A GLANCE AT IRANIAN NUCLEAR PROGRAM
FROM BEGINNING TO NUCLEAR DEAL 2015
AND THE ROLE OF RUSSIA

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Abstract. Iran’s nuclear program was launched in the 1950s with the help of US president Dwight D. Eisenhower as part of the UN “Atoms for Peace” project. During Raza Shah’s Era, many developments occurred in the Iranian nuclear program. After the Islamic revolution, the nuclear program experienced a halt but was shortly resumed again, this time with a wide range of sanctions imposed. The development of the Iranian nuclear deal is beneficial for the world in general, as well as the Middle East’s security and stability. It is a diplomatic victory, demonstrating how issues can be resolved in a peaceful way. The negotiation process started in 2003, with the EU3 and Iran early in the game, and China, Russia and the US subsequently joining in. After a brief discussion, an agreement was reached. Russia described the consensus as a “huge sigh of relief” for the world. The neighboring countries, however, have a different take on the things. Saudi Arabia and Israel, for instance, feel threatened by the nuclear program and call the deal a “historic mistake”.

Key words: Iran Nuclear Program, NPT, P5+1, Iran-US nuclear deal, Bushehr reactor, Uranium enrichment

INTRODUCTION

The Iranian nuclear program was launched during the Shah Era in the late 1950s. In 1957, an agreement for cooperation in research of the peaceful uses of atomic energy was proposed under the authority of the program “Atoms for Peace” [5], followed by another agreement in 1960, sponsoring a small 5MW research plant for Tehran University. The program “Atoms for Peace” was initiated by President Eisenhower in his speech at the United Nations (UN) General Assembly in 1953 [5]. He spoke about the formation of the International Atomic Energy Agency (IAEA), an organization under the UN, intended for research of nuclear power for “the peaceful pursuits of mankind”, whose “special purpose would be to provide abundant electrical energy in the power-starved areas of the world” [7. P. 6].

In 1974, Raza Shah developed the Iranian Atomic Energy Organization (IAEO) and announced his plans for an ambitious nuclear program that would include the construction of over 20 nuclear plants [16. P. 16]. This nuclear program was keenly supported by the Western powers. The US, France, and Germany were counting on lucrative profits from sales to Iran. After the Islamic revolution, the Iranian nuclear program came to a halt for a period of time, but was shortly resumed again; however, most of the international nuclear cooperation with Iran was cut off.
During the era of President Rafsanjani, which began in 1980s, Iran’s atomic program was thriving; however, with the beginning of the Iran-Iraq war, it came to a standstill. In the 1990s, as Iran’s postwar standing improved, its atomic project carried on, supported by Russia, China and Pakistan [19. P. 49—66]. In 1985, and later in 1990, Iran and China signed two nuclear assistance protocols. In 1995, Iran signed a contract with Russia to resume work on the partially completed Bushehr plant and possibly construct a uranium enrichment unity [8. P. 207—213]. Some of the plans originally contemplated in these contracts, such as the enrichment reactors, were never carried out due to pressure by the United States. Despite the recurring pledges from the Russian and Chinese governments to limit their nuclear support for Iran, the two countries continued their assistance throughout the 1990s. During this time, Iran was also suspected to have obtained uranium enrichment equipment through the “black market” system run by Pakistani atomic scientist Abdul Qadir Khan [3], which was condemned by the international community and resulted in multiple sanctions imposed by the UNO, EU and US government, in particular those on trade, oil, medicine and the military.

**P5 + 1 and Iran 2006**

In June 2006, China, Russia, and the United States joined the EU3 countries to offer another proposal for comprehensive negotiations with Iran. The proposition included, along with the previous offers for negotiations, the following key points:

- Iran’s suspension of enrichment-related and reprocessing activities
- The establishment of an apparatus to review this moratorium
- Iran’s resumption of the Additional Protocol
- The provision of cutting-edge light water reactors to Iran through joint projects, along with the nuclear fuel guarantees and a 5-year buffer stock of fuel
- Suspension of the discussion of Iran’s atomic project in the UN Security Council
- Cooperation on civil aviation, telecommunications, high-technology, and agriculture, and other areas, between the United States, EU, and Iran.

Tehran responded to this proposition in August 2006. It rejected the terms of the proposition due to its requirement that Iran should suspend its enrichment-related activities, but noted that the proposition contained “useful foundations and capacities for comprehensive and long-term cooperation between the two sides”. It didn’t, however, identify what those useful foundations were.

Following the election of U.S. President Barack Obama, who tried to abandon the previous U.S. strategy obliging Iran to meet UN Security Council demands and suspend atomic fuel cycle activities prior to negotiations, the P5+1 looked to resume their negotiations with Iran. They issued a statement in April 2009 in which the other five nations welcomed “the new course of U.S. policy towards Iran”, formally inviting Iran to talks yet again. Iran did not react to that invitation until that September, when Tehran issued a reconsidered proposal. Despite the fact that the proposal mirrored a few of the provisions of the one Iran issued in 2008, it did exclude a section on the atomic issue. Instead, the proposal covered the following:

- Cooperation to address terrorism, drug trafficking, organized crime, and piracy
- UN and Security Council reform
♦ The codification of rights for the use of space
♦ Promoting a “guideline based” and “impartial” IAEA oversight function
♦ Promoting NPT comprehensiveness and WMD nonproliferation [6].

**P5+1 Proposal 2009**

Iran’s actions:
♦ Iran terminates all the production of 20%-enriched uranium.
♦ Iran agrees to transfer all of its 20%-enriched uranium to a third country under the IAEA authority.
♦ Iran shuts down the Fordow facility.

P5+1’s actions:
♦ P5+1 guarantees that the Tehran Research Reactor fuel will be delivered to Iran.
♦ P5+1 agrees to encourage the IAEA technical cooperation in order to modernize the TRR and promote its development.
♦ P5+1 consents to review the IAEA projects and give permission to the IAEA Board to restart some of them.
♦ P5+1 has put together a detailed package to provide medical isotopes to help cancer patients in Iran.
♦ The United States consents to allow technical inspection and repair of Iranian commercial aircrafts and agrees to provide the replacement parts.

The P5+1 agrees to participate in acquiring a light water research reactor to produce therapeutic isotopes.

**Joint Comprehensive Plan of Action 2013**

Essentials of the First Phase

Iran will:
♦ cut down its stockpile of 20%-enriched uranium oxide and dilute the rest of the enriched stock to natural uranium levels of five percent and less;
♦ suspend enrichment of uranium to over than 5 percent;
♦ refrain from making any further advances in nuclear activities at the Natanz Fuel Enrichment Plant, the enrichment plant at Fordow and the Arak heavy water reactor;
♦ convert 5% and above enriched uranium produced in the last six months to an oxide compound by the time the new facility is launched;
♦ develop no new enrichment facilities;
♦ agree that all research and improvement works, including the enrichment, will proceed under IAEA custody;
♦ undertake no reprocessing of spent plutonium fuel or development of any facility fit for reprocessing; and
♦ allow IAEA inspector entry at Natanz and Fordow locations on a daily basis, provide access to surveillance information at centrifuge assembly workshops and uranium mines and plants, as well as take steps to conclude a safeguards approach with the IAEA for the Arak reactor.
P5+1’s Action 2013

- pass no new nuclear-related sanctions from the UN Security Council, the EU, and the U.S.;
- pause efforts to reduce Iran's crude oil sales and enable repatriation of Iranian oil revenue held abroad;
- suspend U.S. sanctions on petrochemical exports, import and export of gold and precious metals, approved by the EU;
- suspend U.S. sanctions on Iran's automobile industry;
- license the supply of spare parts for Iranian civil aviation, including repairs and safety-related inspection;
- establish a financial channel to facilitate humanitarian trade for Iran’s domestic needs using Iranian oil revenue held abroad, which can also be used to provide tuition payments for Iranian students studying overseas and coverage of Iran’s UN dues;
- increase the EU authorization thresholds for non-sanctioned exports/imports with Iran:
  - agree upon the duration;
  - pay due consideration to the rights and duties of all NPT parties and to IAEA safeguards.

On July 14, 2015, after 17 days of almost non-interrupted negotiations, a historic deal is reached in Vienna. It brings to an end a 12-year stand-off and possibly marks the beginning of a new period in relations between Iran and the west. Attention turns to the US, where Barack Obama has promised to veto any attempt by Republican opponents to undermine the arrangement [18].

Nuclear deal 2015

The Iran nuclear deal can undoubtedly be considered a positive change in international politics. Despite the fact that some neighboring countries have concerns about the deal, on a large scale, it received favorable responses and was cordially welcomed by the world powers. Faced with multiple sanctions, Iran was experiencing an economic crisis, fraught, with inevitable economic collapse according to some experts. Without a doubt, the sanctions caused irreparable damage to Iran’s trade, oil export, and economy in general. It is notable that the deal was initiated by the west in 2003, during President Mehmood’s period, but back then, no agreement was reached [24]. In 2013, when President Rohani came to power, the negotiations between P5+1 and Iran resumed, with the strongly-pronounced intention to solve this nuclear issue by peaceful means.

At last, after a long and painful struggle, the deal came into action, and a new nuclear agreement between P5+1 and Iran was made on July 14, 2015 [23. P. 79—92]. According to this agreement, Iran will refrain from building any new nuclear facilities and will reduce its uranium stockpile and the number of centrifuges. Iran obliges to halt its nuclear program for 15 years and provide open access to all its nuclear sites for the IAEA inspectors. Iran has the right to continue its nuclear program for peaceful proposes under the supervision of IAEA. Upon the implementation of the deal, the sanctions
imposed by the UNO, EU and U.S. will be suspended, allowing Iran to do trade with the rest of world and get on the path of economic recovery. Thus, the deal has brought about a lot of positive changes for Iranian economy.

The two major Middle Eastern countries that have serious doubts about the deal and call it a “historic mistake” [14. P. 92—104] are Israel and Saudi Arabia. They fear that the deal will disturb the regional security and stability and trigger an arms race among the regional countries, which raises the chances of war. The world powers, however, insist that this agreement is a guarantee that Iran will not build any nuclear weapons in the future. Russian President Vladimir Putin spoke about the positive implications of the deal for the world peace, proclaiming this deal a “huge sigh of relief” [17] for the entire globe.

**Conditions for Uranium Enrichment:**

- Iran has committed to reduce the number of its operational centrifuges by 66 per cent: from its current stockpile of 19,000 to no more than 6,104, with only 5,060 allowed to enrich uranium. Each of the 6,104 rotators will be IR-1s, the first-generation centrifuge type, Iran’s oldest and least efficient.
  - Iran has contracted to enrich uranium only to 3.67% for at least 15 years.
  - Iran has agreed to reduce its present stockpile of around 10,000 kg of low-enriched uranium (LEU) to 300 kg of 3.67% LEU for 15 years.
  - All excess centrifuges will be dismantled and stored under IAEA monitoring.
  - Iran has consented not to build any new facilities engaged in uranium enrichment for 15 years.
  - As a result of the above measures, over the next decade, the “breakout time” — the time in which it would be possible for Iran to make enough material for a single nuclear weapon — be extended to roughly a year, from the current estimated breakout time of 2 to 3 months.
    - Iran’s Fordow facility will stop enriching uranium for at least fifteen years.
    - Iran has consented to convert Fordow facility into a nuclear physics and technology center, used for the purposes of peaceful nuclear research.
    - Iran has consented not to conduct any innovative enrichment-related research at Fordow for 15 years.
    - Iran will not have any fissile material at Fordow for 15 years.
    - Almost 66% of Fordow's centrifuges will be dismantled. The remaining centrifuges will not enrich uranium. All centrifuges and related equipment will be monitored by IAEA [21]. Iran will still be allowed to enrich uranium at the Natanz location with just 5,060 IR-1 original centrifuges for 15 years.
      - Iran will uninstall 1,000 IR-2M centrifuges presently operating at Natanz and put them in IAEA storage for ten years.
      - Iran will not utilize its IR-2, IR-4, IR-5, IR-6, or IR-8 models to produce enriched uranium for at least ten years. Iran may conduct limited research with uranium on a single centrifuge in accordance with the schedule and conditions of the development plan approved by the P5+1.
For an extended period of time, enrichment and enrichment-related research will be restricted to guarantee the “breakout time” of no less than 1 year. In the next 10 years, Iran will comply with its enrichment and enrichment R&D arrangement under the IAEA jurisdiction, as well as with the JCPOA, under the Additional Protocol specifying the enrichment restrictions [4].

Sanctions Relief:

- Iran will be relieved from sanctions, provided that it unquestionably complies with its duties.
- Nuclear related sanctions, imposed by EU, will be lifted after the IAEA is assured that Iran has completed the major part of its obligations. In case of non-compliance of Iran’s part, the sanctions will be put back in place.
- Most of the U.S. primary nuclear related sanctions on Iran will remain in place for the time of the arrangement, while the secondary ones will be removed but subject to snapback in the event of a major violation of the agreement by Iran.
- Upon the implementation of all the nuclear-related measures by Iran, the UN Security Council will terminate all previous resolutions targeting Iran’s nuclear program.
- A new UNSC resolution will revise the key provisions and update the JCPOA while encouraging its absolute implementation. Imperative restrictions on the use of conventional arms and ballistic missiles were also added to the new resolution in additional provisions.
- A dispute resolution mechanism will be introduced, allowing any JCPOA party to express their objections about the execution of JCPOA duties.
- If the event of substantial violation of the JCPOA by Iran, identified by this mechanism, all the former UN restrictions will snap back in place [22].

Stages of the Deal Implementation:

- For the period of ten years, Iran will restrict domestic enrichment and enrichment-related research, guaranteeing a “breakout” time of no less than one year. After that, Iran will be bound by an even longer term arrangement agreed upon with the P5+1.
- For the period of fifteen years, Iran will be obliged to restrict its enrichment capacity. For example, Iran will refrain from building any new enrichment facilities or heavy water reactors, reduce its stockpile of enriched uranium and acknowledge the improved monitoring methods.
- For the next 15 years, important control and assessment measures will be initiated. The IAEA will continuously monitor Iran’s uranium mines and mills, enrichment levels and the production of centrifuges.
- Even upon the expiration of the most stringent regulations imposed on Iran’s nuclear program, it will remain subject to the conditions of the Nuclear Nonproliferation Treaty (NPT), which prevents Iran from obtaining or developing nuclear weapons and applies the IAEA safeguards on its nuclear activity [13].
Russian support of Iran's nuclear program for peaceful purposes

The building of a 1,000MW pressurized light-water nuclear plant in the Iranian port city of Bushehr was started by German companies, and after the work was stopped because of the Islamic revolution, Russia took over the construction in 1995 [8. P. 207—213]. The plant is equipped to contribute around 4% of Iran's electricity to the national power grid. The facility also has sufficient capacity to provide Iran with enough weapon-graded plutonium that could be used to develop roughly 35 atomic weapons every year.

However, to be able to use the Bushehr plutonium in construction of an atomic weapon, the Iranians would need to build another plant to produce concentrated plutonium from Bushehr’s spent fuel. Iran would also need to maintain the spent fuel. Conforming to the earlier deal, Russia contracted to supply Iran with low-enriched uranium for the first ten years of Bushehr’s operation. However, according to the new agreement made in February 2005, Russia obliged to repatriate all the spent fuel that could be further reprocessed [15. P. 125—131]. Moreover, Iran has consented for the plant and its fuel stock to be monitored by the IAEA, so any unauthorized use of the fuel would harm Iran's commitments spelled out in the Nuclear Non-proliferation Treaty (NPT).

Despite Iran's guarantees to give back the spent fuel, Iran has made several attempts to get out of the deal, demonstrating its eagerness in search for an opportunity to reprocess and control the plutonium stock. As indicated in a document submitted to the Nuclear Suppliers Group (NSG) by the French party in May 2003, “Iran has tried to obtain high thickness radiation protecting windows for hot cells and 28 remote controllers from the French atomic industry. Such hardware is explicitly intended for the extraction of plutonium from spent reactor fuel” [20. P. 759].

On top of that, Iran also made an attempt to introduce new heavy water facilities at its nuclear sites, such as a heavy water production plant and a light water research unit in Khondab region close to Arak site, around 150 miles southwest of the capital [25. P. 46—52]. The existence of this facility was first revealed publicly by the Iranian opposition group, National Council of Resistance of Iran (NCRI), in August 2002, and then located by commercial satellite imagery December 2002 [25]. Iran reported to the IAEA that the facility would utilize around sixteen tons of heavy water yearly. Furthermore, in May 2003, Iran announced its plans to build a 40MW heavy water research unit, called the “Iran Nuclear Research Reactor (IR-40),” at the same site [1. P. 69—96]. The facility, powered by normal UO2, intended to utilize heavy water both as a coolant and a broker. The regular UO2 would be delivered to a transformation facility in Isfahan and made into fuel at a fuel producing plant, also in Isfahan. Iran confessed that it received some “exterior” assistance in the configuration of the plant. Meanwhile, the United States suspects Russia in being this “behind-the-scenes” ally [1. P. 69—96].

Iran Nuclear Deal: an Option or an Obligation?

After the collapse of Saddam Hussein’s regime, Iran became a regional conventional military super power in the Gulf region. According to James H. Noyes, Iran’s nuclear program would be most dangerous for Gulf Cooperation Council (GCC) to
dismiss. Iran’s strident and defiant fervor conveys a direct and a potential military threat to GCC and the West. This “earthquake” can cause more destruction in the Gulf States as compared to Iran [12. P. 4]. Dawood Ali Shirian, a Saudi Arabian analyst, confirms this point of view: “Gulf nations utterly refuse any idea that Iran should own a nuclear weapon, and they want to stop enrichment except under international control” [12. P. 5].

Iran’s oil has always been an intensely political commodity. Iran nuclear program is more dangerous because the United States feels that Iran has the capability to hit densely populated areas of Europe, Israel and oil fields of Saudi Arabia, and other oil routes which are more important for the United States [11. P. 1—5]. If Iran stops the supply of oil, the prices will go up to the highest level. Iran’s oil reserves are second largest after Saudi Arabia. Many European countries are dependent on Iran for oil and gas.

The intention of the western powers was to avoid an arms race in the Middle Eastern region that might have been triggered had Iran produced nuclear weapons. The unstable U.S. economy, staggered by the wars in Afghanistan and Iraq, does not let the United States launch a new a war on Iran. Moreover, being an emerging power in the Middle East, supported by Russia and China, Iran is different from Iraq. War with Iran could derail the United States’ economy and destroy the Middle East region. Understanding these implications made the United States chose peace over war. Besides, the U.S. needs Iran to fill the gaps in the region after Afghanistan’s withdrawal. Iran’s involvement is necessary to control the regional issues afflicting Syria, Yemen, Iraq and Daish, as well as to help resolve the Israel-Palestine conflict [2].

The Iran nuclear deal will contribute to the improvement of the US-Iran relations which, more importantly, will help to resolve the regional issues between Gulf States and reinforce the security of Lebanon in the west and Afghanistan in East [10. P. 24].

The pro-Israel lobby in the United States insists that putting pressure on Iran is the only way to force change in its behavior and warns against concluding any further deals with the Iranian state. Senator Menendz suggested a sanction bill, which in practical terms is a complete oil embargo on Iran and is guaranteed to bring it to the “negotiating table” [10. P. 22]. The sanctions imposed on Iran made it challenging for the country to obtain materials and components for its nuclear program.

Russia, in the meantime, pointed out that economic sanctions and military force cannot resolve the nuclear issue, which can only be sorted out by diplomatic and political means. Alternative options should be highlighted. Negotiations, punitive economic sanctions, covert sabotage and military threats will, at best, merely delay in Iran’s nuclear program [26].

**Process of the Iranian Nuclear Deal:**
**From Confrontation to Cooperation in 2003**

The negotiations on Iran’s nuclear deal started in 2003. According to Guldimann, a former Swiss ambassador to Tehran, in May 2003 Iran issued a proposal to discuss and settle down its matters with the US, including the nuclear issue and other sensitive topics, such as disarmament, regional security and economic restrictions. Until then, neither party had been willing to sit at the negotiating table. The Iranians had been
more adamant on the nuclear issue and flatly refused to discuss it with the U.S., thinking of conducting their own nuclear policy as their unalienable right. The negotiation process started in 2003, originally with the EU3 and Iran, and later with China, Russia and the US, as a result of which an agreement was reached on July 14, 2015. The agenda included the following key points:

♦ lifting nuclear-related sanctions on Iran;
♦ cooperation on Iraq’s stability;
♦ transparency of Iran’s nuclear activities and comprehensive monitoring of its facilities, which entailed signing the Additional Protocol;
♦ anti-terrorist cooperation, mainly against the Mujahedin-e Khalq (Iran) and al-Qaeda;
♦ Iran’s recognition of the 2002 Arab League’s “land for peace” avowal on Israel/Palestine;
♦ Iran’s right to conduct nuclear, chemical and bio-technological research for peaceful purposes.

However, the Bush government rejected the proposal in order to put pressure on Iran [9].

**Conclusion**

The United States had many options to bring an end to the Iranian nuclear program; each option, however, posed a dilemma or a predicament. An air strike, for example, would be unacceptable because of the covert underground facilities and some facilities near populated areas. The United States will not tolerate the production of nuclear weapons in Iran, both Bush and Obama stated. Despite the reports stating Israel’s intentions to destroy Natanz facility, United States found it hard to believe that Israel had the capacity to do so without using nuclear weapons. Russia’s role in the negotiations on the Iranian nuclear program cannot be denied. A peaceful solution of the matter was reached by the nuclear deal in 2015. Additionally, Russia has offered to supply Iran with air-defense S-300 system, after which Iran feels more confident than ever, and Israel feels more threatened.

Russia and China never planned any type of attack on Iran. Despite the fact that the two states were imposing more sanctions on Iran, Russia was encouraging the global powers to start negotiations. Contrary to President Bush’s opinion that war might be the only option to curb Iran’s nuclear ambitions, Russian officials stated that war would not only fail to solve the nuclear problem but also would do irreparable damage to the regional security. The only way to solve the nuclear issue, as seen by Moscow, was by diplomatic and peaceful means. Thus, Russia protected, promoted and developed the Iranian nuclear program for peaceful means from the period of the nuclear controversy to the nuclear deal of 2015.

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Ядерная программа Ирана была инициирована в 1950-х годах с помощью Президента США Дуайта Эйзенхауэра в рамках проекта ООН «Атом во имя мира». Авторы показывают, что в эпоху Шаха М. Реза Пехлеви иранская ядерная программа активно развивалась. Однако после Исламской революции ядерная программа страны была приостановлена, но вскоре вновь возобновилась, на этот раз с введением широкого спектра внешних санкций против страны. Авторы утверждают, что развитие иранской ядерной программы нужно миру в целом, а также способствует безопасности и стабильности на Ближнем Востоке. В статье отмечается, что переговорный процесс начался в 2003 году между ЕС и Ираном, а в дальнейшем к нему присоединились Китай, Россия и США. После достижения договоренностей Россия назвала сложившийся консенсус вокруг атомной программы Ирана «огромным вздохом облегчения» для всего мира. Однако авторы полагают, что страны региона, например Саудовская Аравия и Израиль, воспринимают ядерную сделку иначе, так как чувствуют угрозу от иранской ядерной программы, а политическое руководство данных стран публично называет сделку «исторической ошибкой».

Ключевые слова: ядерная программа Ирана, NPT, P5+1, ядерная сделка Иран—США, АЭС Бушер, обогащение урана

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