IRAN NUCLEAR DEAL AND ITS FUTURE UNDER TRUMP ADMINISTRATION

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Abstract

The successful nuclear deal signed between Iran and P5+1 nations, also known as the Joint Comprehensive Plan of Action (JCPOA), limited Iran's nuclear activities, placing these under the watch of the International Atomic Energy Agency (IAEA). The deal has not only increased Iran's breakout time to develop nuclear weapons to more than a decade but has also diminished the threat of Iran-Israel confrontation. The JCPOA only applies to Iran's nuclear programme and does not take into account other issues like Iran's missile programme and its role in the Syrian conflict. Iran has used this deal to influence the situation in Syria, Iraq, and Yemen in its favour, which antagonised several regional states, including Israel, Turkey, Saudi Arabia, and other Gulf Cooperation Council (GCC) states. The newly elected Trump administration in Washington has threatened to scrap the JCPOA if Iran would not stop its other controversial activities. especially its missile development programme and interference in other parts of the region, including Syria, Iraq, and Palestine. Israel and Saudi Arabia are in favour of scrapping the deal and support a tougher line against Iran. The EU, China, and Russia are supportive of the deal and fear that in case the deal is terminated, it would create more instability in the region, besides encouraging Iran to resume its controversial nuclear activities, thus, drastically cutting down the breakout time to develop a nuclear device.

Iranian nuclear controversy was stirred after the disclosure of two secret nuclear facilities in 2002 by a Paris-based Iranian dissident group called the National Council of Resistance of Iran (NCRI). These facilities included a Heavy Water research reactor in Arak and a uranium enrichment facility at Natanz.¹ Due to mounting international pressure,

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Iran agreed to address the issues related to its nuclear programme and started engaging diplomatically with the EU-3 states, including France, Germany, and the United Kingdom. As a result of these negotiations, Iran agreed to sign the Additional Protocol on Nuclear Safeguards in 2003, in addition to sending a proposal to the US government for a comprehensive dialogue on addressing Western concerns over its nuclear programme.² In 2004, Iran temporarily suspended its uranium enrichment activity after signing the Paris Agreement. However, the Bush administration did not show any interest in negotiating with Iran and remained unresponsive to the Iranian proposal. Later, in 2005, the newly elected Iranian government of former president Ahmedinejad adopted an entirely different approach towards its nuclear issue. Ahmedinejad refused to ratify the Additional Protocol, commenced construction work on the Arak Heavy Water nuclear reactor and also resumed the uranium enrichment process at Natanz.³ Owing to the sensitivity of the situation, in 2006, China, Russia, and the US joined the EU-3 to form P5+1 diplomatic team to negotiate on the controversial Iranian nuclear activities. In 2009, Iran disclosed another secret uranium enrichment facility at Fordo, near Qom, which was supposed to enrich uranium up to 20 percent, as permitted under the Nuclear Non-proliferation Treaty (NPT). Despite P5+1 warnings and threats of sanctions, former Iranian president Ahmedinejad refused to allow the International Atomic Energy Agency (IAEA) inspectors access to the Parchin Military Complex near Tehran. The complex was suspected to have been a testing ground for high explosives and hydrodynamic experiments considered critical for nuclear weapons knowhow. Thus, in response to the firm Iranian stance on its nuclear activities, the international community imposed sanctions on Iran, which adversely affected its economy and oil exports. On the other hand, several reports published in the Western media warned of an imminent Israeli strike on the Iranian nuclear facilities.⁴ In 2013, a moderate figure named Hassan Rouhani was elected as President of Iran, who adopted a conciliatory approach with P5+1 on the nuclear issue. Not only did Rouhani resume diplomatic process with P5+1 but he also secretly engaged in bilateral talks with the US in Oman.⁵ These negotiations subsequently resulted in the signing of an interim nuclear agreement or the Joint Plan of Action (JPOA) between Iran and P5+1 in November 2013. Finally, after intense rounds of parleys between Iran and P5+1, both parties successfully concluded the Joint Comprehensive Plan of Action (JCPOA) at Vienna on 15 July 2015.⁶

Controversies regarding the Iranian nuclear program

Iran always maintained that its nuclear programme was for peaceful purposes with no intentions to manufacture nuclear weapons. In 2007, the official Iranian estimates predicted that the state's energy needs would rise up to 70,000 megawatts by 2021, for which generation of power through alternative means would be necessary.⁷ However, the EU and the US had their suspicions. There was a perception in Brussels and Washington that due to the secretive nature of Iran's nuclear programme, Iran had made plans to develop nuclear weapons in future. This Western hypothesis of Iran pursuing a nuclear bomb was supported by the argument that Iran had built several hidden nuclear sites without notifying the IAEA with no justifiable reason. This, according to Western analysts, showed that Iran either had plans to manufacture nuclear warheads in future or an intention to possess the capability of developing a nuclear device at will. Iranian nuclear programme can be divided into two categories: one consisting of sites that are continuously under the safeguards of IAEA and the other consisting of facilities where suspicious nuclear-related activities were discovered. Some of the key Iranian nuclear sites are illustrated in the table below:

Location	Facility	Status
Anarak	Nuclear waste storage	Operating
Ardekan, Yazd	Uranium milling facility	Operating
Bonab	Nuclear research for agriculture	Operating
Bushehr	Nuclear power production plant	Operating
Gachin	Uranium mines	Operating
Isfahan	Uranium conversion technology centre (uranium oxide/UF6/metal)	Operating

Key Iranian nuclear sites

Radioactive waste storage facility	Operating	
Uranium ore mines	Operating	
Multiple facilities at Tehran Nuclear Research Centre	Mostly operating	
	Construction started	
Plant	in 2007 but work	
	has stopped	
Facilities viewed with suspicion in the West Arak 40 MW Heavy Water To be completed		
40 MW Heavy Water	To be completed	
reactor (to be re-designed	yet	
to 20 MW with least		
possibility of producing		
weapon grade Plutonium)		
Uranium enrichment	Operating (with	
facility (to be re-	1,044 centrifuges	
designated as nuclear,	for spinning without	
physics, technology	enrichment)	
centre)		
Uranium enrichment plant	Dismantled	
Uranium enrichment	Operating (with	
facility	6,104 centrifuges	
	and enrichment	
	allowed at 3.67	
	percent)	
High explosive testing site	Operating but	
suspected to be related to	modified under the	
nuclear weapons	JCPOA	
	Uranium ore mines Multiple facilities at Tehran Nuclear Research Centre 360 MW Nuclear Power Plant es viewed with suspicion in 40 MW Heavy Water reactor (to be re-designed to 20 MW with least possibility of producing weapon grade Plutonium) Uranium enrichment facility (to be re- designated as nuclear, physics, technology centre) Uranium enrichment plant Uranium enrichment plant Uranium enrichment plant High explosive testing site suspected to be related to	

Source: "Nuclear Iran: Nuclear Sites", *ISIS (The Institute for Science and International Security),* available at http://www.isisnucleariran.org/sites/alpha/.

Following is a detailed commentary on the controversial Iranian nuclear sites with suspected military dimensions listed above:⁸

Heavy Water and production plant at Arak

The existence of a Heavy Water facility near Arak was first revealed by the Institute for Science and International Security (ISIS) in December 2002. This 40 MW reactor moderated by Heavy Water was inaugurated by former Iranian president Ahmedinejad in July 2006, which was to become operational by 2014 but has yet to be completed. International community fears that the spent fuel from Arak reactor can be reprocessed to extract Plutonium, which could subsequently be used by Iran to manufacture nuclear weapons.

Fordo uranium enrichment facility

In September 2009, Iran acknowledged to have constructed a secret underground uranium enrichment facility at Fordo near Qom, which started the uranium enrichment process in January 2012. Later, Iran also notified the IAEA that it had plans to enrich uranium to 20 percent, which would be subsequently used as fuel for its Tehran Nuclear Research Reactor.

Natanz uranium enrichment plant

The Natanz fuel enrichment plant is Iran's largest gas centrifuge uranium enrichment facility and has the capacity to house 50,000 centrifuges. Natanz plant has two main portions: Pilot Fuel Enrichment Plant (PFEP) and the Fuel Enrichment Plant (FEP), which are in operation since February 2007. Despite repeated calls from the UN and P5+1, Iran refused to stop uranium enrichment activities at Natanz. In February 2010, Iran claimed to have successfully enriched uranium up to 19.75 percent, which can conveniently be enriched up to 90 percent for producing fissile material.

Parchin

In November 2011, the IAEA disclosed that since 2000 Iran had been conducting large scale explosives tests in a secretly built chamber at the Parchin military complex near Tehran. During the visits conducted by IAEA inspectors prior to 2005, no suspicious activity was observed in the buildings. Analysis of environmental samples also did not reveal the presence of nuclear materials at these locations, possibly because some portions of the site were kept hidden from the IAEA. Israeli and American sources have accused that Parchin site was used to conduct high explosives and hydrodynamic experiments for missiles and neutron initiator tests for nuclear weapons. In October 2014, the Parchin testing site was partially damaged as a result of a mysterious explosion. However, Iran has repeatedly reiterated that the site is only used for conventional explosive testing and in September 2015 the Director General of the IAEA head Mr. Yukiya Amano also visited the Parchin military site.

Isfahan uranium conversion facility

Iran began operating the uranium conversion facility (UCF) at Isfahan in 2006, which is used to convert yellowcake into uranium oxide, uranium hexafluoride gas, and uranium metal. The site is regularly visited by IAEA inspectors.

Key restrictions and relaxations under the JCPOA

The Iran nuclear deal, also known as the JCPOA, was signed on 14 July 2015 in Vienna after years of diplomacy between P5+1 states and Iran. It was a sequel to the Joint Plan of Action (JPOA) signed in November 2013 between the two parties. The deal is a 109-page long document and contains 5 annexes. It restricts Iran's nuclear activities for a specified time (10-25 years)—also known as the 'sunset clauses'—and offers incentives in return. The main aspects of the JCPOA are as follows:⁹

Uranium enrichment activities and stocks

Iran had previously claimed that it had enriched uranium up to 20 percent, a limit that was permitted under the NPT. After the finalisation of the nuclear deal, however, Iran was allowed to enrich uranium up to a maximum of 3.67 percent. Iran was also believed to be in possession of 10,000 kilograms of Low Enriched Uranium (LEU) stocks, which were gradually being reduced by 98 percent after the agreement. Therefore, according to the JCPOA, for the next 15 years, Iran would be permitted only to store a maximum 300 kg of LEU (enriched maximum up to 3.67 percent) either in the shape of uranium hexafluoride gas (UF6) or other equivalent chemical forms. In addition, all stocks of LEU enriched above 3.67 percent are being treated under four options. First, being downblended to the permissible limit. Second, being shipped out of the

country. Third, to be sold to purchase natural uranium as fuel for nuclear reactors. And fourth, to be fabricated into fuel plates for Tehran Nuclear Research Reactor.¹⁰ Therefore, additional stocks of LEU would either be placed under the custody of the IAEA or shipped out of the country. The Uranium Enrichment Plant at Fordo shall only be used for research and development related to enrichment activities and no enrichment would be carried out at the facility for the next 15 years. After 15 years, however, the limits and restrictions on Iran's enrichment and operational centrifuges would either have to be lifted or re-negotiated.

Limits on centrifuges

Prior to the deal, Iran had approximately 19,000 installed centrifuges, out of which 10,000 were operational. These centrifuges included the old IR-1, IR-2, as well as the advanced IR-4 types. As a consequence of the deal, only 6,104 centrifuges of IR-1 type are permitted to be used for enrichment and research purposes. A total of 5,060 centrifuges are allowed to be operated for uranium enrichment at Natanz, while remaining non-operational centrifuges are placed under the supervision of the IAEA. At Fordo, only 1,044 centrifuges of IR-1 type, in six cascades, can be operated and the facility was re-designated as nuclear physics and technology centre with no uranium enrichment activity permitted for the next 15 years. At Fordo research centre, only two cascades with 348 machines can be operated but without any uranium, while four cascades with 696 machines would remain idle.¹¹ For eight-and-a-half years Iran can carry out research on a single centrifuge of IR-4, IR-5, IR-6, and IR-8 types designs.¹²

Arak Heavy Water research reactor and spent fuel

The Arak reactor has been re-designed in line with IAEA guidelines to minimise the production of weapon grade plutonium. The power of re-designed reactor has been limited to 20 MW from 40 MW. No weapon grade plutonium is allowed to be produced in the reactor and all unspent fuel from the reactor has to be sent out of the country under IAEA supervision. Any excess Heavy Water, which is additional to Iran's needs, is made available for export in the international market under the deal. Iran has also been forbidden to either build new Heavy Water

reactors or store additional quantity of Heavy Water for the next 15 years.

Additional Protocol

Iran signed the Additional Protocol on Nuclear Safeguards without ratifying it, but after the deal, Iran has provisionally applied the Additional Protocol to the comprehensive safeguards agreement as agreed with the IAEA in the deal.¹³ The provisional application of the Additional Protocol, however, is only restricted to nuclear sites and does not mean anywhere and anytime types of inspections. Iran has also agreed to provide complete access to the IAEA for carrying out inspections of suspected and safeguarded sites related to nuclear fuel cycle on short notices of 24 hours. According to the deal, if an issue arises on previously undeclared or suspected nuclear site, the matter would be resolved through a joint commission within 24 days. The deal also allows the IAEA to gain access and inspect all aspects of nuclear fuel cycle and related sites, including mining and milling sites, for the next 25 years.¹⁴

Inspections and transparency

Under the deal, Iran is allowed to continue with peaceful nuclear research activities, which include nuclear research on radioisotopes and medical applications, nuclear research for instructional, agriculture, and scientific purpose, and nuclear research for power generation. The IAEA has round the clock access to Iran's notified nuclear sites and IAEA inspectors can inspect and prepare an inventory of Iran's nuclear sites from mining to waste disposal, without any interruption or hindrance.¹⁵ Iran has to allow IAEA inspections, collect samples, verifications of sites, etc. All sites related to nuclear fuel cycle including centrifuge production and research and development facilities would be monitored by the IAEA.

Fuel and technology procurements

A joint commission was established under the deal to review Iran's requests for obtaining and purchasing nuclear-related materials and technology for peaceful purposes through Nuclear Suppliers Group (NSG), as allowed under the NPT and agreed in the JCPOA. Therefore, EU+3 parties are supposed to support the purchases required by Iran for the construction of the redesigned Arak reactor, including transfer and supply of necessary materials, equipment, instruments, and control systems. However, Iran is not allowed to engage in reprocessing of spent fuel to extract plutonium for the next 15 years and all spent fuel would be sent out of the country under IAEA supervision.

Sanctions

Under the Obama administration, after the UN Security Council's endorsement of the JCPOA, all UN and related sanctions with regard to nuclear programme are to be gradually lifted. A key milestone in implementation of the JCPOA was achieved on 16 January 2016: the day the IAEA verified that Iran is fulfilling its commitments as per the deal and the EU lifted economic and financial sanctions in light of Annex V of the agreement.¹⁶ Other sanctions imposed by the UN and the USrelated to nuclear issue of Iran-were also lifted after the IAEA report of January 2016, in light of Annex II of JCPOA.¹⁷ However, the sanctions imposed by the UN and the US specific to missile programme, supporting terrorism in the region, and human rights abuses and violations remained intact. In case any violation of the JCPOA takes place, the P5+1 states reserve the right to re-impose all the sanctions lifted after the agreement under the 'snap back' mechanism.¹⁸ However, it is interesting to note that the deal does not specify a mechanism to punish a violator state other than Iran, except that the matter has to be referred to the UN where it can be vetoed by any of the permanent members of the UN Security Council.

Will President Trump quit the deal?

Iranian parliament, called Majlis, and Iranian spiritual leader Ayatollah Khamenei had extended support to the JCPOA, alongside the Democrats and former president Obama on the US side.¹⁹ But the more conservative Republicans and the current US President Donald Trump pose a serious risk to the deal.²⁰ The newly elected US President Donald Trump has threatened to quit the deal despite the fact that the JCPOA is considered a UN-backed international agreement, which was negotiated after an intense diplomacy of more than 15 years. It was also reported that President Trump only agreed to certify Iran's compliance after several senior officials in his administration convinced him to certify in the greater interest.²¹ However, keeping in mind the unpredictable nature of President Trump, it is becoming more likely that he may eventually quit the deal. The Trump administration has pointed out a few weaknesses in the JCPOA, which—along with several other factors could be used as a pretext to quit the deal in future:

- The sunset clauses (which restrict Iran's nuclear activities for specific time, i.e., 10-15 years) are problematic, as Iran would pursue nuclear activities after the limit lapses; even though Europeans have asserted that these activities can be renegotiated after the time limit ends.
- The Iran deal does not include restrictions on other Iranian controversial activities in the region. Most notably these activities include Iranian missile programme, its support to non-state actors like Hamas and Hezbollah, and Iranian meddling in regional conflicts, notably in Syria and Yemen.
- Another main reason could be the pressure from the state of Israel and Israeli lobbies functioning inside the US (like the American Israel Public Affairs Committee, the American Jewish Committee, the World Zionist Organisation, etc.). The Israeli businesses and lobbies are already maintaining strong relations with President Trump and his family to influence his decisionmaking process in favour of abandoning Iran nuclear deal.²²
- The JCPOA's 'snap back' provision, providing that any state party to the deal could give a thirty-day notice to exit, accusing the other of non-compliance, could be used by the US for the purpose. So if any state amongst the P5+1 accuses Iran of noncompliance, it could exit the deal and sanctions would be reimposed after thirty days. Although the US has not invoked the 'snap back' clause, it has said that the deal fails to restrain Iran's other controversial activities related to missile development and regional interference.

Various options for Iran in case the US quits the JCPOA

It remains debatable whether Iran actually has intentions of developing nuclear weapons, but even if Iran had such intentions, the

JCPOA ensures that Iran is unable to manufacture a bomb for at least a decade. Any Iranian violation of the terms and conditions of the deal would not remain concealed from the IAEA and the international community. Therefore, the comprehensive agreement has forced Iran to be more transparent regarding its nuclear programme, making it almost impossible for it to clandestinely manufacture a nuclear bomb for at least a decade. As of now, Iran has shown its commitment to stick to the JCPOA but in case the UN, EU, and the US reimpose sanctions and international firms wrap up their businesses from Iran, it would make the situation complicated and Iran might resort to some drastic steps. Under such circumstances, Iran might adopt any of the following courses of action:

Scrapping the Additional Protocol while remaining within the NPT

The head of the Atomic Energy Organisation of Iran (AEOI) Mr Ali Akbar Salehi warned in October 2017 that if the US terminated the JCPOA, Iran would stop the implementation of the Additional Protocol.²³ This means that Iran could restrict access to the IAEA inspectors, which it is otherwise obliged to provide to the IAEA without any hindrance under the Additional Protocol. More so, Iran might also stop sharing complete information regarding its nuclear fuel cycle and facilities as mandated by the Additional Protocol.²⁴ This could create an international crisis, as Iran's nuclear activities would be hidden from the worldview. Iran could use this opportunity to increase uranium enrichment up to a 20 percent level. Iran has already announced that it could resume production of highly enriched uranium in case the US guits the deal.²⁵ Consequently, the controversy with regard to Iran's nuclear programme would intensify, taking the situation back to a point where threat of a military action against Iran could appear plausible. The US and Israel might either consider initiating military action against Iran or could decide to use diplomatic pressure and economic sanctions to pressurise Iran to stop enrichment activities. Diplomacy and economic options might not work, as Iran would remain undeterred by claiming a moral high ground and maintaining that under the NPT such enrichment is permitted. Moreover, the situation might be different after the unilateral withdrawal of the US from the JCPOA, as Russia and China, in addition to a few European states, might consider the US at fault rather than Iran and,

thus, sanctions might not be as effective as before. So, in frustration, the Islamic Military Alliance to Fight Terrorism (IMAFT), created recently by the Gulf Cooperation Council (GCC) states, remains a plausible option for the US to strike Iran.²⁶ This war could be triggered in case of missile strikes from Yemen on Saudi Royal Palaces or Holy Mosques, either fired by Houthis or managed through a false flag operation to win support of the Sunni states for an invasion of Iran. Pakistan will have to balance the odds between Shiite and Sunni rift, showing neutrality and opposing another military campaign in the Middle East, which could have devastating consequences for the region, besides exacerbating the sectarian tensions within Pakistan.

Maintaining the status quo with support from Russia and China

For Iran, another possibility could be of maintaining the status quo on the deal with the help of Russia and China, as the EU is likely to quit the deal under US pressure. The European firms would be more interested in doing business with the US, where they are likely to get more dividends, rather than Iran. Consequently, Iran's reliance on other regional states like India, Pakistan, Qatar, etc. would increase. Iran might also like to become part of the China-Pakistan Economic Corridor (CPEC), besides resuscitating the Iran-Pakistan-India gas pipeline. Closer Pak-Iran relationship might, however, strain the relationship between Pakistan and Saudi Arabia. Therefore, it would be an extremely tight walk for Pakistan to balance the equation between Iran and Saudi Arabia. Iran and Saudi Arabia would continue using proxies for their own benefit in the region, especially in Syria and Yemen, which will keep the situation in the region unstable and tense. In the longer run, Pakistan would have to play a mediating role between Saudi Arabia and Iran for the sake of regional stability. Such a role could be facilitated with the help of other regional powers, especially Russia and China. A normal relationship between Iran and Saudi Arabia would also help in bringing sectarian harmony inside Pakistan.

Abandoning the NPT in pursuit of nuclear weapons

Article X(1) of the NPT gives the right to each party to withdraw from the treaty, "if it decides that extraordinary events, related to the

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subject matter of this Treaty, have jeopardised the supreme interests of its country."27 Thus, citing the US violation of the JCPOA and reimposition of sanctions, Iran could take the radical step of quitting the NPT and reserving the option to initiate an overt nuclear weapons programme. Although this appears very unlikely, it is still conceivable, especially in the backdrop of the North Korean withdrawal from the NPT in 2003. Nevertheless, Iran might only do this once it is sure that it is only days behind from assembling or manufacturing a nuclear device. This would certainly result in the outbreak of another major war in the Middle East and the US and Israel would likely take a joint military action, possibly involving aerial and missile attacks on Iranian nuclear installations. Israel has a declared policy of 'never again', which means that Israel would never allow emergence of a nuclear state in the Middle East.²⁸ This strike might or might not have the UN backing and might even involve an implicit Saudi role as well. This could allow Iran to retaliate against Saudi Arabia, Israel, or even US targets in the Middle East. However, it would be a worst case scenario if the US manages to use the IMAFT to wage a war against Iran. Pakistan will have to guit the coalition under such circumstances. This war would have devastating consequences for the region and Pakistan, which will have to align with the policy adopted by regional powers like China and Russia under the ambit of UN resolutions. Pakistan will also have to consider policy options amid the possibility of being the next target for being the only Islamic state posing a potential danger to the West after elimination of the Iranian threat.

Prospects of regime change in Iran

The Trump administration is trying for a regime change in Iran. The US has already made plans for it. Although during the 2009 public uprising in Iran, former US president Barack Obama had instructed the CIA to stand down but this may not be the case with President Trump.²⁹ Any such uprising could have devastating consequences and a possible civil war in Iran, likes of which have already been witnessed in Syria. The continued war and stalemate in the Levant due to external actors' intervention has resulted in a humanitarian crisis. This crisis has resulted in deaths of hundreds of thousands of civilians and at the same time displacing millions of others from their homes. According to estimates, more than 4.2 million Syrian refugees have sought refuge in Turkey, Jordan, Lebanon, Egypt, and Iraq while another 680,000 have fled to Europe.³⁰ The outbreak of a civil war in Iran would further deepen the refugee crisis and seriously affect Iran's neighbouring countries in the region and beyond, including Pakistan and Turkey. The fleeing refugees to neighbouring states and Europe would seriously affect their economies, demography, and law and order situation, besides fuelling a fresh wave of terrorism.

Iran's nuclear breakout capability and nuclear arms race in the region

There are varying estimates regarding Iran's nuclear breakout capability. Breakout capability implies Iran's capability to produce enough HEU or Plutonium to manufacture at least one nuclear device from the day Iran decides to develop the bomb.³¹ Iran has multiple types of centrifuges, including IR-1, IR-2m, IR-4, IR-5, IR-6, IR-6s, IR-7, and IR-8 types.³² As per the deal, Iran cannot start mass production of IR-6 and IR-8 types of centrifuges for 10 years from the signing of the JCPOA. In addition, Iran can only install one centrifuge of IR-6 and IR-8 for research purposes for these 10 years. IR-6 and IR-8 centrifuges have a relatively complex design and if Tehran moves forward with enhancing its uranium enrichment capacity for mass-production through these advanced centrifuges, its presumed breakout time towards manufacturing nuclear weapons could significantly reduce. According to the spokesperson of the AEOI, the enrichment capacity of IR-8 type centrifuges is 20 times more than the IR-1 type, which means that Iran's capacity to produce HEU would increase 20 times if it plans to use IR-8 type centrifuges for enrichment at a mass scale.³³ Former CIA deputy director Michael Morell said, "If you are going to have a nuclear weapons program, 5000 [centrifuges] is pretty much the number you need."34 Another nuclear expert, Daryl Kimball of the Arms Control Association said, "With that, it would take 12 months for Iran to produce enough material for one bomb."³⁵ In 2015, the Belfer Centre estimated that with 9,000 operational centrifuges Iran's breakout time would be approximately three months and with 6,500 operational centrifuges this time could double to six months.³⁶ But this would only be possible if Iran openly enriches uranium without concealing its activities and facilities. Concealing and operating

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centrifuges would be an extremely difficult task, resulting in significantly increasing the breakout time by a few years. Nevertheless, in case the JCPOA falters, Iran's breakout time to develop a nuclear bomb would not be in years but months and it would be able to conceal some of the activities if it abandons the Additional Protocol. Iran's pursuit of nuclear weapons could ignite a nuclear arms race in the region and beyond. Therefore, other states in the region perceived to be in strategic competition with Iran, especially Egypt, Turkey, Saudi Arabia, and the UAE, could possibly look for a nuclear weapon option, precipitating a conventional and a nuclear arms race. The UAE already has plans to construct four nuclear power plants by 2020, first of which is likely to become operational by end of 2017. Saudi Arabia also plans to construct 16 nuclear power reactors by 2031. Saudis have already signed nuclear deals with Japan and South Korea for constructing nuclear power plants and that expertise can become extremely useful for a weapons programme if Iran moves towards the path of developing nuclear weapons.

Conclusion

It is still not clear whether President Trump would actually abandon the JCPOA or not. However, Pakistan must make contingency plans if that happens. Pakistan will have to wait and see how the situation further shapes, while strongly supporting the JCPOA at the same time. Moreover, Pakistan should also engage in consultations with all the important states in the region, especially China, Russia, Turkey, as well as the Shanghai Cooperation Organisation (SCO) and GCC states, to formulate a comprehensive strategy in case the US abandons the deal. A mediating role of Pakistan to bridge the gap between Saudi Arabia and Iran may also help in improving the overall regional situation. Pakistan will have to convince Saudi Arabia that a new war in the region would not only lead to further instability in the region but could also have dangerous outcomes for the Saudi regime. Pakistan may also try convincing important regional actors like China, Russia, and Turkey to find a regional solution in case the deal is abandoned. After the deal ends, the threat of an Israeli strike on Iran would become likely, which would have serious implications for the whole region and even beyond.

Notes and references

- "Remarks by Alireza Jafarzadeh on New Information on Top Secret Projects of the Iranian Regime's Nuclear Program," *Iran Watch.Org, Private Viewpoints*, 14 August 2002, http://www.iranwatch.org/ library/ncri-new-information-top-secret-nuclear-projects-8-14-02.
- ² Jack Caravelli, Nuclear Insecurity: Understanding the Threat from Rogue Nations and Terrorists, (Connecticut: Praeger Security International, 2008), pp.141-142.
- ³ "Timeline of Iran's controversial nuclear program," *CNN*, 19 March 2012, http://edition.cnn.com/2012/03/06/world/meast/iran-timeline/.
- ⁴ Numerous studies exist on this aspect including Dalia Dassa Kaye, Alireza Nader and Parisa Roshan, *Israel and Iran: A Dangerous Rivalry*, (California: RAND Corporation, 2011), pp.36-43.
- ⁵ Jay Solomon, "Secret Dealings with Iran led to Nuclear Talks," *The Wall Street Journal*, 28 June 2015, http://www.wsj.com/articles/iran-wish-list-led-to-u-s-talks-1435537004.
- ⁶ Laura Rozen, "Inside the Secret U.S.-Iran Diplomacy that Sealed the Nuke Deal," U.S. News, 12 August 2015, http://www.usnews.com/ news/articles/2015/08/12/inside-the-secret-us-iran-diplomacy-thatsealed-nuke-deal.
- ⁷ Muhammad Sahimi, "Iran's Nuclear Energy Program. Part IV: Economic Analysis of the Program," *Payvand Iran News*, 4 December 2007, http://www.payvand.com/news/04/dec/1056.html.
- ⁸ "Middle East Iran's key nuclear sites," *BBC News,* 14 July 2015, http://www.bbc.com/news/world-middle-east-11927720.
- 9 "Kev Excerpts of the Joint Comprehensive Plan of Action (JCPOA)." The White House: Office of the Press Secretary, July 14, 2015, https://www.whitehouse.gov/the-press-office/2015/07/14/keyexcerpts-joint-comprehensive-plan-action-jcpoa. See also: "Full text Iran nuclear deal," Washington Post, undated, of the http://apps.washingtonpost.com/g/ documents/world/full-text-of-theiran-nuclear-deal/1651/. See also: Ben Piven, "Key Points of the Iran Deal," Nuclear Aljazeera America, 14 July 2015. http://america.aljazeera.com/articles/2015/7/14/key-points-irannuclear-deal.html.
- ¹⁰ "Joint Comprehensive Plan of Action: JCPOA Annex 1 Nuclear Related Commitments," *US Department of State,* undated, pp.15-16, https://www.state.gov/documents/organization/245318.pdf.
- ¹¹ Ibid, p.11, https://www.state.gov/documents/organization/245318. pdf.

- ¹² World Nuclear News (wnn), "Iran tests new-generation centrifuge under JCPOA," 31 January 2017, http://www.world-nuclearnews.org/Articles/Iran-tests-new-generation-centrifuge-under-JCPOA.
- ¹³ *The Center for Arms Control and Non-Proliferation*, "Fact Sheet: Iran and the Additional Protocol," 14 July 2015, https://armscontrolcenter. org/factsheet-iran-and-the-additional-protocol/.
- ¹⁴ Arms Control Association, "Section 3: Understanding the JCPOA", 10 August 2015, https://www.armscontrol.org/reports/Solving-the-Iranian-Nuclear-Puzzle-The-Joint-Comprehensive-Plan-of-Action/2015/08/Section-3-Understanding-the-JCPOA.
- ¹⁵ Ibid.
- ¹⁶ European Council Council of the European Union, "Iran: Council lifts all nuclear-related economic and financial EU sanctions," Press Release 12/16, 16 January 2016, http://www.consilium.europa.eu/ en/press/press-releases/ 2016/01/16/iran-council-lifts-all-nuclearrelated-eu-sanctions/.
- ¹⁷ "Joint Comprehensive Plan of Action: JCPOA Annex 2 Sanctions Related Commitments," *US Department of State,* undated, https://www.state.gov/ documents/organization/245320.pdf.
- ¹⁸ Ankit Panda, "How the Iran Deal's 'Snap Back' Mechanism Will Keep Tehran Compliant," *The Diplomat,* 15 July 2015, https://thediplomat. com/2015/07/how-the-iran-deals-snap-back-mechanism-will-keeptehran-compliant/.
- ¹⁹ Thomas Erdbrink, "Ayatollah Khamenei, Backing Iran Negotiators, Endorses Nuclear Deal," *The New York Times,* https://www.nytimes.com/2015/ 07/19/world/middleeast/ayatollah-alikhamenei-of-iran-backs-negotiators-and-doesnt-criticize-nucleardeal.html.
- ²⁰ Rick Gladstone and Thomas Erdbrink, "Political Tensions Rise in Iran as Hard-Liners Chafe at Deal," *The New York Times*, 15 November 2015, A 4.
- ²¹ Mark Landler and David E. Sanger, "Trump Disavows Nuclear Deal, but Doesn't Scrap It," *The New York Times*, 13 October 2017, https://www.nytimes.com/2017/10/13/us/politics/trump-iran-nucleardeal. html.
- ²² Ramzy Baroud, "The uneven alliance: How America became pro-Israel," *AI Jazeera*, 9 March 2017, https://www.aljazeera.com/ indepth/features/2017/03/uneven-alliance-america-pro-israel-170308064459862.html. See also: Jesse Drucker, "Bribe Cases, a Jared Kushner Partner and Potential Conflicts," *The New York*

Times, April 26, 2017, https://www.nytimes.com/2017/04/26/us/politics/jared-kushner-beny-steinmetz.html. Also: Ben Geier, "Here's Why AIPAC and the Israel Lobby Will Be Critical to 2016 Elections," *Fortune*, 21 March 2016, http://fortune.com/2016/03/21/aipac-israel-lobby-election-2016/.

- ²³ Mehr News Agency, "AEOI Head: Iran to stop Additional Protocol if US kills JCPOA," 15 October 2017, https://en.mehrnews.com/ news/128629/Iran-to-stop-Additional-Protocol-if-US-kills-JCPOA,
- ²⁴ The Center for Arms Control and Non-Proliferation, "Fact Sheet: Iran and the Additional Protocol," 14 July 2015, https://armscontrolcenter. org/factsheet-iran-and-the-additional-protocol/.
- ²⁵ U.S. News, "Iran Says Can Produce Highly Enriched Uranium in Days if U.S. Quits Deal," 22 August 2017, https://www.usnews.com/ news/top-news/articles/2017-08-22/iran-says-can-produce-highlyenriched-uranium-in-days-if-us-quits-deal.
- ²⁶ Naveed Ahmad, "Pakistan and the Saudi-led anti-terror coalition: Regional implications for the appointment of Gen. Raheel," *Aljazeera Centre for Studies*, 17 May 2017, http://studies.aljazeera.net/ en/reports/2017/05/ pakistan-saudi-led-anti-terror-coalitionregionalimplications-appointment-gen-raheel-170517100721721.html.
- ²⁷ Daniel H. Joyner, "What if Iran Withdraws from the Nuclear Nonproliferation Treaty? Part I: Can They Do That?," *European School of International Law*, Vol 1, Issue 5, 13 December 2012, http://esil-sedi.eu/wp-content/uploads/2012/12/ESIL-Reflections-Joyner.pdf.
- ²⁸ Shams uz Zaman, "Evolution of Israel's Nuclear Programme: Implications in Post-Iran Nuclear Deal Era," *Regional Studies*, Vol XXXIV, No. Summer 2016, p 86.
- ²⁹ Eli Lake, "Why Obama let Iran's 'Green Movement' fail," *The Japan Times*, 28 August 2016, https://www.japantimes.co.jp/opinion/2016/08/29/ commentary/world-commentary/obama-let-irans-green-movement-fail/#.W37tCLp9jIU.
- ³⁰ "Syria Regional Refugee Response," *UNHCR,* updated 17 November 2015, http://data.unhcr.org/syrianrefugees/regional.php.
- ³¹ Olli Heinonen, "Iran's Nuclear Breakout Time: A Fact Sheet," *Belfer Center Harvard Kennedy School*, 28 March 2015, https://www.belfercenter.org/publication/irans-nuclear-breakout-time-fact-sheet.
- ³² *Tehran Times,* "Iran starts testing IR-8 centrifuges with UF-6," January 28, 2017, http://www.tehrantimes.com/news/410533/Iran-starts-testing-IR-8-centrifuges-with-UF6.

- ³³ Press TV, "Iran's IR-8 centrifuge to raise enrichment capacity 20fold: AEOI," 14 February 2017, https://www.presstv.com/Detail/ 2017/02/14/510533/Iran-centrifuge-IR8-nuclear-AEOI-kamalvandi.
- ³⁴ Jon Greenberg, "The odd reality of Iran's centrifuges: Enough for a bomb, not power," *Pundit Fact,* 25 February 2015, https://www.politifact.com/punditfact/statements/2015/feb/25/michael -morell/odd-reality-irans-centrifuges-enough-bomb-not-powe/.
- ³⁵ Ibid.
- ³⁶ Olli Heinonen, "Iran's Nuclear Breakout Time," *Belfer Center*, March 2015.