

III. Implementation of the Joint Comprehensive Plan of Action

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The Joint Comprehensive Plan of Action (JCPOA) represents a significant breakthrough in international non-proliferation diplomacy. It ended the international crisis over Iran's nuclear programme that had been ongoing since 2002. The JCPOA was negotiated in July 2015 between Iran and the E3/EU+2: three member states of the European Union (EU)—France, Germany and the United Kingdom, known as the E3—as well as the three remaining permanent members of the United Nations Security Council—China, Russia and the United States. The EU facilitated the agreement.

The JCPOA significantly limits proliferation-sensitive nuclear activities and has established an unprecedented international monitoring and verification regime in Iran. It is designed to build confidence that Iran's nuclear programme only serves civilian purposes, allowing it to be 'treated in the same manner as that of any other non-nuclear state party to the [1968 Non-Proliferation Treaty]'.¹

Despite Iran's continued and verified compliance with the JCPOA, the administration of US President Donald J. Trump withdrew from the agreement in May 2018. Later in 2018, the USA reimposed the nuclear-related sanctions that had been routinely waived by both President Trump and his predecessor, Barack Obama, since JCPOA Implementation Day on 16 January 2016. The other parties to the JCPOA have expressed their continued support for the agreement.

Facing growing domestic pressure to cease implementation of the agreement, the Iranian Government appealed to the Europeans to provide guarantees that at least some degree of the sanctions relief that Iran was to receive under the JCPOA could be provided regardless of the extraterritorial impact of the US sanctions. Despite the EU's determination to safeguard the agreement, however, its efforts to preserve these related economic benefits for Iran had little practical impact.

Iran's compliance with its JCPOA commitments

The JCPOA is designed to prevent the production of highly enriched uranium and plutonium—the two 'pathways' to a nuclear weapon. More

¹ Joint Comprehensive Plan of Action (JCPOA), 14 July 2015, Vienna, reproduced as Annex A of UN Security Council Resolution 2231, 20 July 2015. For background see Rauf, T., 'Resolving concerns about Iran's nuclear programme', *SIPRI Yearbook 2016*, pp. 673–88; Rauf, T., 'Implementation of the Joint Comprehensive Plan of Action in Iran', *SIPRI Yearbook 2017*, pp. 505–10; and Erästö, T., 'Implementation of the Joint Comprehensive Plan of Action in Iran', *SIPRI Yearbook 2018*, pp. 337–45.

specifically, the agreement requires Iran to limit its uranium enrichment activities, to cut its stockpiles of enriched uranium and to redesign and rebuild its heavy water reactor in Arak with international support. As part of the JCPOA, Iran also agreed to provisionally apply the Model Additional Protocol to its Comprehensive Safeguards Agreement with the International Atomic Energy Agency (IAEA), thereby accepting stricter IAEA inspections.² Iran's compliance with the JCPOA has been verified by 13 consecutive IAEA reports, four of which were issued in 2018.³

Activities related to heavy water and reprocessing

The decision to redesign the Arak heavy water reactor was linked to concerns about spent nuclear fuel, which could be reprocessed to produce weapon-grade plutonium. The redesign of the reactor specified in the JCPOA minimizes the amount of plutonium it can produce. To further address related concerns, Iran also agreed to ship abroad all the spent fuel produced by the Arak reactor. Iran also committed not to accumulate heavy water beyond its immediate needs (estimated to be 130 tonnes before and 90 tonnes after the commissioning of the redesigned reactor) and to sell any excess heavy water abroad. This practice is to continue until 2030.⁴

Reports issued by the IAEA in 2018 confirmed that Iran was in compliance with these commitments. Iran did not exceed the cap on heavy water.⁵ Nor did it take steps to revert the Arak reactor to its original design. Moreover, the natural uranium pellets, fuel pins and assemblies for the reactor's original design remained in storage.⁶

² A comprehensive safeguards agreement (CSA) between a non-nuclear weapon state and the IAEA places safeguards on all peaceful nuclear activities and all nuclear material on the territory of the state in order to verify that they are not misused for military purposes. Such agreements provide the legal basis for the IAEA's system of nuclear material accountancy, which is designed to verify that a state's declarations of nuclear material subject to safeguards are correct. The 1968 Non-Proliferation Treaty obliges all non-nuclear weapon states parties to conclude a safeguards agreement with the IAEA. Most NPT members have in place a CSA, and many have also accepted an Additional Protocol to their CSA, which is designed to enhance the IAEA's capability to detect and deter undeclared nuclear material or activities. It requires a state party to give the IAEA information on all aspects of its nuclear fuel cycle-related activities and provides the IAEA with new or expanded investigatory powers. For a list of states that have safeguards agreements in force with the IAEA see annex A in this volume.

³ IAEA, 'Verification and monitoring in Iran'.

⁴ Joint Comprehensive Plan of Action (note 1).

⁵ Iran's heavy water stock was between 117.9 and 122.9 tonnes. IAEA, Board of Governors, 'Verification and monitoring in the Islamic Republic of Iran in light of United Nations Security Council resolution 2231 (2015)', Reports by the Director General, 22 Feb. 2018, GOV/2018/7; 24 May 2018, GOV/2018/24; 30 Aug. 2018, GOV/2018/33; and 12 Nov. 2018, GOV/2018/47.

⁶ IAEA, Reports by the Director General (note 5), GOV/2018/7, GOV/2018/24, GOV/2018/33, GOV/2018/47.

Activities related to enrichment and fuel

Under the JCPOA, Iran undertook not to enrich uranium above 3.67 per cent, to keep its stockpile of enriched uranium below 300 kilogrammes and to limit all enrichment activities to a single location in Natanz. These restrictions apply until 2030. Iran also agreed to have no more than 5060 operating centrifuges—about a quarter of pre-JCPOA levels—and to keep all non-operational centrifuges in storage until 2025, to be removed from storage only to replace failed or damaged ones.

The IAEA's 2018 reports confirmed that Iran continued to meet its commitments, and the agency continued to have regular access to all relevant facilities in Natanz and Fordow.⁷ (The latter was converted from an enrichment plant into a nuclear, physics and technology centre as part of the JCPOA.)

Centrifuge research and development, manufacturing and inventory

Based on the JCPOA restrictions, all of the uranium enrichment centrifuges that are currently operational in Iran are so-called first-generation (IR-1) centrifuges.⁸ However, the JCPOA permits Iran to undertake limited research and development (R&D) on more advanced (IR-4, IR-5, IR-6 and IR-8) centrifuges in a manner that does not accumulate enriched uranium. This restriction remains in place until 2025.⁹ According to the IAEA's 2018 reports, Iran's R&D activities continued to be consistent with JCPOA limits.¹⁰

Transparency, Additional Protocol and other issues

In 2018, the IAEA reconfirmed that Iran was continuing to apply the Additional Protocol, and that it was evaluating Iran's declarations under the protocol. Iran continued to permit the IAEA to use online and electronic monitoring techniques and it issued long-term visas for agency inspectors. As before, Iran also allowed the IAEA to monitor that all the uranium ore concentrate (yellowcake) in Iran was being transferred to the uranium conversion facility at Esfahan.¹¹

All the IAEA reports from 2018 noted that the agency had, under the Additional Protocol, gained complementary accesses to all the sites and locations in Iran which it needed to visit. However, the IAEA's May report

⁷ The quantity of enriched uranium in Iran was between 109.5 and 149.4 kilogrammes. In Feb., Iran withdrew 20 IR-1 centrifuges from storage to replace damaged or failed ones installed at Natanz. In Aug. and Nov., it withdrew 34 and 33 centrifuges, respectively, for the same purpose. IAEA, Reports by the Director General (note 5), GOV/2018/7, GOV/2018/24, GOV/2018/33, GOV/2018/47.

⁸ JCPOA (note 1), Annex II.

⁹ JCPOA (note 1), Annex II.

¹⁰ IAEA, Reports by the Director General (note 5), GOV/2018/7, GOV/2018/24, GOV/2018/33, GOV/2018/47.

¹¹ IAEA, Reports by the Director General (note 5), GOV/2018/7, GOV/2018/24, GOV/2018/33, GOV/2018/47.

added that ‘Timely and proactive cooperation by Iran in providing such access would facilitate implementation of the Additional Protocol and enhance confidence’.¹² In the November report, this point was reformulated as ‘Timely and proactive cooperation by Iran in providing such access *facilitates* implementation of the Additional Protocol and *enhances* confidence’.¹³ This change has been viewed as an indication of an improvement in Iran’s manner of cooperation.¹⁴

In January 2018, Iran notified the IAEA of its plan to develop naval nuclear propulsion. President Rouhani had first announced the plan in late 2016, in response to the renewal of the Iran Sanctions Act (ISA) by the USA.¹⁵ The IAEA requested clarification on the related R&D, advising Iran to provide preliminary design information in case it had decided to construct any new facilities related to the plan, as required by modified Code 3.1 of the subsidiary arrangements of its CSA.¹⁶ While the previous version of Code 3.1 only required new facilities to be reported to the IAEA 180 days before feeding nuclear material into them, the modified version requires notification at an early stage. In April, Iran told the IAEA that the planned nuclear propulsion engines would be used for civilian purposes and no new facilities would be involved for the first five years.¹⁷ Iran provided additional information on the plan in May as part of its Additional Protocol declarations.¹⁸

The USA’s decision to withdraw from the JCPOA

After over a year of uncertainty about its commitment to the JCPOA, the USA announced its withdrawal from the agreement on 8 May 2018.¹⁹ President Trump justified the decision in terms of what he saw as the JCPOA’s inadequate limits on Iran’s nuclear programme, as well as its failure to address Iran’s missile development and regional activities.²⁰

Indicating that they did not share this assessment, the other parties responded to the US withdrawal with official statements highlighting their continued commitment to the JCPOA. Federica Mogherini, the EU’s High Representative for Foreign Affairs and Security Policy, noted that the EU ‘would remain committed to the continued full and effective implementation

¹² IAEA, Report by the Director General (note 5), GOV/2018/24.

¹³ IAEA, Reports by the Director General (note 5), GOV/2018/33, GOV/2018/47 (emphasis added).

¹⁴ Davenport, K., ‘Iran continues to meet JCPOA limits, despite sanctions’, Arms Control Association, 13 Sep. 2018.

¹⁵ See Majidiyar, A., ‘Iran’s plan to develop nuclear-powered ships may further escalate Tehran-Washington tension’, Middle East Institute, 17 Feb. 2017.

¹⁶ IAEA, Report by the Director General (note 5), GOV/2018/7.

¹⁷ IAEA, Report by the Director General (note 5), GOV/2018/24.

¹⁸ IAEA, Report by the Director General (note 5), GOV/2018/33.

¹⁹ For more background, see Erästö, *SIPRI Yearbook* 2017 (note 1).

²⁰ The White House, ‘Remarks by President Trump on the Joint Comprehensive Plan of Action’, 8 May 2018.

of the nuclear deal' and voiced particular concern about the reimposition of sanctions.²¹ The E3 expressed 'regret and concern' over the USA's decision, saying that they would 'remain committed to ensuring... the continuing economic benefits to the Iranian people that are linked to the agreement'.²²

European support for the JCPOA appeared to be unaffected by the subsequent souring of relations with Iran over the latter's ballistic missile programme and its alleged assassination plots in France and the Netherlands.²³ Consistent with their previous approach, in 2018 France and the UK joined the USA in condemning Iran's missile activities, describing Iran's medium-range ballistic missile test on 1 December as 'inconsistent' with UN Security Council Resolution 2231.²⁴

Russia was 'deeply disappointed' and 'gravely concerned' about the USA's decision, which it regarded as a 'gross violation' of international law and an indication 'that the US objections to Iran's absolutely legal nuclear activity are nothing but a smokescreen for settling political scores with Iran'.²⁵ China, too, regretted 'the decision made by the US side' and called on 'all relevant parties to assume a responsible attitude... stay committed to the political and diplomatic solution, properly handle differences and come back as soon as possible to the right track of continuing with the implementation of the JCPOA'.²⁶

The President of Iran, Hassan Rouhani, characterized the US withdrawal from the JCPOA as yet another example of its long history of hostility towards Iran. While Iran would continue to implement the JCPOA as long as it served its interests, Rouhani suggested that if the agreement 'serves as only a paper without securing the Iranian nation's interests', the country would be ready to 'start industrial enrichment without any limitation'.²⁷

²¹ European Union External Action Service, 'Remarks by HR/VP Mogherini on the statement by US President Trump regarding the Iran nuclear deal (JCPOA)', Rome, 8 May 2018.

²² Prime Minister's Office, 'Joint statement from Prime Minister Theresa May, Chancellor Angela Merkel and President Emmanuel Macron following President Trump's statement on Iran', Press release, London, 8 May 2018.

²³ Emmott, R., 'EU open to Iran sanctions after foiled France, Denmark plots: Diplomats, Reuters', 19 Nov. 2018.

²⁴ See Permanent Mission of France to the United Nations, 'Remarks to the press by Mr François Delattre, Permanent Representative of France to the United Nations', New York, 4 Dec. 2018; and British Foreign and Commonwealth Office, 'Foreign Secretary statement on Iranian ballistic missile launch', Press release, 5 Dec. 2018.

²⁵ Russian Ministry of Foreign Affairs, 'Foreign Ministry statement on developments around the Joint Comprehensive Plan of Action on Iran's nuclear programme', Moscow, 8 May 2018.

²⁶ Permanent Mission of the People's Republic of China to the UN, 'Foreign ministry spokesperson Geng Shuang's regular press conference', 9 May 2018.

²⁷ 'Televised address to people on JCPOA', Speech by President Hassan Rouhani, Official website of the President of the Islamic Republic of Iran, 9 May 2018.

The reimposed US sanctions and their stated objectives

Following its withdrawal from the JCPOA, the USA reimposed the sanctions that had been waived by executive order every four months between JCPOA Implementation Day and 12 January 2018, when President Trump issued the final such waiver.²⁸ The policy was implemented in two phases in August and November 2018.

The first phase of reimposed sanctions, which was put in place on 6 August, targeted transactions with Iran involving US dollars; gold or precious metals; graphite; raw or semi-finished metals, such as aluminium and steel; coal; software for integrating industrial processes; and the shipping, insurance and automotive industries.²⁹ On 4 November, the USA fully reimposed all the remaining sanctions, targeting Iran's oil sector and its Central Bank.³⁰ It granted temporary waivers to eight major importers of Iranian oil, but the US administration aimed to eventually reduce Iran's oil exports to 'zero'.³¹

According to US Secretary of State Mike Pompeo, the US administration's 'maximum pressure' campaign against Iran was intended to 'starve the Iranian regime of the revenue it uses to fund violent and destabilizing activities' and to convince it 'to abandon its current revolutionary course'.³² In May, Pompeo specified that the USA wanted Iran, inter alia, to stop uranium enrichment; close the Arak heavy water reactor; halt the development and testing of nuclear-capable missile systems; end ballistic missile proliferation; end support for Hezbollah, Hamas and Palestinian Islamic Jihad; and withdraw its forces from Syria.³³ Viewing this list of demands as highly unrealistic, several observers have argued that the underlying US objective is regime change rather than just behavioural change.³⁴

Despite the Trump administration's opposition to the JCPOA, it granted waivers that allowed nuclear cooperation to continue between Iran and the remaining parties to the JCPOA in line with the agreement. More specifically, the USA permitted 'nonproliferation projects at Arak, Bushehr, and Fordow

²⁸ Under the JCPOA, the USA was bound to 'cease the application' of nuclear-related sanctions for 8 years after Adoption Day (18 Oct. 2015) or until the IAEA reached the broader conclusion that all nuclear material in Iran was being used for peaceful purposes, after which the USA would 'seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of' nuclear-related sanctions. JCPOA (note 1), Annex II.

²⁹ US Department of the Treasury, 'Frequently asked questions regarding Executive Order of August 6, 2018, "Reimposing certain sanctions with respect to Iran"', Resource Center, 5 Nov. 2018.

³⁰ US Department of the Treasury, 'Iran sanctions', Resource Center, Updated 5 Nov. 2018.

³¹ China, Greece, Japan, India, Italy, South Korea, Taiwan and Turkey were granted waivers for 180 days. Pompeo, M. R., 'Press availability with Secretary of Treasury Steven T. Mnuchin', US Department of State, 5 Nov. 2018.

³² Pompeo (note 31).

³³ Pompeo, M. R., 'After the deal: A new Iran strategy', Speech at the Heritage Foundation, 21 May 2018.

³⁴ McFaul, M. and Milani, A., 'Why Trump's plans for regime change in Iran will have the opposite effect', *Washington Post*, 30 May 2018.

to continue' in order to ensure 'oversight of Iran's civil nuclear program' and to enhance 'our ability to constrain Iran's program and keep pressure on the regime while we pursue a new, stronger deal'.³⁵ As the USA is no longer participating in JCPOA-related projects, the United Kingdom has reportedly stepped in to fulfil its role in the rebuilding of the Arak heavy water reactor.³⁶

The economic impact of sanctions and perceptions in Iran

Most of the reimposed US sanctions on Iran are extraterritorial—they are designed to restrict economic activity between Iran and the governments, corporations and nationals of third countries. To avoid punitive measures by the US Department of the Treasury, several major foreign companies that had entered the Iranian market after the conclusion of the JCPOA decided to leave the country before US sanctions were reimposed.³⁷ For the same reasons, international banks and investors have also avoided entering the Iranian market.

While domestic factors, such as mismanagement and corruption, arguably also played a role, the threat of US sanctions and their reimposition significantly contributed to a deterioration in the Iranian economy. Iran's growth rate declined in 2018.³⁸ By August, its currency had lost about 80 per cent of its 2017 value.³⁹ Inflation reached pre-2013 levels.⁴⁰ At the same time, there were sharp increases in the price of basic commodities and foods.⁴¹ Combined with other grievances, such as water shortages and power outages, the poor state of the economy sparked further street protests, which had already begun in late 2017 but intensified in 2018.⁴²

The situation put increasing pressure on the Rouhani administration, which was criticized domestically both for having agreed to the JCPOA and for failing to reform the economic and political system.⁴³ An opinion poll published in July 2018 but conducted in January found that the majority

³⁵ US Department of State, Office of the Spokesperson, 'Constraining Iran's nuclear program', Fact sheet, 5 Nov. 2018.

³⁶ 'US Replaced with UK in constructing re-designed Arak heavy water reactor', Mehr News Agency, 22 Aug. 2018.

³⁷ Wald, E. R., '10 companies leaving Iran as Trump's sanctions close in', *Forbes*, 6 June 2018.

³⁸ Hoorozan, 'Making sense of Iran's economy once all US sanctions resume', Atlantic Council, 25 Sep. 2018.

³⁹ Erdbrink, T., 'Protests pop up across Iran, fueled by daily dissatisfaction', *New York Times*, 4 Aug. 2018.

⁴⁰ Estimates of the rate of inflation in Iran vary. The rate was reported as 18% in Nov. 2018 but experts argue that the real figure was as high as 37%. 'Inflation rate at 18.4%: CBI', *Tehran Times*, 26 Nov. 2018; and Friesen, G., 'Iran: Stuck between a political rock and an economic hard place', *Forbes*, 2 Sep. 2018.

⁴¹ Bozorgmehr, N. and Khalaj, M., 'Poor Iranians bear brunt of sanctions as food prices soar', *Financial Times*, 7 Aug. 2018.

⁴² Erdbrink (note 39).

⁴³ Nasserli, L., Motevalli, G. and Shahla, A., 'After sanctions, Iran's economy is nearing a crisis', Bloomberg, 9 Aug. 2018.

of Iranians believed that Iran should respond to a US withdrawal from the JCPOA either by withdrawing itself, or by restarting some of the activities that it suspended as part of the agreement.⁴⁴ Nonetheless, most Iranians suggested that they would support their government's decision to remain in the JCPOA if it deemed this to be in Iran's national interest.

Iran's leaders repeatedly argued that it would remain in the JCPOA as long as this served the country's interests. For example, the Supreme Leader, Ayatollah Ali Khamenei, stressed in August that the JCPOA was 'merely a means for preserving our national interests', which could be 'put aside' if it failed to serve that objective.⁴⁵

Iranian officials have indicated that they expect the EU, in particular, to provide guarantees regarding the continued sale of oil and the preservation of financial channels.⁴⁶ They have also warned that a complete blockade on Iranian oil exports could lead Iran to block oil exports from the Arab Gulf states by closing the Strait of Hormuz. As President Rouhani said in December, 'If the USA wants to stop our oil sales, no oil will be exported from the Persian Gulf'.⁴⁷

European Union efforts to keep the JCPOA intact

The EU sought to take concrete measures to help maintain the JCPOA, despite the US withdrawal. On 16 May, the European Commission published a plan that included updating the 1996 Blocking Statute to protect European companies from extraterritorial US sanctions and authorizing the European Investment Bank (EIB) to operate in Iran.⁴⁸ Although both measures were implemented in August, they had little impact. The EIB concluded that investment in Iran is too risky.⁴⁹ At the same time, the Blocking Statute was widely seen as lacking credibility as it does not include an effective enforcement mechanism.⁵⁰

⁴⁴ Mohseni E., Gallagher, N. and Ramsay, C., *Iranian Public Opinion After the Protests: A Public Opinion Study* (Center for International and Security Studies at Maryland, University of Maryland School of Public Policy: College Park, July 2018).

⁴⁵ 'Negotiating with the US is nonsense!', Speech by Ayatollah Sayyed Ali Khamenei, Official website of Iran's Supreme Leader, 29 Aug. 2018.

⁴⁶ 'Iran still waiting for Europe's guarantees on oil sales, banking: FM Zarif', PressTV, 25 Aug. 2018.

⁴⁷ 'President addressing people in Shahrood City', Speech by President Hassan Rouhani, Official website of the President of the Islamic Republic of Iran, 4 Dec. 2018.

⁴⁸ European Commission, 'European Commission acts to protect the interests of EU companies investing in Iran as part of the EU's continued commitment to the Joint Comprehensive Plan of Action', Press release, Brussels, 18 May 2018.

⁴⁹ de Carbonnel, A. and Emmott, R., 'Exclusive: Under US pressure, EIB balks at EU plan to work in Iran', Reuters, 5 June 2018.

⁵⁰ Although the Blocking Statute prohibits companies from complying with extraterritorial US sanctions and provides legal coverage for those facing related penalties, it cannot compensate for the companies' lost access to the US market. Nor is it backed by a credible enforcement mechanism. Bayer, L., 'EU shield looks flimsy against Trump's Iran sanctions', Politico, 17 July 2018.

In September, the E3 announced a plan to create a so-called Special Purpose Vehicle (SPV) 'to facilitate payments related to Iran's exports (including oil) and imports, which will assist and reassure economic operators pursuing legitimate business with Iran'.⁵¹ The SPV, which was meant to operate like a barter system and was expected to be in place by November, had not been implemented by the end of 2018.⁵²

Conclusions

Despite the USA's withdrawal from the JCPOA and Iranian perceptions that the agreement has not delivered the promised economic benefits, Iran continued to comply with the agreement in 2018. However, the USA's stated goal of reducing Iranian oil exports to zero, in particular, left the JCPOA in a precarious position. While the EU expressed unprecedented determination to take concrete steps to safeguard the agreement, those steps were largely symbolic. The SPV—if put in place in 2019—might provide a more effective response to US sanctions, but its impact would still essentially be about damage limitation. The fate of the JCPOA thus largely depends on the extent to which Iran sees the value of the agreement not merely in economic terms, but also in terms of its contribution to the 'desecuritization' of the country's international image and the normalization of its political relations with the rest of the world.

⁵¹ European Union External Action Service, 'Implementation of the Joint Comprehensive Plan of Action: Joint Ministerial Statement', Joint statements, New York, 24 Sep. 2018.

⁵² Binder, K., 'Special purpose vehicle for trade with Iran', At a Glance, European Parliamentary Research Service, Nov. 2018.