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THE IRANIAN NUCLEAR PROJECT

Introduction

The international community is increasingly concerned about Iranian policies to advance the country's nuclear project.

- The UK, France and Germany (the E3) have expressed concern about Iran's escalating nuclear activities. In a statement from September 2024, said Iranian nuclear policies "significantly harm international security and undermine the global non-proliferation architecture." The E3 also called on the Islamic Republic to 'halt and reverse its nuclear escalation and refrain from making threats to produce nuclear weapons' and return to the limits imposed by the Joint Comprehensive Plan of Action (JCPOA), 'in particular those regarding enrichment.'
- Those warnings followed an IAEA quarterly report which presented worrying information about the Islamic Republic's capacity to build a nuclear bomb. Amongst other things, the August 2023 IAEA report said that "The continued production and accumulation of high enriched uranium by Iran, the only non-nuclear weapon State to do so, adds to the Agency's concerns."
- It comes as the US Office of the Director of National Intelligence (ODNI) latest report to Congress removed a key finding about Iran seeking a nuclear weapon. The ODNI had included a sentence annually since 2019 which stated: "Iran is not currently undertaking the key nuclear weapons-development activities necessary to produce a testable nuclear device." Yet following recent events and nuclear developments in the Islamic Republic, the Office felt it could no longer keep it in.

Is Iran trying to get a bomb?

In order to produce a testable nuclear device, **a country has to enrich large quantities of uranium to weapons grade (90%), create the chain reaction needed to detonate a bomb (weaponisation) and perfect delivery systems**, i.e. to load the uranium on a military device that can create the chain reaction needed to detonate the bomb. This requires knowledge and technical ability, and also components such as accurate detonators. It is estimated that Iran is one to two years away from achieving that objective.

Uranium enrichment

- Based on the IAEA estimate that 25 kg of weapons grade uranium is sufficient to produce one nuclear device, and the data from the recent IAEA report, **Iran now has a very short (and hard to detect) breakout capability**, (the time it would take to produce enough highly enriched uranium for a nuclear weapon) should it ultimately decide to build one.
- The Institute for Science and International Security estimates that the combination of Iran's stockpiles of enriched uranium and its centrifuge capacity **means Iran could produce its first quantity of 25 kg of Weapons Grade Uranium (WGU) in about one week**, using part of its stock of 60% [enriched uranium] and the four advanced centrifuge cascades that made 60%." It adds that this initial breakout "could be hard for the IAEA to detect, if inspectors' access was delayed due to an 'emergency'".
- **Iran could also quickly make enough weapon-grade uranium for many nuclear weapons.** According to the Institute, "These amounts are sufficient for 9 nuclear weapons in one month, 12 in two months, 13 in three months, 14 in four months, and 15 in five months. It continued that "Fordow [an Iranian underground uranium enrichment facility located 20 miles northeast of the Iranian city of Qom] alone could produce enough WGU for 4 nuclear weapons in slightly less than two weeks and enough for a total of 6 in month.."
- **There thus exists a very real danger of breakout.** The Institute's warnings have been echoed by the Biden Administration. Speaking at the Aspen Security Forum in July, US Secretary of State Blinken warned that "Instead of being at least a year away from having the breakout capacity of producing fissile material for a nuclear weapon, [Iran] is now probably one or two weeks away from doing that."
- **Western intelligence agencies unanimously concluded that Iran was on the cusp of 90 percent enrichment capability, (which has no civilian use and is weapons grade).** In November 2022, US special envoy for Iran, Robert Malley, said that Iran was "only a few weeks" away from reaching sufficient fissile enrichment for a bomb, an analysis echoed by UN Security Council, British Ambassador to the UN Barbara Woodward. Iran would need roughly 42 kilograms of 90% enriched uranium for one nuclear bomb. Based on US and Israeli intelligence agency

assessments, the Islamic Republic would need only several weeks to enrich this amount of uranium to 90%.

- However, **despite the reduction in breakout time** and it approaching the 90% threshold, both Israeli and US intelligence estimate it would take Iran between one and two years to build a nuclear warhead capable of forming a ballistic missile.

Nuclear weaponisation

- **Iran is also making worrying progress nuclear weaponisation.** In March 2024, American and Israeli intelligence agencies obtained information “that showed Iranian scientists were engaging in computer modeling and metallurgical research” relevant to nuclear explosive development.
- In early August, **Israeli officials warned that Iran was forging ahead with its plan to build a nuclear warhead**, claiming that Iran has shifted its focus away from uranium enrichment towards obtaining the elements needed to produce the war head with "very concerning actions."
- The intelligence report submitted to Congress in July 2024 concluded that Iran has “**undertaken activities that better position it to produce a nuclear device**, if it chooses to do so,” while underscoring “a notable increase this year in Iranian [officials’] public statements about nuclear weapons.”

Delivery systems

Iran continues to test ballistic missiles in contravention of UN Security Council Resolution 2231.

- In July 2019, **Iran carried out a test on a medium-range Shahab-3 ballistic missile which is widely believed to be capable of delivering a nuclear warhead.** That test was the 7th of either the Shahab-3 or the more advanced Khorramshahr ballistic missile that Iran conducted between 2017-2019.
- Also in 2019, Iran conducted two (failed) satellite launches and a missile explosion before a scheduled satellite launch in late August prevented a third test this year. In mid- August 2019, Iran’s Minister of Communications and Information Technology Mohammad Javad Azari-Jahromi said Iran was preparing to launch a locally built telecommunications satellite named Nahid 1 (Venus 1). The US believes that Iran’s satellite programme is a cover for ballistic missiles development.

- In August 2019, Iran unveiled new precision-guided air-to-air missiles. The new line-up of missiles dubbed the “Yasin,” a smart, guided missile with folding wings that can be fired from a range of 30 miles of its target from manned or unmanned aircraft; the “Balaban”, guided by GPS and sensors and equipped with folding wings which can be mounted under aircraft; and a new series of the “Ghaem”, a heat-seeking missile that can hit within 50cm of a target. These were all developed jointly by the Defence Ministry and Iran Electronics Industries.

History: 2015 - 2022

- Following the signing of the 2015 Joint Comprehensive Plan of Action (JCPOA), until May 2019, the IAEA verified and monitored Iran’s implementation of its nuclear-related commitments in accordance with the modalities set out in the agreement.
- In January 2018, Israeli intelligence seized a set of Iranian files from a Tehran warehouse, which contained new photographic evidence and information that the Islamic Republic had a nuclear weapons programme up until 2003.
- In May 2018, President Trump reinstated US sanctions on Iran in what his administration termed a “maximum pressure” campaign to try and force the Iranian regime to renegotiate a more comprehensive agreement.
- From 8 May 2019 onwards Iran stopped implementing its nuclear-related commitments under the JCPOA on a step-by-step basis.
- By July 2019, Iran breached several JCPOA limits set on its nuclear programme:
 - On 1 July it increased **stockpiles of low-enriched uranium above the 300kg limit;**
 - On 8 July it **increased uranium enrichment from the limit of 3.67 per cent to 4.5 per cent;**
 - On 6 September it activated 20 IR-4 and 20 (more advanced) IR-6 centrifuges (while under the JCPOA Iran was allowed to operate no more than 5,060 IR-1 centrifuges (the oldest and least efficient model) until 2026.
- In 2019 (and 2020) the IAEA visited three undeclared locations where it believed nuclear material had been present - based on evidence from the archive seized by Israel - and environmental samples indicated that processed uranium had been present. Iran did not provide the IAEA with technically credible explanations for

the presence of uranium at those locations.

- In June 2020 (and later in June 2022) the IAEA Board of Governors censured Iran and called on it to cooperate immediately with the investigation, despite Iran having a legal obligation to do so pursuant to its Non-Proliferation Treaty safeguards agreement.
- On 23 February 2021, Iran stopped implementing these protocols altogether, including the Additional Protocol. As a result, Iran has not allowed the Agency to conduct several verification and monitoring activities in relation to the JCPOA.
- The situation was exacerbated in June 2022 by Iran's decision to remove all of the Agency's JCPOA-related surveillance and monitoring equipment.
- In November 2022, Iran announced it had increased enrichment at its Fordow nuclear plant to 60 percent – less than the 90 percent required for the development of a bomb but far in excess of the 3.67 percent cap imposed by the JCPOA.

The Obama Administration and the JCPOA

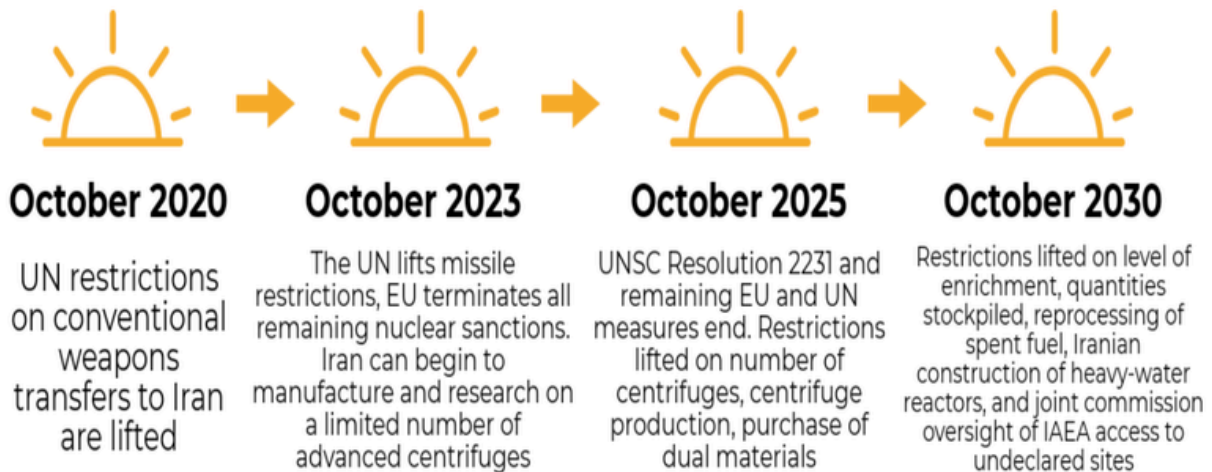
In July 2015, the Obama Administration as part of the P5+1, which included Russia, China, the UK, France and Germany signed the JCPOA with Iran. The agreement provided Iran with sanctions relief in return for Iran reducing its enrichment of uranium and other restrictions.

The main criticism of the deal came under four main areas:

- **Intercontinental ballistic missile programme** - The JCPOA was silent on this issue and the relevant UN Security Council resolution merely “called on Iran” not to do, so Iran was essentially given an opening to develop its intercontinental ballistic missile programme, which could serve for future delivery of nuclear weapons;
- **Inspections** - The lack of IAEA inspections in undeclared sites, especially military sites (though there is a cumbersome mechanism for that in the JCPOA, Iran resisted it and the IAEA has refrained from challenging Iran)
- **Sunset clauses**, which lift most limitations placed on Iran's nuclear programme after 10 to 15 years, thereby allowing it to become a legitimate nuclear threshold state standing at a critical break out point, defined in terms of the technical time required to acquire one bomb's worth of military grade uranium. For example,

limitations on advanced centrifuges will begin to be progressively relaxed from 2023; restrictions on centrifuge production lapse in 2028; constraints on Iran's stockpile of enriched uranium last until 2030.

The JCPOA – Sunset Clauses



- **Regional influence** - The deal did not include Iran's destabilising regional activities.

Iran and the region

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- In addition to its nuclear strategy, **Iran has created and supported well-equipped, well-trained, and fundamentally autonomous and semi-autonomous proxy force in the region.** These include Hezbollah in Lebanon, Hamas and Islamic Jihad in Gaza, and foreign militias in Syria as well as more distant components, the Houthis in Yemen and pro-Iran militias in Iraq.
- The building of proxies is based on a strategy of the late- IRGC Quds Force commander Qassem Soleimani who **sought to establish a so-called "Ring of Fire" surrounding Israel.**
- **Iranian funding of these proxies is estimated at:** \$700m per year to Lebanese Hezbollah; \$100m+ per year to the Houthis in Yemen; up to \$1bn per year to Shia militias in Iraq; and \$100m per year to Hamas and Islamic Jihad in Gaza.



- **Iran has also transferred strategic weapons to these groups.** The Islamic Republic has escalated its proliferation of missile technology, including strategically game-changing precision-guided missile technology to Hezbollah, which poses a grave threat to Israel and neighbouring states, and to the Houthis in Yemen, which threatens the security of the Gulf.

- **The relationship between Iran and these proxies differs from group to group.** In spite of their ideological alignment with Iran, these groups have sometimes demonstrated a degree of independence, or even defied Iran’s wishes. Attacks in the region by these proxies include:
 - Houthis used drones to attack oil processing facilities at Abqaiq in eastern Saudi Arabia in September 2019. The facilities were operated by Saudi Aramco, the country's state-owned oil company;
 - Iranian proxies in Iraq conducted a deadly drone attack in order to assassinate then-Prime Minister of Iraq Mustafa al-Kadhmi, in November 2021, although this attack was unsuccessful;

Drones struck three oil refueling vehicles in an oil refinery for the Abu Dhabi National Oil Company in Musaffah on January 17 2022. A Houthi military spokesman said the group fired “a large number” of drones and five ballistic missiles in the attack. Three civilians were killed and 6 were injured.
 - Drones struck three oil refueling vehicles in an oil refinery for the Abu Dhabi National Oil Company in Musaffah on January 24, 2022, while the UAE Armed Forces intercepted another two ballistic missiles from the Houthis heading towards Al Dhafra Air Base in Abu Dhabi, which also houses US troops.
 - On January 28, an Iranian-made suicide drone struck an American air base in Jordan, killing three US soldiers and injuring dozens; in retaliation, American forces launched a series of reprisal strikes in Iraq and Syria against Iranian proxy forces.
 - Several days later, an American airstrike also killed Abu Baqir al-Saadi, a key commander of the Iran-aligned Kataib Hezbollah militant group in Iraq.
 - Since early 2024 the Houthis have launched a series of attacks on commercial vessels transiting the Bab el-Mandeb adjacent to Yemen.

Iran and the UK

- **Iran projects a direct threat to the UK.** In October 2024, the head of MI5 Ken McCallum said Iran had been behind “plot after plot” in the UK over the past two years. He said that five new Iran-backed plots have been uncovered by MI5 and police in 2024, totaling 20 since the beginning of 2022. McCallum added that Iranian state actors made “extensive use of criminals as proxies”, to try to carry

out threats and intimidation adding that MI5 was alive to the possibility that Iran “could, in principle, try to repurpose” that effort to focus on other targets in the UK if Tehran felt that Britain had become a party to the conflict in the Middle East.

- In November 2022, McCallum publicly revealed that **foiling Iranian assassination attempts had formed much of the security services’ work that year.** “Iran projects a threat to the UK directly, through its aggressive intelligence services”, he said: “At its sharpest this includes ambitions to kidnap or even kill British or UK-based individuals perceived as enemies of the regime. We have seen at least ten such potential threats since January alone.”
- In September 2024, the **UK’s National Cyber Security Centre** and American agencies including the FBI and the Department of the Treasury issued a joint **alert concerning the threat posed by increasing volumes of targeted spear phishing attacks being carried out by threat actors backed by the Iranian government.** It warned that advanced persistent threat (APT) groups working for Iran’s IRGC were observed targeting individuals of interest, in particular those working in areas connected to the Middle East. In December 2018, groups connected to the IRGC carried out a major cyber-attack on British infrastructure which targeted the UK’s local government networks, the Post Office and private sector companies such as banks. In 2017 an attack on the parliamentary network was linked back to Iran.
- Also in September 2024, **the US, UK, France and Germany imposed fresh sanctions on Iran for supplying Russia with ballistic missiles for use in Ukraine.** The measures include restrictions on national carrier Iran Air's ability to fly to the UK and Europe, and travel bans and asset freezes on a number of Iranians accused of facilitating military support for Russia.
- It followed a **British decision to sanction a further 7 individuals and 6 entities who it said “have enabled Iran to conduct destabilising regional activity, including its direct attack on Israel”** in April 2024, after Iran fired over 300 missiles and drones towards Israel, the UK sanctioned.
- In January 2024, **the UK imposed sanctions on individual members of the IRGC’s Unit 840** over plots to assassinate two television presenters from the news channel Iran International on British soil. The government said at the time that

the plot was “just the latest credible reporting of the regime’s attempt to intimidate or kill British nationals or UK-linked individuals, with at least 15 such threats taking place since January 2022”.

- However, despite having imposed over 400 sanctions on Iran, and an April 2023 letter signed by 125 MPs – including more than 90 Conservatives – calling for the IRGC organisation to be proscribed as a terrorist organisation, **the government has refused to take that step, [arguing](#)** that it would reduce the UK’s influence on Iran.
- **It remains to be seen how a change in government will effect British policy.** Before becoming Defence Secretary, John Healey was supportive of proscribing the IRGC. He said proscribing the IRGC was “the leading edge of the threat that Iran poses not just to Israel, but to Arab countries and western interests right across the region. It’s the way that the Iranians sponsor and support violent military militia groups that destabilise the region and threaten other countries as well.”

Iran, Russia and the War in Ukraine

- **Iranian activity of most current concern to US and European officials involves the supply of weapons to Russia for use in its war with Ukraine.** In September 2024, US Secretary of State Blinken confirmed that Russia had received shipments of ballistic missiles from Iran, saying that Russia "will likely use them within weeks in Ukraine against Ukrainians." UK Foreign Secretary Lammy also condemned the transfer of Iranian Fatah-360 ballistic missiles to Russia. "This is a troubling pattern that we are seeing from Iran. It's definitely a significant escalation."
- **The UK, together with France and Germany strongly condemned the transfers** and said they would work toward imposing sanctions on Iran Air as a result. A joint statement described the transfers as an “act is an escalation by both Iran and Russia, and is a direct threat to European security.”
- **Weapons sales, including Mohajer-6 and Shahed-series unmanned aerial vehicles (UAVs), are in violation of a UN Security Council resolution** adopted after the JCPOA, and US officials have assessed that the volume of supply and assistance between Moscow and Tehran now amounts to “a full-fledged defence partnership.” Then UK Foreign Secretary James Cleverly, meanwhile, accused Tehran of “striking sordid deals [with Russia] in a desperate attempt to survive.”

- Ukraine considers Iranian drones a serious threat. In a speech³ to the US Congress on December 21 2022, Ukrainian President Zelensky told American lawmakers that Iranian drones were “a threat to our critical infrastructure. That is how one terrorist has found the other.”
- **Iran has also organised and sponsored terrorism in the UK, Europe and around the world.** The Washington Institute for Near East Policy has compiled a [comprehensive list of Iranian attacks around the world](#). Recent incidents include (amongst others):
 - The IRGC Qods Force Commander Esmail Qaani threatening European Countries that defended Israel from the April Iranian missile attack;
 - The IRGC hiring a fugitive biker gang leader to organize attacks on synagogues in Germany;
 - An IRGC plot against Jews and Israelis in Cyprus that was foiled in June 2023;
 - A threat from IRGC Commander of revenge against French Magazine “Charlie Hebdo” for publishing caricatures of Iranian Supreme Leader Ali Khamenei in January 2023;
 - The recruiting of German-Iranian National to carry out attacks on Synagogues in the Summer 2022.



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For more information please contact:

Richard Pater
richardp@bicom.org.uk