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## The Iran Nuclear Deal: Distrust and Verify

An analysis of the 2015 Joint Comprehensive Plan of Action (JCPOA) and its potential implications for global and regional security

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# The Iran Nuclear Deal: Distrust and Verify



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## Executive Summary

The Joint Comprehensive Plan of Action (JCPOA) on the Iranian nuclear programme, concluded in Vienna on 14 July 2015, is the result of intensive negotiations between Tehran and the group of countries known as the P5+1. Three major developments enabled breakthroughs in the negotiations. The first was the election of Barack Obama as US president in November 2008, allowing direct US negotiations with Iran. The second was a shift in P5+1 policy from insistence on the cessation of uranium enrichment by Iran combined with sanctions, to one of containing Iran's nuclear programme and using the lifting of sanctions as leverage. The third major development was the 2013 election of Hassan Rouhani as president of Iran on a platform of sanctions relief and economic recovery. A mutually acceptable agreement was achieved through dialogue and active diplomacy rather than threats (including of a military strike), isolation and unilateral demands. Both sides achieved their goals: for the P5+1, that of preventing Iran from manufacturing nuclear weapons, and for Iran, that of preserving its acquired nuclear know-how and having the sanctions lifted. The Vienna agreement put into place an unprecedented verification system to ensure that Iran will not enrich uranium above a low level, that the volume of its stockpiles will remain capped, that its capacity to produce enriched uranium will be limited and that it will not produce weapons-grade plutonium. The IAEA will monitor the whole Iranian fuel cycle, from mining to spent fuel (which Iran will not be able to reprocess). The lack of mutual trust between Iran and the P5+1 explains this extensive verification system, which follows a "distrust-AND-verify" approach. Iran also had to work with the IAEA to clarify pending questions on the past possible military dimensions of its programme. The monitoring mechanism put in place will ensure joint supervision of the implementation of the commitments (including a Joint Commission and regular ministerial meetings). The JCPOA is a model of a cooperative security approach.

How this agreement will affect the reintegration of Iran into the international community remains to be seen. Expectations of a dramatic normalization of relations with the US seem premature, especially as the anti-US and anti-Israel rhetoric of the conservative circles in Iran continues. But the lifting of sanctions will allow a partial resumption of international trade with Iran, including in the oil sector, and is likely to influence exchanges and opening. In the Middle East, one can only hope that including Iran – a key player – in the international talks on the Syrian conflict will have a stabilizing effect. In the longer term the JCPOA could facilitate the renewal of discussions on a zone free of weapons of mass destruction in the Middle East, or even become a model for managing nuclear proliferation crises in regional environments characterized by mistrust and a high degree of militarization.

## 1. Introduction

Iran and the group of states known as the E3/EU+3 or the P5+1 agreed to the so-called “Iran Deal” – officially called the Joint Comprehensive Plan of Action (JCPOA) – on the Iranian nuclear programme in Vienna on 14 July 2015.<sup>1</sup>

### 1.1 A major achievement

This agreement is the result of intensive negotiations, ending a process initiated in 2003 by three European countries – France, Germany and the United Kingdom (UK) – later joined by the European Union (EU) High Representative for Foreign Affairs and Security Policy (E3/EU), and enlarged in 2006 to include China, Russia and the United States (US) (from then on, the E3/EU+3 or P5+1). The talks led to the first milestone in Geneva in November 2013 with the interim agreement that suspended parts of the Iranian nuclear programme for the duration of the talks. The April 2015 framework agreement adopted in Lausanne followed this and served as the basis for the final comprehensive agreement, the JCPOA.

Three major developments enabled breakthroughs in the negotiations. The first was the election of Barack Obama to the US presidency in November 2008, allowing more direct US negotiations with Iran. The second was a shift in the E3/EU+3’s policy on Iran: initially, they insisted on the cessation of uranium enrichment by Iran combined with a significant and elaborate sanctions regime.<sup>2</sup> But in 2012 the policy shifted to containing Iran’s nuclear programme and using sanctions as leverage in the negotiations. The third major development was the 2013 election of Hassan Rouhani as president of Iran on a platform of sanctions relief and economic recovery. It then became clear that a mutually acceptable agreement could only be achieved through dialogue and active diplomacy rather than threats (including of a military strike), isolation, and unilateral demands. Naturally, both sides had their bottom lines: the E3/EU+3 sought to verifiably prevent Iran from manufacturing nuclear weapons, while Iran sought to preserve the nuclear technology and know-how it had acquired, including what it claimed was its “right” to enrich uranium, and to ensure the total lifting of sanctions. Looking at the result, it is clear that both sides have broadly fulfilled their objectives.

Among the unprecedented aspects of the Vienna agreement is the verification system put in place to ensure that Iran will abide by its commitments. The International Atomic Energy Agency (IAEA) will certify that Iran does not produce highly enriched uranium (HEU) or maintain stockpiles of enriched uranium in volumes sufficient for weapons. In addition to the standard IAEA inspections, negotiated access to military facilities deemed to be suspicious will be possible. Iran must also convert its heavy-water reactor into a research facility that does not produce weapons-grade plutonium. The IAEA will thus monitor the whole Iranian fuel cycle, from mining to spent fuel (which Iran will not be able to reprocess).

The main reason why the verification provisions are so detailed is the lack of mutual trust between Iran and the P5+1 countries. Iran had a history of cheating, dissimulating, renegeing on past agreements and dragging its feet. But it was also the victim of breaches of past agreements, including the denial of fuel supplies or technology to its peaceful nuclear programme.<sup>3</sup> To the Reagan-style Cold War motto “trust-but-verify” succeeded a new, harsh “distrust-AND-verify” approach.

The possible military dimensions (PMDs) of Iran’s programme did not feature explicitly in the final agreement, but were covered by a separate joint document with the IAEA under which Iran would answer all the Agency’s outstanding questions. But the negotiators did not make such revelations about the past a breaking point in the talks and rather focused on the future. In the end the monitoring mechanism that was put into place will ensure joint supervision of the implementation of the commitments made in the agreement (including a Joint Commission and ministerial meetings every two years at least). The JCPOA is therefore a model of a cooperative security approach.

### **1.2 A potential starting point**

The endless hours spent in negotiations, especially by the top US and Iranian negotiators, John Kerry and Zavad Zarif, respectively, offered a unique opportunity to discuss issues other than uranium enrichment levels or numbers of centrifuges, but these issues may not have been fully explored. Such contacts exclude the possibility of a dramatic normalization of relations similar to that between the US and Cuba. There are too many areas of disagreement between Washington and Tehran to allow for rapid normalization, and their history of mutual hostility is still too recent. But there is no reason why the US cannot try to coax Iran into being a more cooperative actor in the Middle East following the nuclear agreement.

In the short term Iran will likely not risk jeopardizing the Vienna agreement by cheating on its implementation. In fact, to date it has done a remarkable job of implementing its end of the bargain in a timely way. However, whether the agreement will also lead to a change in its aggressive behaviour in the region (in Syria, Iraq and Yemen) remains to be seen. Today, common interests exist between, on the one hand, Iran, supported by Russia, and, on the other hand, the enemies of the so-called Islamic State (IS). Saudi Arabia continues to be wary of Iran, while Israel will continue to oppose the Vienna agreement because it may shift attention to its own nuclear capabilities. Ultimately, realignments and tacit, realist collaboration against common enemies may materialize as the strategic landscape in the Middle East continues to change.

The gradual lifting of sanctions and reintegration of Iran into the international community will contribute to that country's economic recovery, following the likely reinvestment of some of its unfrozen assets domestically and the potential generation of revenues from new oil and gas exports, although the falling price of oil will temper these benefits. Despite opportunities for greater international dialogue and reintegration, Iran's public rhetoric will remain hostile (especially to Israel and occasionally the US) to placate powerful groups such as the Revolutionary Guards or the anti-Rouhani clerics. But the Iranian people will increase their calls for more openness, easier travel and greater freedom of expression. How the regime will respond to these calls will determine the country's future.

Finally, how will this agreement influence other nuclear proliferation issues? It is difficult to speculate or generalize in this regard. One reason why Israel was concerned about the Vienna agreement was that, although the JCPOA prevented Iran from becoming a nuclear-armed state, pressure on Israeli nuclear capabilities would likely increase. This helps to explain why Israel torpedoed the May 2015 Non-Proliferation Treaty (NPT)<sup>4</sup> Review Conference, which almost agreed to convene a conference on a zone free of weapons of mass destruction (WMD) in the Middle East. Of course, other short-term priorities are at play in the Middle East and the prospects of agreeing on such a WMD-free zone are fraught with significant obstacles. But ultimately the Vienna agreement could become a model for managing nuclear proliferation crises in regional environments characterized by mistrust and a high degree of militarization.

## **2. A long and complex negotiation process**

### **2.1 The origins of the Iranian nuclear programme**

In the early stages of the Cold War Iran was a critical US ally in the Middle East to counter Soviet influence. In 1957 the two countries announced an agreement for "cooperation in research in the peaceful uses of atomic energy". In 1959 the Tehran Research Reactor (TRR) was established and the US agreed to supply it with small quantities of HEU, which was done in 1967. In 1968 Iran signed the NPT and in 1973 concluded its Safeguards Agreement with the IAEA. During the 1970s, prompted by the conflicts in the Middle East and the oil crisis that occurred at the time, the shah of Iran decided to develop nuclear energy for power generation. He turned to Western countries, in particular France, to build two reactors in Darkhovin, and Germany, for another two reactors at Bushehr, in both cases with a European commitment to supply the necessary fuel. Iran also bought a 10 per cent share in the European EURODIF consortium, which was to supply Tehran with low-enriched uranium (LEU).<sup>5</sup>

In 1974 India exploded its first nuclear device, and the US intelligence community began to suspect that, once Iran had fully developed its nuclear scientific and industrial base, it would develop its own nuclear weapons.<sup>6</sup> This did not stop the US President at the time, Gerald Ford, from offering Iran in 1976 the opportunity to acquire a reprocessing facility to produce plutonium, which could have allowed Tehran to control the full nuclear fuel cycle.<sup>7</sup> The more cautious US administration of President Jimmy Carter (1977-1981) included stringent non-proliferation clauses in the agreement that was eventually concluded in the summer of 1978.<sup>8</sup> But Iran's Islamic Revolution of February 1979 was a turning point: it led to the cancellation of the deal, and the contracts with France and Germany.

With the establishment of the Islamic Republic the West decided to stop any form of cooperation and supply of any nuclear fuel or equipment. The US pressured the IAEA and China to prevent Iran from producing the uranium hexafluoride (UF<sub>6</sub>) that was used in uranium enrichment.<sup>9</sup> The construction of the Darkhovin and Bushehr plants stopped, and Iraq bombed the latter during the Iran-Iraq war of 1980-1988. In 1984 the US imposed national sanctions on Iran, which was put on the list of state sponsors of terrorism. In 1987-1988 the US also tried to convince Argentina to refrain from supplying Tehran with LEU.<sup>10</sup> Nevertheless, Argentina agreed to reconvert the core of the TRR for the use of LEU and supplied the fuel, together with enrichment technology.<sup>11</sup>

Meanwhile, Iran also turned to the rogue network of A.Q. Khan, the Pakistani nuclear scientist, to acquire the technology to construct P-1 centrifuges for enriching uranium.<sup>12</sup> During this period US sanctions were strengthened with the 1992 Iraq-Iran Arms Proliferation Act and the 1996 Iran-Libya Sanctions Act.<sup>13</sup>

In August 2002 another key turning point occurred with the press conference of the National Council of Resistance of Iran, an exiled Iranian opposition group, which published evidence that Iran had secretly constructed two nuclear facilities: in Natanz, for uranium enrichment, and in Arak, to produce heavy water that could be used for making weapons-grade plutonium.

On 6 June 2003 the IAEA's director general, Mohamed ElBaradei, reported to the Board of Governors that "Iran had failed to meet its obligations under its Safeguards Agreement",<sup>14</sup> but Iran insisted that its programme was purely for peaceful purposes. Because of the lack of confidence in the truth of Iranian statements, on 12 September 2003 the Board of Governors called on Iran "to suspend all further uranium enrichment related activities and ... any reprocessing activities". Iran was requested to take the necessary measures "to resolve all outstanding issues involving nuclear materials and nuclear activities", as well as to sign and start implementing the IAEA Additional Protocol providing for possible inspections of undeclared activities or facilities.

## **2.2 Early negotiation attempts (2003-2006)**

In June 2003 the foreign ministers of three EU states – Dominique de Villepin (France), Joschka Fischer (Germany) and Jack Straw (UK), later known as the E3 – decided to engage with the Iranian authorities. They wrote to their Iranian counterpart, Kamal Kharrazi, in August 2003 offering technical cooperation in exchange for Iran’s agreement to suspend uranium enrichment and implement the IAEA Additional Protocol.<sup>15</sup> This initiative took place against the backdrop of the US-led invasion of Iraq on the pretext of Baghdad’s alleged possession of WMD, which resulted in some European countries fearing that Iran could be the target of another US military operation.<sup>16</sup>

### **2.2.1 The 2003 Tehran Statement**

After the September 2003 Board of Governors’ appeal to Iran and threat of referral to the UN Security Council (UNSC), Iran complied with the IAEA’s requirements. Iran’s foreign minister invited the E3 ministers to Tehran to discuss the nuclear programme in October 2003. Iran’s main nuclear negotiator at the time, Hassan Rouhani, secretary of the Supreme National Security Council, announced that Tehran would suspend the operation of the Natanz enrichment facility and the construction of the Arak heavy-water reactor, and sign the Additional Protocol. In return the E3 promised technical cooperation with a peaceful Iranian nuclear programme. This understanding was enshrined in the Tehran Statement of 21 October 2003.<sup>17</sup> But there was ambiguity about the duration of the enrichment suspension: in the E3’s eyes the suspension would become permanent, whereas for Iran it was only a temporary confidence-building measure to facilitate the negotiation of a long-term agreement.<sup>18</sup>

In his 10 November 2003 report to the IAEA the director general, Mohamed ElBaradei, noted that “To date, there is no evidence that the previously undeclared nuclear material and activities . . . were related to a nuclear weapons programme. However, given Iran’s past pattern of concealment, it will take some time before the Agency is able to conclude that Iran’s nuclear programme is exclusively for peaceful purposes.”

Meanwhile, under the Additional Protocol signed by Iran on 18 December 2004, the IAEA stepped up its inspections of Iranian nuclear facilities. The Agency discovered activities that should have been declared, in particular related to new-generation P-2 centrifuges. This is why on 18 June 2004 the IAEA Board of Governors adopted another strongly worded resolution regretting “that [Iran’s] commitments have not been comprehensively implemented”.

### 2.2.2 The November 2004 Paris Agreement

As pressure mounted again for Iran's referral to the UNSC, the E3, supported by Javier Solana, the EU High Representative for Common Foreign and Security Policy (making the E3 from then on the E3/EU), undertook another round of negotiations with Iran in Paris in November 2004. From the start Iranian negotiators wanted to specify that any suspension of uranium enrichment would not amount to a permanent cessation, but only to a temporary halt during the negotiations.

The clarification that Iran sought was included in the agreement signed in Paris on 15 November 2004: Iran agreed to suspend "all enrichment-related and reprocessing activities" and that this "suspension will be sustained while negotiations proceed on a mutually acceptable agreement on long-term arrangements".<sup>19</sup> The E3/EU conceded that this was "a voluntary confidence-building measure and not a legal obligation". Whereas Iran interpreted the accord as recognition of its "inalienable right" to enrich uranium, the E3/EU expected that a long-term arrangement would offer the necessary "objective guarantees that Iran's nuclear programme is exclusively for peaceful purposes".<sup>20</sup>

The IAEA Board of Governors did not refer Iran to the UNSC; however, the two sides' different approaches continued to affect their relations. In the first half of 2005 Iran offered several proposals beyond the scope of its nuclear programme, including cooperation on the fight against terrorism and regional conflicts such as those in Iraq and Afghanistan. The nuclear "objective guarantees" included an Iranian commitment not to pursue WMD, continuous on-site inspections at key facilities, a limit to the expansion of Iran's enrichment programme and a policy declaration of no reprocessing.<sup>21</sup> In exchange, Iran requested, among other things, that the EU remove restrictions on transfers of conventional arms and dual-use goods to Iran, recognize the latter as a major source of energy for Europe, and guarantee its access to advanced nuclear technology.<sup>22</sup>

For their part, the E3/EU formally presented a proposal for a "Framework for a Long-term Agreement" in August 2005, offering Iran, among other things, assured supplies of LEU for light-water reactors, a nuclear fuel reserve in a third country and recognition of Iran as a long-term source of fossil fuel energy. In return, Iran was requested in particular not to pursue fuel-cycle technologies and not to withdraw from the NPT, and to return spent nuclear fuel to supplier countries.

In June 2005 Mahmoud Ahmadinejad succeeded the moderate Mohammad Khatami as president of Iran. The newly appointed Iranian negotiators rejected the European proposals, arguing that they did not respect Iran's "inalienable right" to enrich uranium. Iran resumed the production of UF<sub>6</sub> at the Isfahan facility. As a consequence the E3/EU halted the negotiations, and on 24 September 2005 the IAEA Board of Governors declared

Iran in non-compliance with its Safeguards Agreement. This opened the door to the country's referral to the UNSC.

### **2.3 Involvement of the UN Security Council and sanctions against Iran (2006-2008)**

On 4 February 2006 the IAEA Board of Governors requested the director general to refer all reports and resolutions relating to the implementation of safeguards in Iran to the UNSC. It “deemed it necessary for Iran to: re-establish full and sustained suspension of all enrichment-related and reprocessing activities”, reconsider the construction of the Arak heavy-water reactor, ratify the Additional Protocol, and fully cooperate with the Agency. Iran reacted by announcing that it would cease “unilateral” implementation of the Additional Protocol and other non-legally binding confidence-building and verification measures. As a result, on 29 March 2006 the UNSC issued a presidential statement calling on Iran to implement the measures required by the IAEA and requesting a new report from the Agency within 30 days.<sup>23</sup> This was an intermediate step in the possible scale of responses, due to Russia's and China's reluctance to move ahead with sanctions against Iran.

On 11 April 2006 President Ahmadinejad publicly made it known that Iran had begun enriching uranium at Natanz at a level of approximately 3.5 per cent using 164 centrifuges.<sup>24</sup> The next day Mohammad Saeedi, the deputy head of Iran's Atomic Energy Agency, added that Iran intended to move towards large-scale uranium enrichment involving 3,000 centrifuges by late 2006. The country would then expand the programme to 54,000 centrifuges – enough to produce enriched uranium to fuel a 1,000 megawatt reactor similar to the one at Bushehr.<sup>25</sup> The response of the US's George W. Bush administration came as no surprise: Secretary of State Condoleezza Rice called for action by the UNSC.

At the same time the E3/EU expanded the group to include the US, Russia and China, which would from then on be known as the E3/EU + 3 or P5 + 1. The new structure adopted a “package” of proposals: Iran would confirm its suspension of all enrichment-related and reprocessing activities; in return, light-water reactors would be provided to Iran through joint projects, along with nuclear fuel guarantees and a stock of fuel; the UNSC would suspend its discussion of Iran's nuclear programme; and there would be cooperation on civil aviation, telecommunications, high technology, agriculture, etc.

The P5 + 1 tabled this proposal to the UNSC for endorsement, which occurred in Resolution 1696 of 28 July 2006. Following Russia's and China's preference, the Council did not impose harsh sanctions on Iran, but acted under Article 40 of Chapter VII of the UN Charter, making its decision legally binding on Iran. It also called “upon all States . . . to . . . prevent the transfer of any items, materials, goods and technology that could contribute

to Iran's enrichment-related and reprocessing activities and ballistic missile programmes". If Iran did not comply with the requested suspension by 31 August 2006 the UNSC would adopt sanctions. Iran rejected the call for the suspension of enrichment and reprocessing, but noted two positive aspects of the proposal: "First – renewed emphasis on Iran's inalienable rights to develop its nuclear programme for peaceful purposes without discrimination in accordance with the NPT; [and] second – readiness for negotiations as a new beginning to reach a 'comprehensive agreement' with Iran."<sup>26</sup>

However, the UNSC was bound by its ultimatum, and when Iran rejected the call for it to suspend its enrichment-related activities the Council had no choice but to impose new sanctions on the country. Resolution 1737 (2006) of 23 December 2006 legally prohibited any transfer of goods or technology "which could contribute to Iran's enrichment-related, reprocessing or heavy water-related activities, or to the development of nuclear weapon delivery systems" to Iran. In addition, it required all states to freeze the assets of Iranian organizations and individuals associated with Iran's nuclear and missile programmes. A Sanctions Committee was established to monitor the implementation of the resolution, examine requests for transfers to Iran and receive reports on national implementation. Resolution 1747 followed on 24 March 2007 banning arms exports from Iran, and freezing the assets and restricting the travel of additional individuals. It reiterated that Iran should suspend all enrichment-related and reprocessing activities without further delay. In Resolution 1803 of 3 March 2008 the UNSC extended trade and travel restrictions, as well as the asset freeze in relation to proliferation-sensitive nuclear activities. It also stressed the willingness of the P5+1 to promote dialogue with Iran.

In parallel, the IAEA continued to inspect and verify Iran's nuclear activities. It also conducted negotiations on a "work plan" for Iran to answer all remaining questions about suspicions of nuclear weapons-related experiments and research. On 21 August 2007 both sides announced that they had agreed on such a framework.

Iran also renewed its attempt to enlarge the scope of discussions to non-nuclear issues. In May 2008 it proposed a "Package for Constructive Negotiations" that included cooperation on several issues (regional conflicts, terrorism, drugs, illegal immigration, etc.)<sup>27</sup> For their part, conscious that their attempts had hitherto failed to change Iran's attitude, the P5+1 decided to reformulate their June 2006 package in order to enhance its incentives for Iran in a joint letter by the six foreign ministers and the EU High Representative to their Iranian counterpart on 12 June 2008. The document also covered not only nuclear issues, but also dialogue on regional security, trade and economic relations, energy partnerships, etc. It marked the beginning of a new approach by the P5+1 – one that would eventually succeed.

## 2.4 The new approach to the negotiations (2008-2013)

At the June 2008 meeting in Tehran, although the suspension of enrichment-related activities and reprocessing still remained a major difference, the negotiators contemplated the idea of basing the negotiations on reciprocity. The “freeze-for-freeze” scheme required Iran to suspend its enrichment-related and reprocessing activities, and in return the P5+1 would refrain from further action against the country at the UNSC. From Iran’s point of view, despite appealing incentives, including security guarantees and legally binding assurances of fuel supplies, the reciprocity applied only to the sequence of negotiations, appearing at best as a face-saving device. But negotiations on long-term bilateral and regional cooperation would only occur after Iran had suspended all enrichment-related and reprocessing activities.<sup>28</sup> Nevertheless, Iran agreed to this new phase of the negotiations and a meeting was convened in Geneva on 19 July 2008. For the first time, still under the Bush administration, the US Undersecretary of State for Political Affairs, William J. Burns, participated, overriding the US precondition of Iran’s implementation of UNSC resolutions. This was the highest-level meeting between US and Iranian officials during the Bush administration. At the Geneva meeting the Iranian delegation issued a “non-paper” based on the common elements of the May 2008 Iranian package and the June 2008 P5+1 package.<sup>29</sup> But when the Iranian negotiator, Saeed Jalili, returned home he insisted that suspension (now taboo for Tehran) was not even discussed and that both sides had only made proposals regarding the timing of future talks.<sup>30</sup>

Because Iran did not show any sign of policy change the UNSC adopted Resolution 1835 on 27 September 2008: whereas the Council did not increase the list of existing sanctions against Iran, it reaffirmed its previous resolutions and commitment to an early negotiated solution, and again called on Iran “to comply fully and without delay” with its obligations. The EU adopted its own set of sanctions based on UNSC Resolution 1803 of 3 March 2008.<sup>31</sup>

In November 2008 Barack Obama was elected US president. The change of administration in Washington led the US to abandon the precondition of Tehran’s suspension of uranium enrichment-related activities for Iran to participate in the talks. Consequently, on 8 April 2009 the P5+1 formally invited Iran to resume the talks to “find a diplomatic solution to this critical issue”.<sup>32</sup>

After several months (because of domestic political upheaval), on 9 September 2009 Iran released a revised proposal based on the 2008 “package” that included suggestions for discussions on many issues (human rights, terrorism, illicit drugs, illegal migration, etc.).<sup>33</sup> Again, Iran sought to include nuclear negotiations within a broader framework that would recognize Tehran as a legitimate partner of the great powers in addressing global and regional issues.

At the same time, in a test of the changed US policy after President Ahmadinejad's re-election, Iran made it known on 2 June 2009 that it needed to procure LEU as fuel for the TRR, which was functioning with LEU from Argentina, because this fuel was running out.<sup>34</sup> On 21 September 2009 Iran also informed the IAEA of its decision "to construct a new pilot fuel enrichment plant . . . [with] a level of 5 per cent enrichment" at Fordow.<sup>35</sup> At the G-20 Summit in Pittsburgh on 25 September 2009 the US, French and British leaders stated that "The existence of this facility underscores Iran's continuing unwillingness to meet its obligations under UN Security Council resolutions and IAEA requirements". Nevertheless, the P5+1 reiterated their readiness to negotiate with Iran.

#### **2.4.1 The failed enriched uranium "swap deal"**

In response to the Iranian request for assistance in supplying the TRR with fuel, the "Vienna Group", composed of the IAEA, the US, France and Russia, met with Iran on 1 October 2009 in Geneva and discussed a US-Russian "fuel swap" proposal: Iran would ship 1,200 kg of its 3.5 per cent LEU (or 80 per cent of its stockpile) to Russia for enrichment to 20 per cent and France would convert this into 120 kg of fuel rods for the TRR.<sup>36</sup> But domestic power struggles in Iran delayed a formal agreement, with officials across the political spectrum rejecting the deal as an insult to Iranian technological prowess. Ali Larijani, the new chairperson of the Iranian parliament, expressed suspicion that the deal was a ploy to deprive Iran of most of its LEU stockpile and considered that Iran could purchase the 20 per cent enriched uranium from Russia directly or produce it domestically.<sup>37</sup> Eventually the Iranian foreign minister proposed to export the LEU in smaller quantities or to transfer 400 kg of LEU to an isolated island in exchange for the fuel rods. But a US spokesperson rejected this idea as inconsistent with the IAEA proposal.<sup>38</sup>

As a result, on 8 February 2010 Iran announced that it would begin producing enriched fuel for the TRR and modify its Natanz plant to include the production of uranium enriched to 20 per cent.

Meanwhile, Brazil and Turkey had started negotiating their own "swap deal" with Iran, and adopted the 17 May 2010 Tehran Declaration (or "Joint Declaration") based on the same principles as those of the Vienna Group. But the US, France and Russia rejected the proposal because it did not address Iran's retention of 19.75 per cent enriched uranium, and after additional months of enrichment the removal of 1,200 kg would still have left Iran with substantial LEU stocks.<sup>39</sup>

In view of this disagreement the UNSC adopted a fourth round of sanctions in Resolution 1929 (2010) of 9 June 2010 that not only tightened nuclear proliferation-related sanctions, but also prohibited Iran from conducting nuclear-capable ballistic missile tests and imposed

an embargo on transfers of heavy armaments to that country. The Iranian representative claimed that his country had “responded positively to the efforts of Turkey and Brazil, which had pursued that deal in good faith, leading to a declaration on the exchange of fuel. But instead of welcoming that agreement, the hostile powers had immediately introduced the current resolution.”

Following the new UN sanctions a wave of unilateral sanctions were also imposed on Iran’s oil sector by the US (the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 1 July 2010) and the EU (on 26 July 2010). But the P5+1 and Iran nonetheless resumed their talks in Geneva in December 2010 and in Istanbul in January 2011. Iran’s negotiator, Saeed Jalili, put forward two preconditions for agreeing to a deal: that Iran’s “right” to enrich uranium be recognized and that the UN lift its punitive economic sanctions on Tehran. Unsurprisingly, the P5+1 rejected these preconditions, but negotiations continued.<sup>40</sup>

Russia’s foreign minister, Sergei Lavrov, proposed a new approach to the negotiations based on the “freeze-for-freeze” formula discussed in 2008.<sup>41</sup> This offer of a “phased” or “step-by-step” approach was publicly confirmed when Lavrov met with the US Secretary of State, Hillary Clinton, and President Obama on 15 July 2011.<sup>42</sup> In a May 2012 declaration this approach was adopted by the P5+1 and endorsed by the G-8; the declaration emphasized “the principles of a step-by-step approach and reciprocity” and maintained that the “overall objective [was] a negotiated solution to the nuclear issue leading to Iran’s full compliance with UN Security Council resolutions and to the lifting of all sanctions once international confidence in the peaceful nature of Iran’s nuclear programme is restored”.

From then on the pace of negotiations accelerated. The P5+1 and Iran met multiple times in different locations despite 30 August 2012 and 16 November 2012 IAEA reports that Iran was continuing to increase the number of centrifuges at Fordow and producing more 20 per cent enriched uranium. But no substantial progress was made and the proposals from each side remained far apart.

It was in this tense context that the Sultanate of Oman began to host secret discussions between Iranian and US officials in March 2013.<sup>43</sup> On 14 June 2013 Iran elected Hassan Rouhani as president. Along with President Barack Obama’s election and the Russian “step-by-step” initiative, this would be the third major turning point leading to a comprehensive nuclear agreement. Rouhani, an experienced negotiator on the Iranian nuclear programme, was familiar with all the complexities involved in the process. He was also elected on a platform of economic reform, which required lifting the sanctions on Iran while maintaining its “inalienable right” to a peaceful nuclear programme.

At the first ministerial-level meeting between the P5+1 and Iran on 26 September 2013, the Iranian foreign minister, Javad Zarif, presented a new proposal hailed by the US Secretary of State, John Kerry, as “very different in tone and . . . in . . . vision”.<sup>44</sup> This meeting was followed by a telephone call between Presidents Obama and Rouhani, which was the highest official contact between the two countries since 1979. In Geneva on 15-16 October 2013 the P5+1 recognized the new Iranian proposal as an “important contribution”. The proposal was understood to contain a broad framework for a comprehensive agreement and interim confidence-building measures for the following three to six months.<sup>45</sup> The negotiators met in Geneva on 20-24 November 2013 at the ministerial level, and on 24 November 2013 they adopted the Joint Plan of Action (JPOA), which was effectively a roadmap to the final comprehensive agreement.

## **2.5 The interim agreements (2013-2015)**

The JPOA was intended to pave the way to a “mutually agreed long-term comprehensive solution that would ensure that Iran’s nuclear programme will be exclusively peaceful . . . ; [that] would involve a reciprocal, step-by-step process, and would produce the comprehensive lifting of all . . . sanctions . . . related to Iran’s nuclear programme”. This preamble encapsulated both the reciprocal approach to and content of the potential comprehensive agreement.

Half the existing 20 per cent enriched Iranian uranium was to be retained and the remaining UF<sub>6</sub> would be diluted to no more than 5 per cent, no enrichment of uranium over 5 per cent would be carried out for six months, no further improvements would be made to the Natanz and Fordow plants or the Arak reactor; there would be no reprocessing or construction of a reprocessing facility, and there would be enhanced monitoring of facilities. In return the P5+1 would, among other things, pause efforts to reduce Iran’s crude oil sales; enable the repatriation of some oil revenue; suspend sanctions on insurance, transportation, petrochemical exports, gold and precious metals, and the auto industry; allow the supply of spare parts for the safety of civil aviation; refrain from new nuclear-related sanctions; facilitate humanitarian trade; etc.

The negotiators outlined the elements of the final comprehensive solution. Once this solution was implemented, the Iranian nuclear programme would be treated in the same way as that of any non-nuclear weapon state party to the NPT. Unsurprisingly, Israeli Prime Minister Benjamin Netanyahu’s reaction was strongly negative. Although the Saudi government publicly voiced cautious support for the interim agreement, behind the scenes the Saudis did not hesitate to voice discontent with the potential agreement.

The momentum of the JPOA increased and further meetings occurred in Geneva on 9-12 December 2013, 30-31 December 2013 and 9-10 January 2014. Iran did all that it could to meet the deadlines and undertook all the actions outlined in the JPOA, as the IAEA recognized in its 20 January 2014 report. For their part, the US and EU confirmed the lifting of those sanctions covered in the JPOA and the release of oil payments held up by the application of oil sanctions.<sup>46</sup>

Regarding Iran's past nuclear PMDs, on 11 November 2013 the IAEA and Iran concluded a "Framework for Cooperation Agreement" to provide the Agency with all the required information on and access to both unresolved and future nuclear activities.

Intensive negotiations between the P5+1 and Iran on the final comprehensive agreement took place in Vienna on 17-20 February, 17-20 March, 16-20 June, 2-19 July, 14-16 October and 18-24 November 2014. When target dates could not be met new deadlines were adopted. Despite difficulties in drafting the final agreement the implementation of the JPOA was continued and additional commitments were undertaken.

Talks resumed in December 2014 with the participation of foreign ministers and the new EU High Representative, Federica Mogherini. On 2 April 2015 the negotiators announced in Lausanne that a "framework" agreement had been concluded outlining the "key parameters" of the proposed JCPOA. Under the Lausanne Accord Iran's enrichment capacity, enrichment level and stockpile would be limited for specified periods; there would be no enrichment facility other than Natanz; Fordow would be converted into a nuclear physics and technology centre; Iran would rebuild a modernized heavy-water research reactor at Arak with international assistance; there would be no reprocessing and the spent fuel would be exported; the IAEA would have enhanced access to Iranian facilities; the EU and US would terminate all nuclear-related economic and financial sanctions upon IAEA certification of Iran's implementation of the agreement; and a new UNSC resolution would endorse the JCPOA and terminate all previous nuclear-related resolutions.

On 14 July 2015 the negotiators announced that they had achieved the JCPOA. The document contained a main text and five technical annexes on nuclear-related commitments, sanctions-related commitments, civil nuclear cooperation, the Joint Commission and an implementation plan.

The joint statement by Iran and the P5+1 called the agreement "historic", because it created "the conditions for building trust and opening a new chapter" in the relationship between the parties and would "ensure that Iran's nuclear programme will be exclusively peaceful" through a "balanced deal that respects the interests of all sides".

### 3. The 2015 Joint Comprehensive Plan of Action: an analytical appraisal

On 14 July 2015, after years of intense negotiations, the P5+1 and Iran agreed to the landmark JCPOA, which outlines restrictions on Iran's nuclear programme, and detailed verification and implementation measures in exchange for comprehensive sanctions relief and peaceful nuclear cooperation. While it garnered significant vitriol in certain quarters in Iran, the US and the Middle East region, for others, including some 70 world non-proliferation experts, the agreement was a "strong, long-term, and verifiable agreement that will be a net-plus for international nuclear non-proliferation efforts".<sup>47</sup>

The JCPOA addresses both available routes to a nuclear weapon: enriched uranium and plutonium. It clearly outlines well-defined constraints on Iran's nuclear programme that last between ten and 25 years or are permanent. It also establishes the most intrusive verification system to date, which will help the IAEA to determine the peacefulness of Iran's nuclear programme. While Iran will return to "normal" NPT state party status after the end of the agreement, the JCPOA reaffirms that "under no circumstances will Iran ever seek, develop or acquire any nuclear weapons".

#### 3.1 The first path to a nuclear weapon: enriched uranium

Prior to the agreement Iran had 19,500 old IR-1 centrifuges in its facilities, of which 10,200 were enriching uranium at two enrichment plants: Natanz and Fordow. Following the JCPOA, Iran's centrifuges will be cut down to 6,104 - a reduction of 68 per cent. Of those, 5,060 – roughly half the operating centrifuges Iran had before the agreement – will be allowed to enrich uranium to less than 5 per cent (only at Natanz) for ten years. The remainder of Iran's non-operating centrifuges will be dismantled and stored at Natanz under IAEA seal, as will all piping and connected infrastructure for the enrichment cascades. This prevents Iran from reconnecting its centrifuges to existing infrastructure and resuming enrichment rapidly. Importantly, the IAEA seals directly communicate any breaches to the Agency.

Under the agreement Iran can only deploy the old IR-1 centrifuges, modelled on the Pakistani P-1 machines, which are notoriously unreliable, prone to breakage and limited in efficiency. The "product-to-feed ratio" for Iran's IR-1s was below what was expected.<sup>48</sup>

Iran therefore focused some of its efforts on developing more advanced centrifuges, installing 1,008 IR-2 centrifuges at Natanz, which it agreed not to use for enrichment under the interim agreement. Under the JCPOA, Iran has to remove all IR-2 centrifuges and store them under IAEA seal. It also has to cease testing its more efficient IR-2 and IR-4 machines. In fact, Iran's general research and development (R&D) on advanced centrifuges is restricted: it can do small-scale, in-lab testing of advanced centrifuges, but no broad testing for the next decade. While it can feed these machines with uranium, it is not

permitted to withdraw any enriched material from them. After this initial period Iran can begin testing cascades of 30 IR-6 and IR-8 machines (but still not withdraw feed). Such small-scale testing will not allow Iran to prepare its advanced machines for use in ten years when the restrictions are lifted.

Under the agreement, for 15 years Iran can only enrich uranium to no more than 3.67 per cent - a significant reduction from the 20 per cent it previously enriched to and the 60 per cent it aimed to reach.<sup>49</sup> Iran can also not build any additional enrichment plants for this period.

According to the IAEA the “significant quantity” of HEU (enriched to beyond 20 per cent) required to manufacture a nuclear weapon is approximately 25 kg.<sup>50</sup> While in theory a nuclear weapon can be made using 20 per cent enriched uranium, this would be impractical because the device would be too large and heavy. HEU enriched above 90 per cent – i.e. weapons-grade HEU – is preferred. Before the signing of the JCPOA Iran’s stockpile of LEU was approximately 10,000 kg, enough to make eight to ten nuclear weapons if it were further enriched.<sup>51</sup> Currently Iran’s stockpile is capped at 300 kg for 15 years – a reduction of 98 per cent, and significantly less than what is needed for a nuclear weapon. The 300 kg figure includes uranium in other forms (gas or powder), but not the fuel assemblies required for the TRR or the Bushehr power plant. Reconverting fuel assemblies into gas or powder is a difficult process and would be rapidly detected by the IAEA, which will closely monitor the assemblies. The capped amount also covers the use of advanced centrifuges after the decade-long restriction on R&D is lifted. In other words, Iran can use advanced machines for enrichment after ten years, but for every advanced centrifuge it introduces it must remove the corresponding enrichment capacity in IR-1 machines so that its stockpile of LEU remains capped at 300 kg.

The time required to manufacture a nuclear weapon is also important. Negotiators settled on the “breakout time” as the standard for measuring Iran’s ability to produce one weapon’s worth of fissile material<sup>52</sup> using its infrastructure. The concept itself is flawed because it ignores the time required to weaponize the fissile material and only covers the time needed to build one nuclear device, which would not be sufficient to build a credible deterrent.<sup>53</sup> Nevertheless, prior to the agreement Iran’s breakout time was estimated to be between two and three months. Today and for the next ten years the breakout time has been extended to more than 12 months.<sup>54</sup>

Iran will, however, retain a uranium enrichment programme. Strictly speaking, this programme is beyond what the country needs for a peaceful nuclear programme, especially given Russia’s guarantee to supply fuel for the Bushehr power plant. Tehran believes that relying on external supplies makes it vulnerable and insists that it needs to be self-sufficient

in this regard. Whether Iran is right or not, the JCPOA had to address this concern.<sup>55</sup> What is more, after the JCPOA implementation period comes to an end Iran could expand its enrichment activities without restriction. But in practice this is unlikely to materialize immediately. The limited testing of advanced centrifuges will not allow Iran to prepare its advanced machines for use. Today, country's stockpile of enriched uranium is capped and its programme restricted such that the breakout time is significantly extended, and any breach of the agreement would be detected by the IAEA with a high degree of reliability.

### **3.2 The second path to a nuclear weapon: plutonium**

States can also choose to use plutonium-239 as fissile material in the core of a nuclear weapon. Weapons-grade plutonium is produced in heavy-water reactors.<sup>56</sup> Iran built its own heavy-water reactor at Arak, which has not been completed. Following the interim agreement (the JPOA) that suspended construction at the site, the JCPOA effectively closed off the plutonium path to nuclear weapons by redesigning the facility to make it proliferation-safe.

The Arak reactor could potentially produce two bombs' worth of weapons-usable plutonium per year using natural uranium feed.<sup>57</sup> To be usable for a weapon, plutonium would have to be separated from the spent fuel in a reprocessing facility, which Iran does not have. Under the agreement Iran commits not to reprocess spent fuel or separate plutonium for 15 years, or to build a facility that would allow it to reprocess fuel. Iran also commits not to build any other heavy-water reactors for the same period. The IAEA would most likely detect any efforts to do so.

Under the JCPOA Iran commits to halting construction at the Arak facility and working with the P5+1 to redesign the heavy-water reactor. In January 2016 Iran made the core unusable by filling the fuel conduits with cement. Arak will be fitted with a new, reduced-power core of 20 MWt<sup>58</sup> using 3.67 per cent enriched uranium. These modifications cut the production of weapons-usable plutonium to approximately 1 kg a year. With this production rate Iran would have to run the facility for a number of years before it could accumulate enough material for a nuclear weapon. The agreement addresses Iran's potential accumulation of spent fuel by requiring Tehran to ship it all out to a P5+1 or third country, where it will be disposed of or treated. Tehran must transfer the spent fuel within a year of unloading it or as soon as it is safe enough to transport. It will be very difficult and lengthy for Iran to reconvert the Arak facility into a heavy-water plant without its being detected by the IAEA.

### 3.3 Verification: little room for “sneaking out”

All the measures described above block Iran’s potential path to a nuclear weapon using existing facilities: this is the “breakout” capability. But if Iran wanted to make a dash for a nuclear weapon it would be more likely to “sneak out”, i.e. to use undeclared facilities. The JCPOA addresses both the “known knowns” and the “unknown unknowns” by putting in place the most intrusive monitoring and verification system to date. All verification measures are spelled out in detail in the JCPOA, guarding against misinterpretation and allowing the P5+1 to reimpose sanctions if Iran does not comply.

The monitoring and verification system put in place by the JCPOA is multi-layered and intrusive. It provides for the monitoring of all aspects of Iran’s nuclear programme. Under the agreement Iran will ratify and apply the Additional Protocol – the most intrusive legal verification document to date – and adhere to Code 3.1 of its Comprehensive Safeguards Agreement with the IAEA. Iran’s adherence to the Additional Protocol is permanent, dismissing concerns over the limited duration of the JCPOA.

Under the agreement the IAEA will have access to all of Iran’s nuclear facilities for the next 20 years. It will continuously monitor the country’s enrichment capability, including through real-time monitoring of its enrichment facilities and access to its uranium mining and milling facilities. The IAEA will also supervise the production of uranium concentrate (“yellow cake”) for the next 25 years. The IAEA seals on disassembled and stored centrifuges will notify the Agency if they are tampered with. Iran must allow short-notice inspections of its nuclear facilities – as short as two hours if inspectors are already present at the site.

The JCPOA also outlines a mechanism for gaining access to sites of concern, for example, if there is suspicious activity at an undeclared site. Iran can challenge the IAEA’s request to inspect the facility, leading to an arbitration process that could take up to 24 days to resolve.<sup>59</sup> This provision is intended to close a loophole in the Additional Protocol, which does not cover what the international community can do if a country refuses to grant the IAEA access to a suspect facility within 24 hours. While Iran could potentially use that timeline to hide some evidence of minor illicit activities,<sup>60</sup> the facilities needed to develop a covert nuclear programme are likely to leave traces of radiation that do not disappear quickly. In other words, illicit activity at an undeclared site is likely to be detected under the JCPOA.

If Iran decided to “sneak out” it would have to rebuild an entire covert fuel cycle, from uranium ore to weapons-usable uranium, but it cannot do so and escape detection. Iran is unable to produce all the parts and components necessary for its programme indigenously. As a result, it would have either to procure what it needs or divert materials from authorized procurements. Diversion would likely be detected by the IAEA because of the

intrusive verification system put in place, combined with the existing export control regimes. The agreement outlines a transparent and authorized procurement channel, overseen by the Joint Commission,<sup>61</sup> that Iran can use to obtain specific nuclear and dual-use items. The UNSC can approve the transfer of dual-use items to Iran on an individual basis. Iranian procurement of sensitive items through illicit channels would be a violation of the agreement and would lead to “snap-back” sanctions.

But what about Iran’s non-nuclear facilities? Opponents of the JCPOA criticize the lack of “anytime, anywhere” inspections of all suspicious facilities. But Iran (or any other country, for that matter) would never have accepted such an obligation, making it impossible to reach an agreement. Iran legitimately wanted to protect its sensitive military facilities and defences, some of which have nothing to do with its nuclear programme. The IAEA’s monitoring of Iran is anyhow complemented by national intelligence organizations, which can be expected to continue to closely monitor the country’s nuclear and military sites.

### **3.4 Possible military dimensions**

The PMDs of Iran’s programme did not feature in the final agreement, but were covered by a separate, secret document agreed between Iran and the IAEA committing Iran to answer all the IAEA’s “outstanding issues” on its PMDs, as outlined in the Agency’s November 2011 report. This was completed to a satisfactory degree on 2 December 2015, when the IAEA director general reported: “The Agency has no credible indications of activities in Iran relevant to the development of a nuclear explosive device after 2009. ... The Agency has found no credible indications of the diversion of nuclear material in connection with the possible military dimensions to Iran’s nuclear programme.” On 15 December 2015 the IAEA Board of Governors noted that “all the activities in the Road-map for the clarification of past and present outstanding issues regarding Iran’s nuclear programme were implemented in accordance with the agreed schedule”.

Critics of the agreement argue that not making sanctions relief dependent on the clarification of the PMDs of Iran’s nuclear programme effectively lets Tehran off the hook. But it is highly unlikely that an agreement could have been reached had this been a condition. For Iran, the PMD issue represented a catch-22 situation: if it came clean on past activities, it would undermine its own nuclear rhetoric and be criticized as untrustworthy, potentially jeopardizing the resolution of the nuclear crisis; if it refused to do so, then Tehran would be labelled obstructive and, again, untrustworthy. The separate track agreed to by the IAEA and Iran allows Tehran to clarify as much of this contentious issue as possible away from the limelight.

### 3.5 The “carrots”

In order to incentivize the implementation of the agreement it was vital for the P5+1 and Iran to agree to a number of “carrots”. This would ensure that Iran has a reason to comply with the JCPOA in the long term.

#### 3.5.1 Sanctions relief

The timeline and scope of sanctions relief constituted one of the most contentious issues in the negotiations on the Iranian nuclear programme. Initially, Iran was adamant that all relief would have to be upfront. Such rhetoric continued until the framework agreement of April 2015<sup>62</sup> and partially explains the delay in reaching the final agreement. As negotiations progressed, however, there was greater understanding among the Iranian negotiating team that sanctions relief would be conditional on the implementation of the terms of the final agreement.<sup>63</sup>

The sanctions relief mechanism was triggered on “Implementation Day”, when the IAEA verified Iran’s compliance with the nuclear-related measures outlined in the JCPOA on 16 January 2016. Through Resolution 2231 of 20 July 2015 the UNSC unanimously approved the agreement and decided to nullify previous resolutions once Iran complied with its nuclear-related JCPOA obligations. As a result UN sanctions on Iran were “terminated subject to re-imposition” on Implementation Day.<sup>64</sup>

The EU lifted its unilateral financial and energy sanctions, including its 2012 oil embargo, on the same day. It unfroze Iranian assets and lifted sanctions on shipping, insurance, and gold and precious metals. Because of the complicated and layered nature of US sanctions, lifting them immediately, like the EU and UN sanctions, is not possible. On Implementation Day the US ceased to apply all major sanctions on Iran’s financial and energy sectors, and gave Iran access to oil revenue held abroad. While the US stopped implementing banking sanctions on Iran, any bank that does business with that country will remain frozen out of the US market because of US third-party sanctions.<sup>65</sup> The US also ended third-party sanctions on entities trading with Iran’s transport, insurance, gold and precious metals industries, and delisted a number of Iranian entities. But sanctions related to human rights abuses and terrorism remained in place.

The next step in the sanctions relief timeline takes place on “Transition Day”,<sup>66</sup> eight years after Iran agreed to the JCPOA or once the IAEA confirms the peacefulness of the country’s nuclear programme. Then the EU will lift its arms embargo and the restrictions on the transfer of ballistic missile technology. In the US, while the president can cancel executive orders, ending the remaining sanctions related to Iran’s nuclear proliferation activities will require legislative action. The JCPOA requires the US to “seek” such action, but the text does not offer a concrete timeline or say what would happen if the US failed to do so.

The US will also delist a further 43 companies or individuals on Transition Day. Finally, the UN will also lift restrictions on trade in ballistic missile technologies. This will follow the removal of such restrictions on trade in conventional weapons, which will occur five years after the JCPOA.

A novel aspect of the JCPOA is the “snap-back” provision agreed by the P5+1 and Iran. This allows any party to the agreement to launch an investigation into suspicions of Iranian non-compliance, which could eventually lead to sanctions being reimposed on Iran. Under such a mechanism a violation would be reported to the UNSC and referred to the Joint Commission for resolution of the dispute. The commission would then issue a non-binding opinion to the UNSC, which would make the final determination as to whether or not to “snap back” the sanctions.

Another complexity of the sanctions relief process will be the effective untangling of the multiple sanctions regimes and overlapping restrictions in order for Iran to reap the benefits of the relief. Firstly, the EU and UN sanctions were removed on Implementation Day, while US sanctions only ceased to be implemented then (i.e. they remain in place). As a result, some businesses may fear that US sanctions could suddenly be reimplemented, which would increase the risk of doing business with Iran for them. In addition, if sanctions are “snapped back” as a result of non-compliance, no clause in the JCPOA or UNSC Resolution 2231 (2015) provides that signed contracts must be fulfilled. Any company looking to do business with Iran will have to take this into consideration. Individual designations by different countries are also problematic: some individuals have been designated for multiple reasons under multiple lists. While there is significant overlap among the US, EU and UN lists, some differences remain.

Sanctions relief is vital to ensure the longevity of the JCPOA, because it incentivizes Iran to implement the deal. The process is likely to be difficult, given the intertwined and significant nature of the multiple sanctions regimes on Iran. This will likely mitigate some of the benefits Tehran will receive from the relief.

### **3.5.2 Civil nuclear cooperation**

The JCPOA promotes the establishment of civil nuclear cooperation between Iran and the P5+1 and other foreign nuclear providers. This provision is particularly important for Iran to “sell” the deal back home. Indeed, over the years Iran constructed a narrative of nationalism and prestige around the nuclear issue.<sup>67</sup> This made it difficult for it to agree to a document that stripped it of aspects of its nuclear programme, which it built under significant hardship and pressure, without the additional incentive of cooperation to continue to advance its peaceful civilian nuclear programme. With it, Iranian officials are

able to justify “swallowing” the JCPOA pill by stating that the agreement allows Iran to legitimately continue its R&D in its nuclear programme, with the assistance and superior technology of foreign nuclear powers.

The most talked about aspect of civil nuclear cooperation, as mentioned above, is the collaboration of P5+1 states, Iran and possibly other nuclear powers on the rebuilding of the Arak reactor. The P5+1 also agreed to facilitate Iran’s acquisition of light-water reactor technologies, including helping with the construction of new reactors, and providing training and technology. The P5+1 will also assist Iran in fuel fabrication. Iran will also seek cooperation on a number of nuclear R&D projects and nuclear safety issues – it is the only country that operates a nuclear power plant and is not party to the Nuclear Safety Convention,<sup>69</sup> leading to significant concerns on the part of its Gulf neighbours. The JCPOA encourages Iran to engage nuclear safety regulatory authorities in other countries in order to share best practices and experiences on a number of safety issues, including, but not limited to, crisis and accident management. The P5+1 will also help Iran to improve the security of its nuclear facilities and materials through training programmes.

The non-exhaustive list of civil nuclear cooperation projects with Iran outlined in the JCPOA is important for the long-term implementation of the agreement. Aside from providing legitimacy to Iran’s civilian nuclear development – which is crucial for domestic support of the agreement – cooperation provisions also provide Iranian scientists and engineers with projects that they can continue to work on. Building ties with Iran’s civilian nuclear programme could be a way to gain insight into how Tehran runs its programme and what its priorities are. As noted, cooperation will make Iran’s programme more transparent and may standardize some of Tehran’s security practices. Such cooperation provisions could also help Iran to establish partnerships and relationships that it could use once the JCPOA comes to an end, allowing Tehran to expand its programme more rapidly at that time.

If implemented correctly, the landmark JCPOA of 14 July 2015 will effectively constrain and roll back Iran’s nuclear programme by blocking both the enriched uranium and plutonium paths to a nuclear weapon. The agreement also establishes the most intrusive verification system to date, giving the IAEA unprecedented access to all stages of the fuel cycle in Iran. The agreement does not completely remove Iran’s enrichment capability or close down all of its nuclear facilities, but that kind of agreement was not achievable. Both sides have an incentive to ensure timely and effective implementation of the JCPOA.

## 4. After the JCPOA, what next? Global and regional prospects

Now that the nuclear agreement between Iran and the P5+1 has been achieved, attention has shifted to the implications of the deal for the Middle East region and its security, and prospects for maintaining the dialogue with Iran. The nuclear agreement ensures that a barrier to dialogue with Iran has been removed, particularly for some Western countries. While in the short term its positive regional impact may be minimal, over time the JCPOA should help to temper Iran's regional policy.

### 4.1 The impact of the JCPOA

Generally, the implications of the nuclear agreement are threefold: for Iran's domestic politics, for its regional relations, and for its relations with the West – the US and the EU in particular. While in the immediate aftermath of the deal the domestic and international situation seems to have worsened for Iran, it is expected that in the long term the agreement may positively influence Iranian foreign policy.

#### 4.1.1 Domestic impact

Although an examination of the domestic impact of the nuclear deal is not strictly in the mandate of this paper, such an impact is important insofar as it affects Iran's regional and international relations. In the immediate aftermath of the July 2015 deal the political infighting in Iran worsened. But it is anticipated that the agreement will empower and further legitimize those who pursued and support it – the “Rouhani camp”. There is more scope for moderation with an empowered president who since his election in 2013 has shown that he is in favour of engagement with the West and Iran's neighbours.<sup>70</sup> There is no doubt that a strong, more independent Iran will naturally pursue its own interests. But it also seeks regional stability, and may be more understanding of Western goals if it develops ties with the EU, the US and the region.

#### 4.1.2 The region

To date, the nuclear agreement has freed up political space for dialogue with Iran. The country's participation in the talks on Syria in Vienna in October-November 2015 and negotiations to free the US sailors captured by Iran in January 2016 are evidence of this. But the nuclear deal has had a mixed impact on Iranian regional policy. While Tehran has claimed that it aims to mend the divide between itself and its neighbours,<sup>71</sup> it has not scaled back its disruptive activities in the region, largely because the president only controls restricted foreign policy files. Indeed, most foreign policy issues are the purview of the Supreme Leader and the Revolutionary Guards, both of whom have more hawkish views on the conduct of foreign policy than the Rouhani administration. As a result of this and the regional fear of an empowered Iran, the short term will witness greater intra-regional tensions.

The fear is that the nuclear deal will intensify a new cold (arguably increasingly hot) war in the region, which could easily happen if tensions arise like those following Saudi Arabia's beheading of Shia sheikh Nimr al Nimr in January 2016 spiral out of control.

The Gulf Arab countries made it no secret that they opposed the nuclear negotiations and deal with Iran. For them, Iran's nuclear programme is a secondary concern in light of Tehran's perceived expansionist regional policy. They believe that the JCPOA will provide Iran with further means to fund its proxies and destabilize the region. They see the agreement as paving the way for a US-Iranian rapprochement at their expense, even though this is clearly not on the cards in the foreseeable future.<sup>72</sup>

While some were quick to congratulate the negotiators on the outcome of the talks,<sup>73</sup> general Gulf Cooperation Council (GCC) support only materialized after weeks of intense US lobbying.<sup>74</sup> Throughout the negotiations Saudi Arabia was the most vocal in its scepticism. Immediately after the announcement of the JCPOA Prince Bandar wrote that the deal would only "wreak havoc" in the Middle East and criticized the Obama administration for pursuing it.<sup>75</sup> With the agreement, the need to counter Iran and its influence will become further entrenched in thinking in Riyadh, which will likely further inflame sectarian conflicts in the region in the near future. But to date Saudi Arabia's efforts have been largely ineffective.

Its intervention in Yemen, for example, is draining Saudi resources without much of a positive outcome and negatively impacting its reputation. Apart from Oman, other GCC countries will likely follow Riyadh's lead, as was seen after the Saudi embassy incident in January 2016. The United Arab Emirates, for instance, has struggled with Iranian influence in the past. A rivalry between Abu Dhabi, which is generally weary of Iran, and Dubai, which is a hub for Iranian trade in the region, was quelled by US lobbying to implement additional sanctions on Iran in 2010.

Countries like Saudi Arabia have repeatedly claimed that they are entitled to the same nuclear programme as Iran under the JCPOA.<sup>76</sup> This has led to concerns of a proliferation cascade scenario. A careful look at the region's actual technical capability, political and security context, and the intentions of potential contenders confirms that most of these concerns are baseless.<sup>77</sup>

As a result, a limited response is possible from the Gulf Arab States. In the short term the region is likely to continue to view Western rapprochement with Iran as tantamount to accepting Iranian gains in the region. The GCC states will continue to view regional conflicts as part of a larger struggle against rising Iranian influence and meddling. This is likely to worsen sectarian tensions and regional conflicts. But the current downward spiral cannot be sustained. The threat to acquire nuclear weapons is unlikely to materialize and reckless

actions like the Saudi-led intervention in Yemen will not help the GCC cause. Today, the JCPOA is a fact of life in the region, while the US and Europe have gone a long way towards reassuring their Gulf Arab allies. The post-deal context should be an opportunity to test Iranian willingness and ability to engage on regional conflicts and patch up long-standing regional rivalries.

Today, such an opportunity exists in the conflict in Yemen. The Shi'ite Houthis' takeover of Sanaa in September 2014 panicked Riyadh, for whom Yemen is a primary zone of influence and a high priority. But Yemen is far from a priority for Iran. According to a current Iranian official, that country "is last on our list of regional priorities".<sup>78</sup> Unlike its strategy in neighbouring Iraq and Syria, Tehran's Yemen policy is erratic and lacks an ultimate goal. Tehran provided some level of support for the Houthis, but not to the extent portrayed by the media.<sup>79</sup> Yemen is the area of overlap for Iran and Saudi Arabia: Iran can compromise on Yemen, so the conversation should begin here.

#### **4.1.3 More general dialogue with Iran?**

Engagement with Iran should be based on a two-pronged strategy: discussions on areas of conflict resolution today, and future collaboration on various issues important to both the region and external actors, such as combating drug trafficking or terrorism. While discussions should be intra-regional, as described above, they will inevitably (and must) have an international dimension, involving the US and its European allies, as well as, ideally, Russia.

Today, combating IS in Iraq presents the most immediate opportunity for dialogue with Iran and limited collaboration with the West. Iran is more committed to Iraq than any other regional player, because of the religious links, high volume of trade and 1,500 km of porous border it shares with Iraq.<sup>80</sup> While at first Iran sought to keep its presence as limited as possible in order to "lead from behind", it did not hesitate to empower local groups to fight IS. Progressively, though, Iran ramped up its involvement by sending in advisers, including General Qassem Soleiman – the public face of the Revolutionary Guards – and military forces. The international community cannot contain IS and roll it back with just US-led air strikes. Iran's ground assistance is welcome, so long as it does not come at the expense of Iraq's Sunni population. With the July 2015 nuclear agreement limited Western coordination with Iran becomes possible. Not only will this likely make the campaign against IS more effective, but working with Iran may give the US and its allies greater influence over Iranian actions on the ground. This will be particularly important in order to manage the Shi'ite militias under Tehran's influence.

The conflict in Syria is more problematic. Here, Tehran and Washington have different goals: Iran wants the Alawite regime to remain in power, while Washington wants President Assad to go. Both, however, want to get rid of IS in Syria. Iran's efforts in Syria include:

overtly supporting the Assad regime; supplying money and surveillance equipment; and funding, training and arming local popular committee militias. These militias are separate from the Shabiha militia network, and Tehran sees them as forming a structure that it could rely on should the Alawite regime collapse. By April 2014 Iran reportedly provided up to \$12.6 billion in financial support to the Assad regime.<sup>81</sup> Its efforts have been a drain on its resources at a time when Iran was facing the most comprehensive sanctions. This led to some debate among Iranian officials over the country's efforts in Syria. But this debate was largely quelled after the rise of IS and the perception of the threat that the group posed to Iran's borders.<sup>82</sup>

Today, Iran is beginning to feel the pain of its involvement in Syria. The number of Revolutionary Guards deaths has risen, including that of senior commander Hossein Hamedani on 9 October 2015. This sparked a resumption of the internal debate about the goal of Iran's intervention in Syria.<sup>83</sup> At the same time Iran reportedly intensified its efforts on the ground, with hundreds of Iranian "volunteer" troops reportedly arriving in Syria in the lead up to a government offensive against rebel positions in south Aleppo,<sup>84</sup> although later reports mentioned a pull out of Revolutionary Guards.<sup>85</sup> These developments complicated efforts to resolve the crisis through negotiations held in Vienna in late October 2015. Notably, however, this was the first round of talks on Syria in which Tehran took part. While to date, after multiple rounds of talks, very little has been achieved, it is noteworthy that Iran has finally been included in the talks and that it sits across the table from its regional rival, Saudi Arabia. This was inconceivable in attempts to end the war in Syria only a few months before. The nuclear deal arguably paved the way for Iran's inclusion in the talks on Syria.

#### **4.2 The nuclear deal as a model for dialogue?**

Clearly, the nuclear negotiations between the P5+1 and Iran are an example of sustained, successful dialogue with Iran. Some, including in Iran, have highlighted how the nuclear talks could serve as a model for dialogue in the region.<sup>86</sup> The talks present a template for all negotiations because they were inclusive, comprehensive on the issue they were intended to tackle and resulted in a "win-win" solution for all the parties involved. The resultant JCPOA also generated a certain momentum that should be built on to continue dialogue with Iran, and also between Iran and its Gulf Arab neighbours.

But the P5+1 and Iranian nuclear negotiation model also has its drawbacks. The entire process was drawn out and lasted well over a decade. The region cannot afford a similar timeline for regional security issues. On the nuclear issue, it was only when both sides decided that they stood to gain from the resolution of this issue, followed by the change in individuals leading the process, that talks were able to get anywhere at all. This highlights the dependence of the process on the personalities involved, which constitutes a limiting

factor for regional dialogue. Current tensions between countries like Iran and Saudi Arabia are partly due to the pre-existing perceptions and positions of those in power, and regional dialogue cannot wait until they change.

In addition, the nuclear negotiations process was limited to the five permanent members of the UNSC, Germany and Iran (with some role for the EU and IAEA). This worked for the nuclear issue, but cannot be expected to work for issues of regional security. Throughout the nuclear talks other regional power centres complained that they were not at the negotiating table on an issue that concerned them first and foremost. Building trust and a regional security system simply cannot be achieved without all countries in the region being involved – such a system must be a product of the region for it to be effective. Finally, the deal was comprehensive on the nuclear issue, but not across the board – it was no grand bargain. Regional security issues, on the other hand, will cover multiple issues and be considerably more complicated. Sticking only to the P5 + 1 model would not work because that was designed to resolve a single issue only (although Iran tried to integrate it into a broader framework).

The July 2015 nuclear agreement removed a barrier to dialogue with Iran. Today, including Iran in discussions about other regional security issues has become possible, as seen in the late-2015 rounds of talks on Syria. But the immediate impact of the agreement on the state of regional relations has not been positive. Some Gulf Arab states, worried by the perceived added credibility that the nuclear deal gives to Iran, have doubled their efforts to counter the Islamic Republic's influence in the region. This type of behaviour is likely to continue and can only be resolved by encouraging intra-regional dialogue.

## 5. Conclusions

The 14 July 2015 JCPOA addresses one of the longest running and contentious crises in international relations. After the collapse of the shah's government, international cooperation with Iran on its civilian nuclear programme was cut off. In 2002 revelations emerged that Tehran had developed its programme in ways that made the international community nervous. As a result the E3 spearheaded negotiations with Iran that lasted more than a decade in various formats. The final push for the nuclear agreement began shortly before President Rouhani was elected in June 2013. A number of factors helped the negotiations to fruition. President Obama's election in November 2008 led to a shift in US policy whereby US officials were allowed to have direct contact with their Iranian counterparts. The P5 + 1 also saw their goals change: initially, they insisted on an end to uranium enrichment while imposing sanctions, but in 2012 this policy shifted to containing

Iran's nuclear programme and using sanctions relief as leverage in the negotiations. Finally, the 2013 election of President Rouhani resulted in a change in the makeup of the Iranian negotiating team and, consequently, in the tone of the talks. What the previous conditions failed to deliver the new constellation allowed, enabling the P5+1 and Iran to agree to the JCPOA in July 2015.

The nuclear deal rolls back and restricts Iran's nuclear programme, and outlines detailed verification and implementation measures to prevent any development of nuclear weapons in exchange for comprehensive sanctions relief and peaceful nuclear cooperation. The agreement addresses both available routes to nuclear weapons – enriched uranium and plutonium – and tackles both “breakout” capabilities and “sneak-out” risks. Constraints on Iran's nuclear programme will last between ten and 15 years, but others, including Iran's adherence to the Additional Protocol, are permanent. The JCPOA also establishes the most intrusive verification system to date, which, combined with the restrictions, will help the IAEA determine the peacefulness of Iran's nuclear programme. While until now both the P5+1 and Iran have taken steps to implement the deal in a timely way, it remains to be seen whether this will continue. Should issues arise, the JCPOA outlines robust enforcement and fair and timely dispute resolution mechanisms to tackle them.

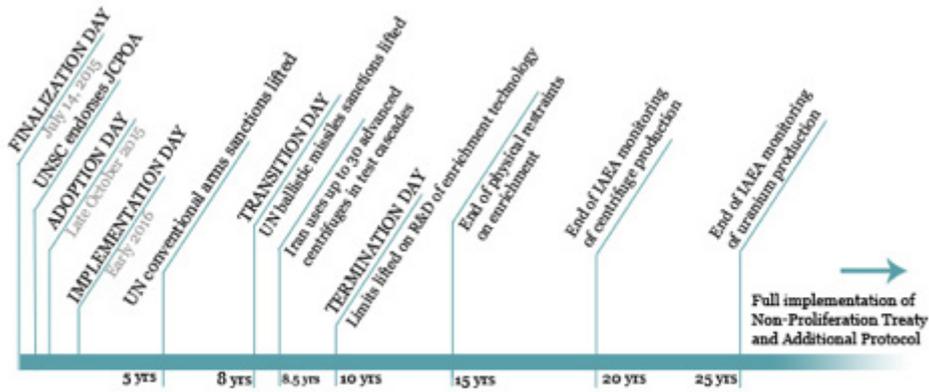
Three main lessons emerge from the successful conclusion of the JCPOA on Iran's nuclear activities.

The first lesson is that a sensitive issue such as Iran's nuclear programme, which involves factors such as national prestige, ideology, religion, and economic and strategic interests is more likely to be affected by domestic politics than “technical” issues. In a cartoon published during the final phase of the negotiations US Secretary of State John Kerry and his Iranian counterpart were depicted as exerting most of their efforts trying to convince the conservatives in their respective countries that the negotiated deal was a good one. In the US, the Iranian nuclear file took on a partisan political dimension. It became a major component of the Republican opposition to the Obama administration, energized by the Israeli government's lobbying. In Iran, the Rouhani administration had to convince hardliners that he had not sold the country's technical prowess out in the final agreement. In both cases forces hostile to any rapprochement between Iran and the West have not and will not give in. They will continue to scrutinize the implementation of the JCPOA and seize any pretext to question its legitimacy or hamper its operation.

The second lesson of the Iran deal is that no nuclear proliferation crisis can be addressed without careful consideration and full understanding of the regional context. As we have attempted to recall, the origins of the Iranian effort to develop a nuclear programme date back to the perception of betrayal by Iran's former Western partners after the Islamic

Revolution. This was especially the case during the Iraq-Iran war, when Saddam Hussein's Iraq attacked Iran's civilian nuclear reactor, used chemical weapons against Iran and began developing its own nuclear weapon programme. Similarly, the perception of Iran's hegemonic or aggressive behaviour by Israel (confronted with existential threats)<sup>87</sup> or the Gulf Arab States, nurtured by Tehran's support for anti-Sunni proxies, could only aggravate the tensions and make any negotiated solution more difficult. This regional dimension and such threat perceptions must be tackled if the Middle East is ever to become a zone of peace, free of WMD. As a US scientist put it, "perception is awareness shaped by belief"<sup>88</sup> – a definition perfectly suited to the Middle East.

The third lesson is that the process demonstrated that the only realistic and effective way to achieve a sustainable solution to such a complex issue is patient but firm efforts in diplomatic engagement and dialogue. While parallel pressures, such as sanctions, covert cyber attacks, targeted killings or even threats of military strikes may have to a certain extent been effective in bringing Iran to the negotiating table, a final agreement was only possible once both parties realized it entailed a necessary compromise and a win-win solution. Additionally, the P5+1 also understood that sanctions not only missed their real "targets" (by failing to force Iran to change its policy) and unintentionally affected Iran's civilian population, but also had counterproductive effects in strengthening the country's domestic self-reliance (in terms of centrifuges and missile technology). This is why, paradoxically, the only value left to sanctions was the leverage of their removal. Finally, while the negotiations included all the official nuclear-weapons states, which are also permanent members of the UNSC and may have opposing interests, the successful conclusion of the JCPOA can be shown as an example of cooperative security. This achievement should inspire future disarmament and non-proliferation discussions in light of "the need for further progress in diminishing the role of nuclear weapons in security policies" recognized by the NPT states parties.<sup>89</sup>



Note: "Implementation Day" was on 16 January 2016.

Source: S. Smith and Q. Jurecic, "A Comprehensive Timeline of the Iran Deal", Lawfare, 21 July 2015, <<http://www.lawfareblog.com/comprehensive-timeline-iran-deal>><sup>90</sup> (reproduced here with the kind permission of the publishers)

This bibliography supplements the material referred to in the footnotes.

## Selected bibliography

### Chronology

International Atomic Energy Agency, “IAEA and Iran: Chronology of Key Events” (regularly updated),  
 <<http://www.iaea.org/newscenter/focus/iran/chronology-of-key-events>>.

### Books/reports

Bruno, G., Iran’s Nuclear Program, Council of Foreign Relations, 10 March 2010.  
 Katzman, K. and P.K. Kerr, Iran Nuclear Agreement, CSR Report, Congressional Research Service, 7-5700, 30 July 2015,  
 <<http://fas.org/sgp/crs/nuke/R43333.pdf>>.

### Articles

Ahmad, A. et al., “A Win-win Solution for Iran’s Arak Reactor”,  
 Arms Control Today, 1 April 2014,  
 <[http://www.armscontrol.org/act/2014\\_04/A-Win-Win-Solution-for-Irans-Arak-Reactor](http://www.armscontrol.org/act/2014_04/A-Win-Win-Solution-for-Irans-Arak-Reactor)>.

Center for Strategic and International Studies, Middle East Program,  
 “Where Do We Go from Here? The World after the Iran Deal”, summary, Gulf Roundtable Series, 25 September 2015,  
 <<http://csis.org/files/attachments/GRT%20Summary%20Iran%20Burns%20Nasr.pdf>>.

Einhorn, R., “Iran’s Heavy-water Reactor: A Plutonium Bomb Factory”,  
 Arms Control Association, 9 November 2006,  
 <[http://www.armscontrol.org/pressroom/2006/20061109\\_Einborn](http://www.armscontrol.org/pressroom/2006/20061109_Einborn)>.

Esfandiary, D.C. and C. Walrond, Performance of the IR-1 Centrifuge at Natanz,  
 ISIS Reports, 18 October 2011,  
 <<http://isis-online.org/isis-reports/detail/test1/8>>.

Finaud, M., “The Geneva Accord on Iran’s Nuclear Programme: Historic Chance or Historic Mistake?”, GCSP editorial, 29 November 2013,  
 <<http://www.gcsp.ch/News-Knowledge/Global-insight/The-Geneva-Accord-on-Iran-s-Nuclear-Programme-Historic-Chance-or-Historic-Mistake>>.

Hibbs, M., “U.S. in 1983 Stopped IAEA from Helping Iran Make UF<sub>6</sub>”,  
 Nuclear Fuel, Vol.28(16), 4 August 2003.

Kimball, D.G., “Building on the Iran Deal”, Arms Control Today, October 2015,  
 <[http://www.armscontrol.org/ACT/2015\\_10/Focus/Building-on-the-Iran-Deal](http://www.armscontrol.org/ACT/2015_10/Focus/Building-on-the-Iran-Deal)>.

Lewis, J., “It’s a Damn Good Deal”, Foreign Policy, 14 July 2015,  
 <<http://foreignpolicy.com/2015/07/14/its-a-damn-good-deal-iran-nuclear-agreement-joint-comprehensive-plan-of-action/>>.

### **Official documents**

European External Action Service,  
 “Official Document among [the P5+1 and Iran] for Collaboration in Furtherance of the Project for Modernization of the Reactor at Arak”, 13 November 2015,  
 <[http://eeas.europa.eu/statements-eeas/docs/151122\\_arak\\_official\\_document\\_en.pdf](http://eeas.europa.eu/statements-eeas/docs/151122_arak_official_document_en.pdf)>.

International Atomic Energy Agency, Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran, GOV/2011/65, 8 November 2011,  
 <<http://www.iaea.org/sites/default/files/gov2011-65.pdf>>.

International Atomic Energy Agency, Implementation of NPT Safeguards Agreement and Relevant Provisions of the Security Council Resolutions in the Islamic Republic of Iran, GOV/2015/34, 29 May 2015,  
 <<http://www.iaea.org/sites/default/files/gov-2015-34.pdf>>.

International Atomic Energy Agency, “IAEA Director General’s Statement and Road-map for the Clarification of Past and Present Outstanding Issues regarding Iran’s Nuclear Program”, statement by IAEA director general Yukiya Amano, 14 July 2015,  
 <<http://www.iaea.org/newscenter/statements/iaea-director-generals-statement-and-road-map-clarification-past-present-outstanding-issues-regarding-irans-nuclear-program>>.

## Geneva Papers – Research Series

- No.1 – 2011 G. P. Herd, “The Global Puzzle: Order in an Age of Primacy, Power-Shifts and Interdependence”, 34 p.
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- No.18 – 2016 Dina Esfandiary and Marc Finaud, “The Iran Nuclear Deal: Distrust and Verify ”, 44 p.

## Endnotes

1. US Department of State, “Joint Comprehensive Plan of Action”, 14 July 2015, <<http://www.state.gov/e/eb/tfs/spi/iran/jcpoa/>>.
2. D. Esfandiary, “Assessing the European Union’s Sanctions Policy: Iran as a Case Study”, EU Non-Proliferation Consortium Non-Proliferation Papers No. 34, December 2013, <<http://www.nonproliferation.eu/web/documents/nonproliferationpapers/dinaesfandiary52b41ff5cbaf6.pdf>>.
3. For more on understanding Iranian suspicions of the West, see D. Esfandiary and A. Tabatabai, “Meeting Iran’s Nuclear Fuel Supply Needs”, Bulletin of Atomic Scientists, 5 June 2014, <<http://thebulletin.org/meeting-irans-nuclear-fuel-supply-needs7224>>.
4. Treaty on the Non-Proliferation of Nuclear Weapons, signed on 1 July 1968, entered into force 5 March 1970, <<http://www.cfr.org/nonproliferation-arms-control-and-disarmament/nuclear-nonproliferation-treaty/p8437>>.
5. Meier, “Iran and Foreign Enrichment: A Troubled Model”, Arms Control Today, 1 January 2006, <[http://www.armscontrol.org/act/2006\\_01-02/JANFEB-IranEnrich](http://www.armscontrol.org/act/2006_01-02/JANFEB-IranEnrich)>.
6. Central Intelligence Agency, “Prospects for Further Proliferation of Nuclear Weapons”, Special National Intelligence Estimate, SNIE 4-1-74, 23 August 1974, <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB240/snie.pdf>>.
7. D. Linzer, “Past Arguments Don’t Square with Current Iran Policy”, Washington Post, 27 March 2005.
8. W. Burr (ed.), “U.S.-Iran Nuclear Negotiations in 1970s Featured Shah’s Nationalism and U.S. Weapons Worries”, Nuclear Vault, Washington, DC, George Washington University, 13 January 2009, <<http://nsarchive.gwu.edu/nukevault/ebb268/>>.
9. M. Hibbs, “U.S. in 1983 Stopped IAEA from Helping Iran Make UF6”, Nuclear Fuel, Vol.28(16), 4 August 2003.
10. G. Porter, “Argentina’s Iranian Nuke Connection”, Asian Times, 15 November 2006.
11. C. Walrond, “Timeline 1967-1993: Argentine Low Enriched Uranium at Tehran Research Reactor”, Institute for Science and International Security, 7 October 2009.
12. International Institute of Security Studies, “A.Q. Khan and Onward Proliferation from Pakistan”, in Nuclear Black Markets: Pakistan, A.Q. Khan and the Rise of Proliferation Networks – A Net Assessment, 2 May 2007, <<https://www.iiss.org/en/publications/strategic%20dossiers/issues/nuclear-black-markets-pakistan--a-q-khan-and-the-rise-of-proliferation-networks--a-net-assessment-23e1>>.
13. Z. Laub, “International Sanctions in Iran”, CFR Backgrounder, Council of Foreign Relations, 15 July 2015.
14. All citations from IAEA documents related to Iran can be retrieved at <<https://www.iaea.org/newscenter/focus/iran/iaea-and-iran-iaea-reports>>.
15. P. Taylor and L. Charbonneau, “EU Big Three Offered Iran Carrot for Nuclear Deal”, Reuters, 19 September 2003.
16. O. Meier, “European Efforts to Solve the Conflict over Iran’s Nuclear Programme: How Has the European Union Performed?”, Non-Proliferation Papers No. 27, February 2013.
17. N. Dombey, “The Deal with Iran”, LRB blog, 29 July 2015.
18. M. Fitzpatrick, *The Iranian Nuclear Crisis: Avoiding Worst-case Outcomes*, Oxford, Routledge, 2013, pp.23 ff.

19. All citations from EU documents related to the Iranian nuclear programme can be retrieved at [http://eeas.europa.eu/iran/index\\_en.htm](http://eeas.europa.eu/iran/index_en.htm).
20. O. Meier, "European Efforts to Solve the Conflict over Iran's Nuclear Programme: How Has the European Union Performed?", Non-Proliferation Papers No. 27, February 2013.
21. Arms Control Association, "History of Official Proposals on the Iran Nuclear Issue", Fact Sheets & Briefs, January 2014, [http://www.armscontrol.org/factsheets/Iran\\_Nuclear\\_Proposals](http://www.armscontrol.org/factsheets/Iran_Nuclear_Proposals).
22. Ibid.
23. All references to or citations from UNSC resolutions related to the Iranian nuclear programme can be retrieved at <http://www.securitycouncilreport.org/un-documents/iran/>.
24. *Pravda*, "I Officially Announce that Iran has Joined the World's Nuclear Countries", Ahmadinejad", 11 April 2006.
25. Associated Press, "Iran President: We Won't Retreat 'One Iota'", 14 April 2006.
26. Institute for Science and International Security, "Islamic Republic of Iran's Response to the Package Presented on June 6, 2006", <http://www.isis-online.org/publications/iran/iranresponse.pdf>.
27. Arms Control Association, "Iran Proposal 13 May 2008", Documents, 2008.
28. D. Möckli and A. Hauri, "Iran Nuclear Crisis: Status and Options", *CSS Analyses in Security Policy*, Vol.3(43), November 2008.
29. Arms Control Association, "Iran Non-paper 19 July 2008", Documents, 19 July 2008.
30. IRNA, "Jalili Returns Home from Geneva", 21 July 2008.
31. P. Crail, "Iran not Receptive to Revised Nuclear Proposal", *Arms Control Today*, 2 September 2008.
32. P. Crail, "World Powers Invite Iran to Talks", *Arms Control Today*, 8 May 2009.
33. Iran Watch, "Package of Proposals by the Islamic Republic of Iran for Comprehensive and Constructive Negotiations", 9 September 2009.
34. Arms Control Association, "History of Official Proposals on the Iranian Nuclear Issue", Fact Sheets & Briefs, January 2014, [http://www.armscontrol.org/factsheets/Iran\\_Nuclear\\_Proposals](http://www.armscontrol.org/factsheets/Iran_Nuclear_Proposals).
35. C. Lamb et al., "Unlocking Iran's Nuclear Secrets: The Latest Revelations about Tehran's Uranium Programme Have Raised Fears that there Are More Hidden Plants", *The Times* (London), 27 September 2009.
36. P. Crail, "Iranian Response to LEU Fuel Deal Unclear", *Arms Control Today*, 5 November 2009.
37. Global Security Newswire, "Iran Hints at Possible Acceptance of Uranium Transfer", 26 October 2009.
38. W.G. Dunlop, "Iran Offers to Swap 400 Kilos of LEU on Kish for Atomic Fuel", *Agence France-Presse*, 12 December 2009.
39. Reuters, "Text: Powers Dismiss Iran Fuel Offer before U.N. vote", 7 June 2010.
40. M. Adler, "Why the Istanbul Talks Failed", *The Iran Primer*, Washington, DC, US Institute of Peace, 23 January 2011.
41. European Institute, "Russia in a Multipolar World: Implications for Russia-EU-U.S. Relations", 12 July 2011.
42. *Moscow Times*, "Lavrov Offers 'Step-by-Step' Plan on Iran", 15 July 2011.
43. Associated Press, "Secret US-Iran Talks Cleared the Way for Historic Nuclear Deal", 24 November 2013.

44. B. Slavin, "US, Iran Make Diplomatic History", *Al-Monitor*, 26 September 2013.
45. Arms Control Association, "Timeline of Nuclear Diplomacy with Iran", *Factsheets & Briefs*, October 2015,  
<<http://www.armscontrol.org/factsheet/Timeline-of-Nuclear-Diplomacy-With-Iran>>.
46. J. Rezaian and A. Gearan, "U.S., Europe Lift Some Iran Sanctions under Nuclear Deal", *Washington Post*, 20 January 2014.
47. "The Comprehensive P5+1 Nuclear Agreement with Iran: A Net-plus for Non-proliferation", statement by Nuclear Non-proliferation specialists, 18 August 2015.
48. Defined as the amount of product extracted from a cascade of centrifuges compared to the raw material that goes into the cascade. It is a measure of the centrifuges' performance. See D. Albright and C. Walrond, "Performance of the IR-1 Centrifuge at Natanz", *ISIS Reports*, 18 October 2011.
49. P. Hafesi, "Iranian MPs Propose Bill to Enrich Uranium up to 60 Per Cent", *Reuters*, 25 December 2013.
50. According to the IAEA, a significant quantity is "the approximate amount of nuclear material for which the possibility of manufacturing a nuclear explosive device cannot be excluded. Significant quantities take into account unavoidable losses due to conversion and manufacturing processes and should not be confused with critical masses." Note that this number will fluctuate according to the percentage of HEU and different bomb types. From IAEA, *The IAEA Safeguards Glossary 2001 Edition*, International Verification Series No. 3, June 2002,  
<[http://www-pub.iaea.org/MTCD/publications/PDF/nvs-3-cd/PDF/NVS3\\_prn.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/nvs-3-cd/PDF/NVS3_prn.pdf)>.
51. White House, "The Historic Deal that Will Prevent Iran from Acquiring a Nuclear Weapon", *White House Fact Sheet*, <<http://www.whitehouse.gov/issues/foreign-policy/iran-deal>>.
52. 25 kg, as noted above.
53. For more on this, see A. Vaez, "Missing the Point on Iran's Nuclear Breakout Time", *Al Jazeera America*, 2 March 2015.
54. Arms Control Association, "Section 3: Understanding the JCPOA", 10 August 2015.
55. D. Esfandiary and A. Tabatabai, "Meeting Iran's Nuclear Fuel Supply Needs", *Bulletin of Atomic Scientists*, 5 June 2014,  
<<http://thebulletin.org/meeting-irans-nuclear-fuel-supply-needs7224>>.
56. Heavy-water reactors use unenriched natural uranium as fuel, but deuterium oxide ("heavy water") as coolant and moderator. As a result, significant amounts of weapons-grade plutonium can be chemically extracted from the irradiated natural uranium fuel by nuclear reprocessing. Thus, the materials necessary to manufacture a nuclear weapon can be obtained without any uranium enrichment.
57. A. Ahmad et al., "A Win-win Solution for Iran's Arak Reactor", *Arms Control Today*, 1 April 2014.
58. Unit of the thermal power of a nuclear reactor, as opposed to electric power.
59. The process is outlined in Annex 1 to the JCPOA, under paragraph Q. 78.
60. See D. Albright, "JCPOA: Non-proliferation, Inspections and Nuclear Constraints", testimony before the US Senate Foreign Relations Committee, 4 August 2015.

61. The Joint Commission has eight members : the P5 + 1, plus Iran and the EU. The JCPOA mandates the commission to oversee the procurement channel scheme and serve as a dispute resolution body. It will meet regularly, but can also be convened if an urgent matter needs to be discussed.
62. See Ayatollah Khamenei, "Leader's Remarks on Anti-Iran Sanctions and Yemen Developments", speech, 10 April 2015, <<http://www.leader.ir/langs/en/index.php?p=bayanat&id=13068>>.
63. Co-author's interview with Iranian official, Vienna, November 2014.
64. Except for the arms embargo and restrictions on ballistic missiles. See UN Security Council, Resolution 2231 (2015), S/RES/2231, 20 July 2015, <<http://www.un.org/en/sc/inc/pages/pdf/pow/RES2231E.pdf>>.
65. See US Treasury, "The Comprehensive Iran Sanctions and Divestment Act", Public Law 111-195, 1 July 2010, <<http://www.treasury.gov/resource-center/sanctions/Documents/hr2194.pdf>>.
66. See Annex: Deadlines in the JCPOA.
67. W. Bowen et al., *Living on the Edge: Iran and the Practice of Nuclear Hedging* (forthcoming).
68. The Convention on Nuclear Safety was adopted in Vienna on 17 June 1994 and entered into force on 24 October 1996. As of December 2015 it has 78 states parties and ten signatory states.
69. D. Esfandiary, "Two Tremors in Two Weeks, and Many Questions for Iran", *The National*, 22 April 2013.
70. S.K. Dehghan, "Hassan Rouhani Sworn in as President of Iran, Urging Moderation and Respect", *The Guardian*, 4 August 2013.
71. A. Karami, "Zarif Calls for Talks with Saudi Arabia", *Al-Monitor*, 15 October 2015.
72. For more on how the Gulf Arab countries view Iran and regional relations, and prospects on establishing regional dialogue, see J. Kinninmont, "Iran and the GCC: Unnecessary Insecurity", Chatham House Research Paper, July 2015, <[http://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20150703IranGCCKinninmont.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150703IranGCCKinninmont.pdf)>.
73. *The National*, "Sheikh Khalifa Congratulates Hassan Rouhani on Iran Nuclear Deal", 14 July 2015.
74. J. Solomon and C.E. Lee, "Gulf Arab States Voice Support for Iran Nuclear Deal", *Wall Street Journal*, 3 August 2015.
75. A. Taylor, "Saudi Prince Bandar: The US Nuclear Pact with North Korea Failed. The Iran Deal Is Worse", *Washington Post*, 16 July 2015.
76. B.P. Usher, "Iran Deal could Start Nuclear Fuel Race – Saudi Arabia", *BBC*, 16 March 2015.
77. D. Esfandiary and A. Tabatabai, "Why Nuclear Dominoes Won't Fall in the Middle East", *Bulletin of Atomic Scientists*, 22 April 2015, <<http://thebulletin.org/wby-nuclear-dominoes-wont-fall-middle-east8236>>.
78. Co-author's interview with Iranian official, Berlin, 8 May 2015.
79. J. Psaki, White House spokesperson, White House daily press briefing, 12 February 2015, <<http://www.state.gov/r/pa/prs/dpb/2015/02/237453.htm>>.
80. D. Esfandiary and A. Tabatabai, "Iran's ISIS Policy", *International Affairs*, Vol.91(1), January 2015, <<http://www.chathamhouse.org/publication/iran%E2%80%99s-isis-policy>>.
81. J. Muir, "Syria: Proxy War Heats up as Endgame Inches Closer", *BBC*, 12 April 2013.
82. D. Esfandiary and A. Tabatabai, "Iran's ISIS Policy", *International Affairs*, Vol.91(1), January 2015, <<http://www.chathamhouse.org/publication/iran%E2%80%99s-isis-policy>>.
83. A. MacMillan, "As Iranian Deaths in Syria Rise, Debate Opens at Home", *Agence France-Presse*, 27 October 2015.

84. H. Bastani, "Iran Quietly Deepens Involvement in Syria's War", BBC Persian, 20 October 2015.
85. T. Dvorin, "Report: Iran Pulling Revolutionary Guards out of Syria", Israel National News, 22 December 2015.
86. Tasnim News Agency, "Iran's President: Nuclear Deal Model for Resolving Global Problems", 2 November 2015; see also IRNA, "Nahavadian: Iran Gives Good Model for Dialogue to Resolve Disputes", 22 August 2015.
87. Despite the controversies about the exact wording used by Iran's President Ahmadinejad in a 2005 speech and its translation ("the [Zionist] occupying regime must be wiped off the map"), Israel has consistently interpreted Ahmadinejad's remarks as constituting a military threat.
88. B.H. Lipton, *The Biology of Belief: Unleashing the Power of Consciousness, Matter and Miracles*, London, Hay House, 2011.
89. 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, Doc. NPT/CONF.2010/50 (Vol. I), May 2010, para. 86.
90. See also Center for Strategic and International Studies, "The JCPOA Timeline", <http://csis.org/ppp/index.htm>.



## Abbreviations and acronyms

EU	European Union
GCC	Gulf Cooperation Council
HEU	Highly enriched uranium
IAEA	International Atomic Energy Agency
IS	Islamic State
JCPOA	Joint Comprehensive Plan of Action
JPOA	Joint Plan of Action
LEU	Low-enriched uranium
NPT	Non-Proliferation Treaty
PMD	Possible military dimensions
R&D	Research and development
TRR	Tehran Research Reactor
UF <sub>6</sub>	Uranium hexafluoride
UK	United Kingdom
UNSC	United Nations Security Council
US	United States
WMD	Weapons of mass destruction

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## Where knowledge meets experience

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