies to the Iranian energy

sector and thereby increasing production. This was especially true because most of these companies had dismissed significant numbers of their workers due to the decline in their profits. At the same time, in light of the drop in oil prices, the Iranian government found it difficult to attract international energy companies to improve Iran's oil production due to the deterioration of the Iranian government's position with respect to these companies. Indeed, the Iranian negotiator was obliged to decrease the Iranian government's proportion of profit to ensure the signing of contracts with international partners; otherwise, Iran would have lost these partners, especially after the inauguration of Donald Trump as President of the United States.

Furthermore, the OPEC agreement of November 2016, which was renewed in May 2017 and might be extended in the future to freeze Iranian oil production in light of the decline in oil prices, would lay another obstacle for international companies to increase oil production in Iran.

2. The tendencies of new US President Donald Trump, who was inaugurated on January 21, 2017, overshadowed the Iranian energy sector because of uncertainty over the future of US-Iran relations and the implementation of the nuclear deal and sanctions relief on Tehran. Before and after the US Presidential elections, Trump expressed his rejection of the nuclear deal, saying it was one of the worst agreements in history.

The new US administration stated that the latest Iranian activities, represented by ballistic missile tests and destabilization of the region (especially in Syria, Iraq, Yemen, and Lebanon) would be decisively confronted. In February 2017, the United States added twenty-five IRGC entities to the sanctions list due to Iran's missile activities and support of terrorism.

In addition, Riyadh US-Gulf and US-Islamic summits in May 2017 concluded that Iran was the world's number-one supporter of terrorism. In June 2017, the US Senate voted overwhelmingly to extend sanctions on Iran over accusations that Iran was supporting terrorism throughout the world.⁽¹⁹⁾ On July 18, 2017, the Trump administration imposed new sanctions on Iran in relation to the Iranian missile program and Iran's support of terrorism. The US Department of State said that the new sanctions would include eighteen Iranian personalities and organizations involved in the Iranian missile program or working in the IRGC. The statement also criticized Iran for supporting the Syrian regime and groups like Hezbollah and Hamas. In light of this hard line that the international community adopted toward Tehran, a number of large international energy companies feared doing business with Tehran and risking their investments in this country. Most of these companies believed that the current US administration – especially

with the Republican majority in the US Congress – would at any time rip the nuclear deal from one side and include these companies in US sanctions on Iran by implementing American laws outside its borders, as the US courts had levied thirteen billion USDs in fines against European banks charged with dealing with Iran. In addition, the United States imposed new sanctions on Iran and the US Congress introduced several initiatives with respect to this concern.

Third: Future of the Iranian Energy Sector

For two years, the Iranian energy sector has been at a crossroads after sanctions relief on Iran. There are many reasons for this: internal political rivalry between reformers and hardliners, the decline of world oil prices, and the Trump administration's anti-Iran strategy.

These three factors might continue in the near future and negatively impact the Iranian energy sector as well as exacerbate the lack of confidence Western companies maintain toward other Iranian sectors – especially in light of the unknown future of US-Iran relations under the Trump administration. Even if the European nations (unlike the tendency of the current US president) continue their support of the JCPOA, many European energy companies will remain hesitant to do business with Iran in light of the possibility of the implementation of US laws outside its borders.

On the other hand, Iran's ability to attract foreign investments to its energy sector depends on foreign companies' reactions to the new Iranian oil contract, which indicates the need for Iranian companies – including the IRGC companies under international sanctions – to participate in the contract. Hence, to avoid violating Western sanctions, the Iranian government must find a way to allow the IRGC to gain its share in the energy sector without impacting the contracts of international oil companies, especially European companies and, perhaps later, American companies. In other words, there will be an urgent need to separate the international oil companies and the IRGC companies when these companies start working in the Iranian energy sector. Even if, in the short term, the Iranians succeed in attracting a number of companies to invest in its oil projects, Iranian oil will not flow quickly in the international markets due to the decline in the world's oil prices. In light of the above, many observers assert that Tehran – instead of placing all its eggs in the basket of European companies – can only wait to discover the nature of its relations with Washington while simultaneously working to enhance its ties with Russia, China, and other Asian nations. According to the Iranian National Petroleum Company, many Chinese, Russian, Japanese, and Korean companies are qualified to work in the Iranian energy sector. (See table 3).

*Table (3): Companies qualified to bid
for the development of Iranian oil and natural gas fields*

CNOOC (China)	Lukoil (Russia)	Posco Daewoo (South Korea)
CNPC (China)	Maersk (Denmark)	PTTEP (Thailand)
CNPW (China)	Mitsubishi (Japan)	Schlumberger (Netherlands/US)
DNO (Norway)	OMV (Austria)	Shell (Netherlands/UK)
Eni (Italy)	ONGC Videsh (India)	Sinopec (China)
Gazprom (Russia)	Perenco (France/UK)	Total (France)
Inpex (Japan)	Pertamina (Indonesia)	Wintershall (Germany)
ITOCU (Japan)	PGNiG (Poland)	
Korea Gas Corporation (South Korea)	Plus Petrol (Argentina)	

Source: NIOC¹⁴

Conclusion

What might boost the Iranian government's tendency to approach Asian energy companies about supporting the Iranian energy sector is the fact that many official and unofficial departments highlight the risk of relying entirely on Western companies, saying that Western sanctions on Iran have damaged the Iranian energy sector since 2011, while the commitment of Asian companies – especially Chinese companies – has contributed to the preservation of the Iranian energy sector. These departments added that inviting Asian companies to work in the Iranian energy sector and other sectors is an act that shows gratitude to these companies because of their positions during the period of sanctions on Iran. Such a move will also enhance political relations with countries like China and Russia – the two permanent members of the International Security Council.⁽²⁰⁾ However, an inclination toward using Asian and Russian energy companies to revive the Iranian economy will not succeed without the parallel success of President Rouhani's government in striking an internal balance in Iran. During the period of sanctions, the IRGC companies and other entities that were related to the hardliner current entered the Iranian energy sector and enjoyed significant political influence in Iran. Indeed, these companies' participation in the Iranian energy sector, along with international companies, will be necessary. On the other hand, the Iranian government must overcome the difficult Iranian business environment, which, according to many international investors, is characterized by corruption and bureaucratic and legal complications.

Finally, despite the improbability of this occurring in the near future, the Iranian energy sector might suddenly collapse at some point due to two possible scenarios. The first scenario is the eruption of a military confrontation between Iran and the

United States and its allies in the Middle East if Tehran does not stop its hostile practices and interference in the affairs of neighboring countries, including its attempts to control the region and spread chaos and terrorism in Arab countries, as well as develop its nuclear and missile programs. The second scenario is the eruption of chaos in Iran. The continuation of the harsh living and economic conditions most Iranian people face, despite the implementation of the nuclear deal, will lead to public outrage and an eruption of political and economic instability in the country. This nightmare scenario will most likely happen due to sluggish growth in the Iranian energy sector that, for the current political leaders, is a lifesaver in terms of generating new revenues to help Tehran recover from its lifetime economic crisis, decrease the budget deficit, diminish internal and external debts, decrease the unemployment rate (which has increased so that it includes more than eight million people), and limit the inflation and high prices that the Iranian people have faced for years.

Endnotes

(1) In general, this agreement allows for the lifting of most sanctions on Iran in exchange for curbing Iranian nuclear ambitions through strict international monitoring of Tehran. For more information, see: Samore, Gary, "The Iran Nuclear Deal: A Definitive Guide." Belfer Center for Science and International Affairs, Harvard University, Cambridge, MA, August 3, 2015. <https://goo.gl/zEwAa8>

(2) Since 2006, the Security Council has adopted six decisions, asking Iran to cooperate with the International Atomic Energy Agency and to stop uranium enrichment that could be used for civilian purposes or nuclear weapons. The six decisions included the gradual imposition of sanctions that would force Tehran to listen to the Security Council queries. The United States and the European Union also imposed separate sanctions, including a ban on Iranian oil exportation and banking transactions since 2012. On the other hand, the consecutive US sanctions on Iran go back to the beginning of the US hostage crisis in 1979, and are supported by US accusations that Iran supports international terrorism, violates human rights, and rejects cooperation with the International Atomic Energy Agency. US sanctions banned almost all dealings with Tehran, except for activities the US deemed "for the interests of the Iranian people," including medical and agricultural equipment, humanitarian aid, and dealings related to the media, like movies. In November 2011, the US administration targeted Iranian oil revenues by threatening to halt Iran's dealings with the international financial institutes that run the financial transactions with Iran's central bank in the United States. In January 2012, the European Union also froze assets for Iran's Central Bank and imposed sanctions on all trade deals involving gold and other precious materials with this bank as well as the other Iranian governmental organizations. Six months later, the European Union banned the importation, purchase, and transportation of Iranian oil. Until then, the twenty-seven members of the EU had imported twenty percent of Iran's oil exports. In addition, the EU asked European companies to stop issuing insurances on Iranian oil shipments resulting from the contracts between these companies and Iran, knowing that the EU passed ninety percent of these insurances before sanctions. In 2012, the international transaction organization SWIFT, located in Brussels, excluded Iran from its system, which obstructed the flow of funds from and to Iran through legal channels. In October 2012, the EU stopped all financial transactions with Iranian financial organizations and banned the importation, purchase, and transportation of Iranian natural gas as well as the building of oil tankers in favor of Iran.

(3) "Spider Web: The Making and Unmaking of Iran Sanctions." International Crisis Group. Last modified February 25, 2013. <https://goo.gl/Hmqxhb>.

(4) "Iran Country Analysis Brie." U.S. Energy Information Administration. Last modified June 19, 2015. <https://www.eia.gov/beta/international/country.cfm?iso=IRN>.

(5) At the beginning of 2015, Iranian oil reserves amounted to about 158 billion proven barrels that equaled ten percent of the world's oil reserves and more than thirteen percent of OPEC reserves. In 2013, Iran's reserves of natural gas amounted to 1201 trillion cubic feet, occupying the second highest rank in the world after Russia. Eighty percent of Iranian natural gas reserves are located in undeveloped fields.

(6) In 2013, Iran's reserves of natural gas amounted to 1201 trillion cubic feet, occupying the second highest rank in the world after Russia. Eighty percent of Iranian natural gas reserves are located in undeveloped fields.

(7) Since the 1970s, Iran's oil production has varied significantly, with an average of 5.5 million barrels per day in 1976-1977 and a maximum production capacity of six million barrels per day. This placed Iran first in the world during this period. However, since the eruption of the Iranian revolution in 1979, the Iraqi-Iranian war, the suspension of foreign investments, the imposition of sanctions, and the decrease in the normal production of Iranian oil fields, Iran could not resume its high level of production. In 2011-2012, international sanctions obstructed the production process and impacted investment in all oil projects. As a result, Iran's production reached only 2.7 million barrels per day in 2013. In April 2017, Iran's oil minister, Began Zanganeh, announced that the latest production rate in Iran was 3.8 million barrels per day.

(8) Iran produced about 5.7 trillion cubic feet of solid natural gas in 2013. The giant South Fars field has about twenty-seven percent of the total reserves of Iran's proven natural gas, making it the biggest natural gas field in Iran.

(9) At its narrowest point, the Hormuz Strait extends to twenty miles. About seventeen million barrels of oil per day crossed this strait in 2013 (thirty percent transported and exchanged oil by sea and twenty percent of the world's oil trade all over the world). In addition to oil, some quantities of liquefied natural gas (LNG) pass through this strait (especially from Qatar), representing thirty percent of the world's annual natural gas trade.

(10) Recently, Iran's Ministry of Oil announced that its exports of crude oil and gas at the end of February 2017 amounted to three million and fifty thousand barrels per day. Asian countries such as China, India, Japan, and South Korea, and European companies such as the English-Netherlands "Shell", the French "Total", the Greek "Hellenic", and the Italian "Eni", are some of the most important buyers of Iran's crude oil.

(11) Iran's current minister of oil estimated that the required investment for the crude oil sector is 100 billion USDs or more. Other estimations stated that this sector needs new investments of about 130-145 billion USDs by 2020 to preserve the current production capacity.

(12) "Deciphering the Iranian Leader's Call for a 'Resistance Economy.'" *The Guardian*. Last modified April 19, 2016. <https://www.theguardian.com/world/iran-blog/2016/apr/19/iran-resistance-economy-tehranbureau>.

(13) The EU still validates several sanctions on Iran, such as the ban on selling weapons, missile technologies, and ammunition for domestic repression. The EU is also still imposing sanctions on 84 Iranian individuals and organizations and bans them from visiting EU countries because of human rights violations.

(14) The US administration extended on Tehran secondary sanctions related to the non-proliferation of nuclear weapons (targeted foreigners not subject to the US laws) by issuing what is known as presidential waivers or by failing to implement punishments despite their validity. Nevertheless, the United States continues to impose sanctions on Tehran for human rights violations and its support of terrorism. As a result, US companies are still not allowed to do business with Iran's energy sector.

(15) The first contract is the first since sanctions relief on Tehran at the beginning of 2016. The Iranian official news agency said that the project of developing the eleventh stage of South Pars field requires an investment of about 4.8 billion USDs. The total cost of the project's first stage is estimated to be about two billion USDs. The French "total" will include a share of 50.1%. The Chinese CNPC will be responsible for 30%, while Petropass will be responsible for 19.9%. Iran's Ministry of Oil expects the project to achieve a value of 54 billion USDs of gas based on current prices. Gas will start flowing in the Iranian market in 2021. According to "Total", the project's production capacity amounts to two billion cubic feet, or 400 barrels, of oil per day, including capacitors. For more information, see: "Iran Signs a Big Deal with the French Total to Develop Fields in the Joint Field with Qatar Pars." *CNN*. <https://arabic.cnn.com/business/2017/07/04/iran-total-sign-2-billion-gas-deal>.

(16) The Iranian Higher Council for Energy, which was established in July 2001 and is headed by the President of the Republic, oversees Iran's energy sector. This council comprises the ministers of petroleum, economy, agriculture, industry, mines, and others. The Iranian National Petroleum Company (NIOC), which the government owned under the Ministry of Petroleum, was responsible for all oil projects. The company also controls the refining industry and local distribution networks. After the extension, in recent years, of the international sanctions on Tehran, the IRGC Khatam Alambia Company became the most active player in Iran's energy sector.

(17) Buy-back contracts allowed the international oil companies to enter bids to search for and develop oil fields with the Iranian government through one of the Iranian companies. According to these contracts, the entrepreneur receives his fares, which are determined based on the operations of oil and gas development, while the contractor provides the necessary funds. When accomplishing any certain task, the Iranian National Petroleum Company or the related sub-company takes back management. Then, the basic costs are deducted from oil and gas revenues. According to many experts, the average of the returned funds on

the buy-back contracts amounted to between twelve and seventeen percent in seven years.

(18) The new contract prohibited foreigners from owning Iran's oil reserves. This prohibition came about in response to conservatives' fears about the possibility of foreign control of Iran's natural resources, a situation the Iranian constitution clearly prohibits.

(19) In this context, the JCPOA does not compel the United States to lift sanctions on Tehran because of its support for terrorism, its human rights violations, and its missile program development. Some of the valid US sanctions on Iran, despite sanctions relief resulting from the nuclear deal, are as follows:

The ban on trade or investment in Iran, Executive Order 12959

The punishment of terrorist organizations (not limited to Iran), Executive Order 13382

The nonproliferation act of nuclear weapons in Iran and Iraq, which imposes sanctions on international companies that sell technology and weapons of mass destruction to Iran.

The nonproliferation act of nuclear weapons in Iran, North Korea, and Syria (INKSNA).

The executive orders that punish Iran for interference in Iraq (Executive Order 13434) and for assisting Assad's regime in Syria (Executive Order 133572).

Executive Orders 13606 and 13628, related to human rights or democratic change in Iran.

Organizations that are still under sanctions, like the IRGC, the Iranian Army, terrorism-related groups, and entities that violate human rights.

All sanctions resulting from the classification of Iran as a terrorist sponsor state.

US Treasury regulations that ban Iran from having contact with the US financial system.

For more information see:

"Frequently Asked Questions Related to Lifting of Certain U.S. Sanctions Under the Joint Comprehensive Plan of Action (JCPOA) on Implementation Day." U.S. Department of Treasury. <https://goo.gl/KiXjiQ>.

(20) "Iran and China to Increase Energy Cooperation When Sanctions Removed: Zanganeh." Press TV. Last modified April 10, 2015. <http://presstv.com/Detail/2015/04/10/405572/Iran-China-to-boost-energy-cooperation>.