

MENA at the Threshold? Proliferation Risks and Great Power Competition

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This article situates the Middle East and North Africa (MENA) in the global nuclear order, emphasizing how the region has both challenged and spurred adaptations in international nuclear governance for decades. It then examines two pressing contemporary issues: the uncertain trajectory of Iran's nuclear program after Israeli and US military strikes in June 2025, and the anticipated expansion of nuclear energy across MENA, which could also result in more countries with capabilities that would be conducive to pursuing the bomb. Both developments underscore the difficulties of managing nuclear latency in a conflict-prone region, where tensions among local actors inflect nuclear decision-making. While there are opportunities to mitigate these challenges, and principles that policymakers should follow in addressing them, nuclear aspirations are likely to remain a prominent feature of MENA's security landscape so long as underlying tensions between regional actors remain unresolved.

The Middle East and North Africa (MENA) occupy a unique and volatile position within the global nuclear order. At the heart of this dynamic lies a long history of challenges to international nuclear governance, coupled with Israel's status as the region's sole nuclear-armed state and the only MENA country that operates outside the Nuclear Non-Proliferation Treaty (NPT), a position that has both resulted from and contributed to the region's pervasive security dilemmas. Israel's undeclared arsenal; proliferation attempts in states including Iran, Iraq, Libya, and Syria; and regional counterproliferation practices, including kinetic attacks on nuclear infrastructure, have fueled insecurity and motivated latent nuclear ambitions across MENA for generations.

Today, the region faces two nuclear challenges that demand urgent attention from policymakers and scholars alike. First, as this article goes to press in early July 2025, the long-simmering Iranian nuclear crisis appears to be at an inflection point. For years, Iran has been a "threshold state," meaning that it would be

capable of building nuclear weapons relatively quickly if it chose to do so. Efforts to contain the program diplomatically stalled after the United States withdrew from the Joint Comprehensive Plan of Action (JCPOA) in 2018, although talks resumed during the Biden and second Trump administrations. In June 2025, Israel invoked the long-discussed "military option," nominally to prevent Iran from obtaining the bomb, while talks between Washington and Tehran were still ongoing. In addition to striking nuclear sites and personnel, Israel eliminated swaths of the country's military leadership and targeted Iran's ballistic missile program, government institutions, and critical infrastructure. On June 21, the United States also intervened with targeted strikes on Iranian nuclear facilities in Natanz, Isfahan, and Fordow.

The military and political effects of these events are still unfolding, with profound implications for the nuclear landscape in MENA. Key questions include the extent to which kinetic counterproliferation has set back Iran's nuclear capabilities; whether Iranian leaders will dismantle their remaining infrastructure

or doggedly pursue weaponization; and whether the international community can confidently assess that Iran is not covertly reconstituting a nuclear weapons program in the years to come. The reactions of other regional powers will also be important; for example, if Iran crosses the nuclear threshold, Saudi Arabia has vowed to follow suit.

These risks and uncertainties play out against the backdrop of a second challenge, which, while less acute, has implications for regional and global nuclear governance. In recent years, MENA has become a bellwether for the opportunities and complexities of peaceful nuclear cooperation in a period of renewed great power competition. As demand for nuclear energy is increasing globally, countries like the United Arab Emirates, Egypt, and Saudi Arabia are already advancing nuclear energy initiatives that feature varying degrees of transparency and commitment to international safeguards. Competition among US, Russian, and Chinese nuclear suppliers for contracts and influence in MENA will impact the rules and norms that govern the transfer of nuclear technologies worldwide.

The long saga of Iran's nuclear program and the expected growth of nuclear capacity across MENA underscore the difficulties of managing nuclear latency in a conflict-prone region, where nuclear aspirations are deeply implicated in tensions among local actors. The region's history of attempted and (mostly) thwarted proliferation has shaped the global nuclear order and how those within MENA perceive the norms and institutions that comprise it. This fraught legacy, including the mix of diplomacy and coercive efforts to contain Iran's nuclear program, continues to inflect the landscape today, as the uptick in civilian nuclear projects across MENA interacts with gaps in nuclear governance and rising competition among the major nuclear powers in ways that could deepen existing fault lines and contribute to future proliferation crises. While there are opportunities to mitigate these challenges, policies designed to resolve specific issues are unlikely to endure if dynamics that drive fissures within the region and skepticism toward the global nonproliferation regime remain unaddressed.

MENA and the Nuclear Order

The MENA region serves as a microcosm of tensions within the global nuclear order, highlighting

the challenges and adaptations of nuclear governance and the inconsistent application and diffusion of international norms. MENA is distinguished by the lack of universality in NPT membership, an extensive history of clandestine nuclear weapons programs, and uneven implementation of global rules. At the same time, efforts to resolve proliferation crises in the Middle East have spurred innovations in counterproliferation, including the use of military strikes and covert sabotage operations to degrade concerning programs, as well as novel approaches to safeguards, sanctions, monitoring and verification, and multilateral diplomacy.

At least for now, Israel remains the only regional actor to successfully cross the nuclear threshold. It allegedly developed nuclear weapons during the 1950s and 60s, motivated by a perceived existential threat from neighboring Arab states and the desire to deter large-scale conventional attacks.¹ Israel's nuclear arsenal has influenced the way other MENA countries interact with the global nuclear order. Although Israel maintains a policy of deliberate opacity about its nuclear capabilities, their existence is an open secret, and many regional actors view the international community's tacit acceptance as a glaring double standard. That said, despite Israel's abstention, every other MENA state is now a member of the NPT. The dearth of trust among regional actors has made them more reliant on international regimes and institutions to manage nuclear issues, although compliance has been marred by haphazard implementation and violations of varying severity.² Tensions among MENA states have also undermined efforts to develop collective security arrangements that could underpin a more cohesive approach to nonproliferation and nuclear governance at the regional level.³

Outside of Israel, multiple MENA states have explored the nuclear weapons option, with different degrees of intensity and success. For example, Egypt pursued nuclear weapons in the 1960s, but technical challenges and leadership ambivalence led to a shift in focus under President Anwar Sadat, culminating in NPT ratification in 1981.⁴ Iraq has been an NPT signatory since 1969, and though it came close to acquiring nuclear weapons under Saddam Hussein, its weapons program was effectively neutralized after the 1991 Gulf War. Libya spent decades secretly pursuing nuclear weapons, only to voluntarily dismantle its program in 2003 under international supervision. This development was initially seen as a success story, but many governments

1 Avner Cohen, *Israel and the Bomb* (Columbia University Press, 1998).

2 Mohammed Ayoob, "From Regional System to Regional Society: Exploring Key Variables in the Construction of Regional Order," *Australian Journal of International Affairs* 53, no. 3 (November 1, 1999): 247–60, <https://doi.org/10.1080/00049919993845>.

3 Farzan Sabet, "Narratives of the Middle East WMD-Free Zone: Drivers, Themes and Historical Accounts," UNIDIR, 2023, <https://doi.org/10.37559/MEWMDFZ/2023/narratives>.

4 Egypt also concluded a peace treaty with Israel during this period.

have interpreted Libyan disarmament as a cautionary tale since the fall of Muammar Qaddafi in 2011.⁵ Syria's nuclear ambitions, allegedly supported by North Korea, were halted by an Israeli airstrike in 2007.⁶

As these examples illustrate, regional tensions have spurred interest in nuclear weapons and injected volatility into nuclear crises. Prior to the war in Ukraine, "every known military attack on a nuclear installation" had taken place in the Middle East, most launched by other states in the region.⁷ A key actor in this domain has been Israel, which has consistently employed both overt and covert strategies to prevent the emergence of rival nuclear powers in MENA. Notable examples include the assassinations of Iraqi and Iranian nuclear scientists; cyberattacks such as the Stuxnet operation (likely conducted jointly with the United States) on Iran's nuclear infrastructure; and military strikes, including the 1981 destruction of Iraq's Osirak reactor and the 2007 bombing of Syria's suspected plutonium-producing facility at Deir ez-Zor. Nuclear installations have also come under fire during conventional wars, most notably when Iraq attacked Iran's nuclear facilities in the 1980–88 Iran-Iraq War.

Yet if there is ample precedent for using military force against nuclear infrastructure in MENA, the legacy of these efforts is somewhat mixed. Counterproliferation operations against Syria are generally viewed as a success story, while the Israeli strike on Iraq's Osirak reactor both set the program back and encouraged Baghdad to pursue proliferation pathways that would be harder to detect. The full scope of Iraq's reconstituted program only became apparent ten years later, after its defeat in the First Gulf War.⁸

Although militarized counterproliferation tends to attract more attention, past failures to detect covert nuclear weapons programs in MENA have also catalyzed significant reforms to the global nonproliferation architecture, creating new tools to apprehend and reverse illicit weapons programs. For example,

the revelation of Iraq's clandestine nuclear program contributed to the development of the Additional Protocol (AP), a critical evolution in safeguards implementation, which has enhanced the capacity of the International Atomic Energy Agency (IAEA) to detect and deter undeclared nuclear activities.⁹ The First Gulf War also set the precedent for using multilateral sanctions as both carrot and stick in the context of nonproliferation.¹⁰ UN Security Council sanctions played a role in subsequent efforts to manage North Korea's and Iran's nuclear programs.

These developments have not eliminated the risk of secret nuclear weapons programs. Small enrichment and reprocessing facilities remain difficult to detect, and activities associated with weaponization are even harder to perceive.¹¹ The efficacy of enhanced safeguards measures is also contingent upon their universal implementation, a goal that remains elusive in MENA. In some cases, the discovery of covert nuclear activities has advanced efforts to institutionalize nonproliferation norms. For example, in the early 1990s, Algeria—facing pressure from the United States and China—agreed to join the NPT and place a suspicious reactor at Ain Oussera under IAEA safeguards.¹²

Overall, however, regional nuclear dynamics reflect both a reliance on external security guarantees and resistance to external interference. While the UAE has embraced the "gold standard" of nonproliferation—implementing the Additional Protocol and renouncing enrichment and reprocessing (activities that could also produce fissile material for nuclear weapons)—other states remain reluctant. Iran suspended implementation of the AP in 2006 and again in 2021, and Egypt, Syria, and Saudi Arabia have all refused to adopt it or to forgo the option to develop sensitive nuclear technologies.¹³ This uneven approach to safeguards leaves some states with the latitude to pursue nuclear capabilities that could be redirected toward military ends.

5 Malfrid Braut-Hegghammer, *Unclear Physics: Why Iraq and Libya Failed to Build Nuclear Weapons* (Cornell University Press, 2016).

6 Oliver Holmes, "Israel Confirms It Carried Out 2007 Airstrike on Syrian Nuclear Reactor," *The Guardian* (March 21, 2018).

7 Martin B. Malin, "Nuclear Energy in the Middle East? Regional Security Cooperation Needed," Belfer Center for Science and International Affairs, Spring 2017, <https://www.belfercenter.org/publication/nuclear-energy-middle-east-regional-security-cooperation-needed>.

8 Malfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks," *International Security* 36, no. 1 (July 2011): 101–32, https://doi.org/10.1162/ISEC_a_00046; Malfrid Braut-Hegghammer, "Cheater's Dilemma: Iraq, Weapons of Mass Destruction, and the Path to War," *International Security* 45, no. 1 (July 1, 2020): 51–89, https://doi.org/10.1162/isec_a_00382.

9 Laura Rockwood, "Evaluation of the Impact of the Model Additional Protocol on Non-Nuclear Weapon States with Comprehensive Safeguards Agreements," Swedish Radiation Safety Authority, 2018, <https://vcdnp.org/wp-content/uploads/2018/10/201823-evaluation-of-the-impact-of-the-model-additional-protocol-on-non-nuclear-weapon-states-with-comprehensive-safeguards-agreements.pdf>.

10 "Iraq: A Chronology of UM Inspections," *Arms Control Today*, 2002, <https://www.armscontrol.org/act/2002-10/features/iraq-chronology-un-inspections>; Kelsey Davenport, "UN Security Council Resolutions on North Korea," Arms Control Association, January 2022, <https://www.armscontrol.org/factsheets/un-security-council-resolutions-north-korea>.

11 R. Scott Kemp, "The Nonproliferation Emperor Has No Clothes: The Gas Centrifuge, Supply-Side Controls, and the Future of Nuclear Proliferation," *International Security* 38, no. 4 (Spring 2014): 39–78.

12 <https://nsarchive2.gwu.edu/nukevault/ebb228/index.htm>.

13 It resumed implementation under the JCPOA, but suspended it again in 2021, as part of an escalating campaign of noncompliance, following US withdrawal from the agreement.

Immediate proliferation risks in the Middle East—with the notable exception of Iran—appear to have declined in recent decades. The current configurations of nuclear infrastructure in most MENA countries, which primarily consist of research reactors and nascent power programs, would not lend themselves to rapid weaponization.¹⁴ Moreover, the technical and political hurdles to weaponization, including the need to expel international inspectors or withdraw from the NPT, dissuade overt activities. That said, the long-term implications of safeguard gaps and weak regional institutionalization are potentially severe. Tensions among regional powers have long been drivers of proliferation, and deteriorating security conditions, prompted by developments in Iran or intensifying conventional conflict in the region, could make nuclear weapons more appealing, or frustrate efforts to arrest potential proliferation cascades.

Iran's Threshold Status and the Looming Threat of Weaponization

The most acute proliferation risk in MENA today is Iran. The history of Iran's program exemplifies the trend lines and fault lines that define the region's nuclear landscape. Once emblematic of so-called rogue states with clandestine nuclear ambitions, Iran subsequently evolved into a threshold state. Efforts to prevent Iran from crossing that threshold have spurred innovative approaches to both diplomacy and coercion for decades. The trajectory of Tehran's program following military escalation between Iran and Israel as well as US counterproliferation strikes will have significant ramifications for regional stability and MENA's nuclear landscape.

Iran's nuclear program began during the 1950s. Although progress stalled after the 1979 revolution, Tehran embarked on a covert nuclear weapons program in the late 1980s, which remained hidden until the early 2000s. According to US intelligence assessments, Iran suspended its dedicated weaponization program in 2003.¹⁵ By that point, however, it had made significant progress. Initially, Iran lacked the necessary fissile material to build a bomb, but

it steadily addressed that shortfall by expanding uranium-enrichment capabilities semitransparently in subsequent years. After secret enrichment facilities at Natanz and Fordow were revealed in 2002 and 2009, respectively, Iran declared the sites to the IAEA and accepted safeguards. (The NPT does not ban enrichment in non-weapon states, but most countries have concluded it is not cost-efficient.) Although Iranian leaders have long insisted that their nuclear program is exclusively peaceful, estimates of the time it would take for Iran to produce enough highly enriched uranium (HEU) for its first nuclear weapon shrunk as its enrichment program advanced.

Past revelations about Iran's clandestine nuclear facilities, and concerns about its known activities, have triggered attempts to contain its nuclear ambitions, including sanctions, covert actions, and multilateral negotiations.¹⁶ In 2015, diplomatic efforts culminated in the Joint Comprehensive Plan of Action (JCPOA), which featured innovative trade-offs between sanctions relief and verifiable restrictions on nuclear activities, including caps on enrichment levels, significant reductions in enriched uranium stockpiles, and modifications to a reactor that would have been conducive to plutonium production. The JCPOA also required Iran to implement the AP and supplementary monitoring and verification measures that would make it harder to conceal illicit activities.

Although US intelligence assessed Iran to be complying with the agreement, the JCPOA, along with its restrictions and monitoring regime, unraveled after the Trump administration pulled out in 2018.¹⁷ After that, despite Washington's "maximum pressure" sanctions campaign, Tehran significantly advanced its nuclear program. Iran has developed and deployed advanced centrifuges, shrinking the time needed to actualize a decision to proliferate, and in 2021, it became the only nonnuclear weapon state enriching uranium to 60 percent, a short technical step away from weapons grade.¹⁸ Iran also curtailed IAEA monitoring capabilities, reducing international oversight of its obligations under both the JCPOA and its broader Comprehensive Safeguards Agreement.

Iran is not the only state to reach the nuclear threshold. For example, although Japan adheres to

14 Mark Fitzpatrick, ed., *Nuclear Programmes in the Middle East: In the Shadow of Iran*, (International Institute for Strategic Studies, 2008); Eric Brewer, "The Nuclear Proliferation Landscape: Is Past Prologue?," *The Washington Quarterly* 44, no. 2 (June 17, 2021): 181–97, <https://doi.org/10.1080/0163660X.2021.1934250>.

15 Annual Threat Assessment of the US Intelligence Community, Office of the Director of National Intelligence, March 2025, <https://www.dni.gov/files/ODNI/documents/assessments/ATA-2025-Unclassified-Report.pdf>.

16 For background on the JCPOA, see Muhammad Javad Zarif et al., *Rāz-i sar bih muhr: Barjām kūshish-i siturg barā-yi huqūq, amniyat va tawsa'ah-i Irān [The Nuclear Deal: The Untold Story of JCPOA: Protecting Iran's Security, Rights and Development]* (Tehran: Intishārāt-i Ittīl'āt, 2021).

17 Majma'-e Tashkhis-e Maslahat-e Nezam, "Tavaquf-i ta'ahhudāt-i hastah' ī-i Irān, sināryūhā-yi mumkin va tahlil-i āyandah-i barjām [Suspension of Iran's Nuclear Commitments, Possible Scenarios and Analysis of the Future of the JCPOA]" (Dabīrkhānih-i Majma'-i Tashkhuṣ Maslahat-i Nizām, Pizhūhishkadah-i Tahqīqāt-i Rāhburdī, 2019).

18 <https://www.iaea.org/newscenter/statements/iaea-director-generals-introductory-statement-to-the-board-of-governors-4-march-2024>.



its 1967 nonnuclear principles, its vast stockpile of weapons-usable fissile material and development of missile capabilities that could be adapted for nuclear delivery provide it with the option to quickly assemble nuclear weapons.¹⁹ But Iran has presented a thornier challenge, due to the sophistication of its program, its checkered history with the IAEA, and the entanglement of its nuclear ambitions in volatile regional security dynamics. Iran has achieved several crucial steps toward nuclear weaponization, including research on the design and engineering of warheads (as evidenced by past activities), sophisticated delivery systems, and the establishment of the requisite command-and-control infrastructure, primarily within the Islamic Revolutionary Guard Corps (IRGC) Aerospace Force.

Iranian policymakers have also wielded their threshold status as a form of leverage, emphasizing that the only thing standing between them and the bomb is a political decision. As Ali Akbar Salehi, former head of Iran's Atomic Energy Organization, remarked in February 2024: "It's like having all the

parts to build a car: we have the chassis, the engine, the transmission, everything."²⁰ Iranian leaders have periodically invoked the threat of proliferation to deter specific interventions, including strikes on their nuclear facilities and the reimposition of "snapback" sanctions at the UN.

While certain domestic factions have long favored proliferation, Iran's nuclear program has historically played an important, but not exclusive, role in its defense strategy.²¹ After Hamas's brutal attack on Israel in October 2023, shifts in the regional balance of power raised questions about Iran's ability to maintain this ambiguous posture.²² Israeli military operations in 2024 effectively eliminated Iran's ability to project power through proxies like Hamas and Hezbollah, and military exchanges between Israel and Iran damaged the country's air defenses and ballistic missile program. The unexpected collapse of the Assad regime in Syria further circumscribed Tehran's regional clout. Meanwhile, reports indicated that Iranian public opinion was becoming more supportive of nuclear acquisition.²³

These developments spurred debates over whether a weakened Iran would be more bent on proliferation, or more amenable to diplomatic off-ramps.²⁴ In April 2025, Tehran and Washington agreed to bilateral talks, brokered by Oman, to head off the prospects of military escalation.²⁵ In June, however, days before the next round of negotiations, Israel launched extensive strikes against Iranian nuclear and military sites and personnel, triggering Iranian retaliation. The United States eventually joined Israel's counterproliferation campaign, with targeted strikes on three nuclear sites, including the hardened enrichment facility at Fordow.

Israel's decision to use force is consistent with decades of Israeli strategy, but the scope and scale of its June 2025 campaign vastly exceeded past counterproliferation operations. Notably, Israeli strikes were not limited to nuclear facilities, but included military targets and leadership and critical infrastructure. To many observers, the nature of the strikes along with statements from Israeli leaders encouraging the Iranian people to rise up against the regime implied

19 Toby Dalton and Eli Levite, "Iran's Nuclear Threshold Challenge," *War on the Rocks*, May 23, 2024, <https://warontherocks.com/2024/05/irans-nuclear-threshold-challenge/>.

20 Dalton and Levite, "Iran's Nuclear Threshold Challenge."

21 Nicole Grajewski, "Iran Is at a Strategic Crossroads," *Carnegie Endowment for International Peace*, October 3, 2024, <https://carnegieendowment.org/emissary/2024/10/iran-israel-missile-attack-nuclear-strategy-what-now?lang=en>.

22 Ellen Knickmeyer, "US Says Iran Moving Forward on a Key Aspect of Developing a Nuclear Bomb," *AP News*, July 19, 2024, <https://apnews.com/article/iran-nuclear-weapons-sullivan-blinken-2ba2de90dce5047c4a698b2d57a90e4b>.

23 Peyman Asadzade, "A Majority of Iranians Now Favor Possessing Nuclear Weapons. Their Leaders Take Note," *Bulletin of the Atomic Scientists*, June 13, 2024, <https://thebulletin.org/2024/06/a-majority-of-iranians-now-favor-possessing-nuclear-weapons-their-leaders-take-note/>.

24 Richard Nephew, "A Last Chance for Iran," *Foreign Affairs*, January 2, 2025, <https://www.foreignaffairs.com/iran/last-chance-iran>; Ellie Geranmayeh, "Iran Has Every Reason Now to Go Nuclear," *Foreign Policy*, October 24, 2024, <https://foreignpolicy.com/2024/10/24/iran-nuclear-israel-strategy-weapons-missiles-hamas-hezbollah-axis-resistance/>.

25 Andrea Shalal, "Trump Repeats Threat to Use Military Force If Iran Does Not Agree to Nuclear Deal," *Reuters*, April 9, 2025, <https://www.reuters.com/world/trump-repeats-threat-use-military-force-if-iran-does-not-agree-nuclear-deal-2025-04-09/>.

objectives beyond the nuclear program.²⁶ The United States' decision to join this campaign, through limited albeit dramatic strikes on Iranian nuclear infrastructure, has no obvious precedent, although the United States had long threatened military action against Iran's nuclear program. Washington's intervention was followed by a push for diplomacy, with Iran and Israel agreeing to a ceasefire several days later.

The impact of Israeli and American strikes on Iranian nuclear capabilities and intentions remains unclear. While the program has undeniably been degraded, questions persist. In time, Iran could rebuild a nuclear weapons program, especially if it still has access to advanced centrifuges and HEU stockpiles.²⁷ The implications of conflict between Iran and Israel for the regional nuclear landscape also remain to be seen, though Iran's previous strategy of wielding its threshold status as leverage appears to be discredited. Throughout the conflict, other regional powers, especially the Gulf States, who would be vulnerable to Iranian retaliation, have called for diplomacy.²⁸ Further escalation, or a concerted Iranian sprint for the bomb, could destabilize the Middle East and encourage other states to pursue arsenals of their own. Saudi Crown Prince Mohammed bin Salman has repeatedly stated that if Tehran acquires a nuclear weapon, "we will have to get one."²⁹

Great Power Competition and Civilian Nuclear Programs in MENA

Heightened uncertainty about Iranian nuclear capabilities could spur wider interest in nuclear weapons precisely as the expansion of civilian nuclear programs in multiple MENA states might create a more permissive environment for acquiring sensitive technologies. Since 2020, when the UAE brought its first reactor online, MENA has become a locus of intense competition among great powers, who vie for lucrative nuclear contracts and long-term strategic

influence as countries across the globe aim to reduce their reliance on oil and gas, meet clean-energy targets, and project technological prowess. The contours of future nuclear challenges in the Middle East will partly be contingent on which projects come to fruition, what kinds of reactors and fuel cycle facilities states opt to build, and the strings that are (or are not) attached to these programs.

While peaceful nuclear power need not lead to proliferation, MENA's uneven safeguards and the landscape and history of clandestine programs remain potential flashpoints.³⁰ Saudi Arabia and Egypt, for example, have long resisted certain nonproliferation measures, complicating efforts to strengthen global and regional norms. The way nuclear cooperation agreements play out in the Middle East will have implications for the expansion of nuclear programs elsewhere, and for the longevity of institutions like the NPT and the Nuclear Suppliers Group.

Civilian nuclear projects offer external powers a chance to secure long-term leverage over energy policy, technology transfer, and even foreign policy.³¹ Although nuclear exports to the Middle East are not new, the supplier landscape has shifted. The United States, once dominant, has seen its influence diminish, while Russia and China have risen to prominence.³² Competition among nuclear suppliers, and the ability of potential recipients to triangulate among them, could lower the barriers to technology diffusion and challenge the coherence of global nuclear governance.³³ US civil nuclear cooperation agreements—known as 123 agreements—typically require partners to ratify the AP, abstain from enrichment and reprocessing (ENR) activities, implement stringent security measures, and adhere to international nonproliferation treaties and conventions. Erosion of the United States' capacity as a nuclear supplier complicates its ability to leverage peaceful assistance to set global standards for responsible nuclear development. For example, while the UAE signed a 123 agreement with the United States, the

26 Michael Martina and Katharine Jackson, "Netanyahu Says Regime Change in Iran Could Be Result of Israel's Attacks," Reuters, June 15, 2025, <https://www.reuters.com/world/middle-east/netanyahu-says-regime-change-iran-could-be-result-israels-attacks-2025-06-15/>.

27 Richard Nephew, "Can Israel Destroy Iran's Nuclear Program?," *Foreign Affairs*, June 14, 2025, <https://www.foreignaffairs.com/israel/can-israel-destroy-iran-nuclear-program>.

28 Kareem Fahim and Susannah George, "Arab Gulf States Work to Contain Fallout from Israel's Attack on Iran," *The Washington Post*, June 16, 2025, <https://www.washingtonpost.com/world/2025/06/16/israel-iran-conflict-gulf-states/>.

29 Julian Borger, "Crown Prince Confirms Saudi Arabia Will Seek Nuclear Arsenal If Iran Develops One," *The Guardian*, September 21, 2023, <https://www.theguardian.com/world/2023/sep/21/crown-prince-confirms-saudi-arabia-seek-nuclear-arsenal-iran-develops-one>.

30 Nicholas L. Miller, "Why Nuclear Energy Programs Rarely Lead to Proliferation," *International Security* 42, no. 2 (November 1, 2017): 40–77, https://doi.org/10.1162/ISEC_a_00293.

31 Christopher Lawrence, "Normalization by Other Means—Technological Infrastructure and Political Commitment in the North Korean Nuclear Crisis," *International Security* 45, no. 1 (July 1, 2020): 9–50, https://doi.org/10.1162/isec_a_00385.

32 Nicholas L. Miller and Tristan A. Volpe, "The Rise of the Autocratic Nuclear Marketplace," *Journal of Strategic Studies* 46, nos. 6–7 (April 3, 2022): 1–39, <https://doi.org/10.1080/01402390.2022.2052725>.

33 Eliza Gheorge, "Proliferation and the Logic of the Nuclear Marketplace," *International Security* 43, no. 4 (April 2019): 88–127, https://doi.org/10.1162/isec_a_00344.

reactors for its nuclear program were ultimately supplied by South Korea, with limited support from US companies.³⁴

Russia and China, meanwhile, have demonstrated a greater willingness to pursue contracts with countries that have questionable records in nuclear safety, security, and nonproliferation, and to attach fewer strings to those partnerships. Russia's "build-own-operate" model also appeals to Middle Eastern states by offering long-term financing and full project management for large nuclear ventures.³⁵ Egypt is building its first nuclear plant with the Russian state corporation Rosatom, and Russia remains the primary civilian nuclear supplier to Iran. Meanwhile, China is boosting its regional engagement.³⁶ In 2022, President Xi announced plans for deeper cooperation with Gulf countries on nuclear energy, security, and space. This development is already visible in Saudi Arabia, where Chinese scientists are reportedly aiding uranium exploration and have bid on the Kingdom's first nuclear plant.³⁷ Although Riyadh would still prefer partnering with the United States or South Korea for larger projects, the prospect of Chinese or Russian deals gives it greater leverage in negotiations with Washington.

Russia and China's expanding nuclear cooperation in MENA—and the US struggle to balance nonproliferation with commercial and strategic interests—has led recent US administrations to show growing flexibility in order to compete. Saudi Arabia's nuclear aspirations have become a central focus of evolving US policy. Saudi officials have asserted their intention to develop the complete nuclear fuel cycle, including uranium enrichment. During the first Trump admin-

istration (2017–21), officials explored a more assertive nuclear export strategy that would not necessarily require partners to adopt the "gold standard."³⁸ In 2023, reports emerged that the Biden administration was working on an agreement to normalize relations between Saudi Arabia and Israel that might include provisions for a US-operated uranium-enrichment facility on Saudi soil.³⁹ In April 2025, US Secretary of Energy Chris Wright stated that Washington was on the "pathway" to an agreement with Riyadh, and he did not rule out enrichment on Saudi territory.⁴⁰

At this point, the details of any potential arrangements remain highly speculative, and the potential destruction of Iran's enrichment program adds complexity to an already intricate calculus.⁴¹ US officials maintain that any agreement with Saudi Arabia would entail extensive safeguards, whereas refusing to engage might encourage the Kingdom to seek out more permissive suppliers.⁴² In Israel, policymakers appear more apprehensive. As current opposition leader and former Prime Minister Yair Lapid put it: "Israel can't agree to uranium enrichment in Saudi Arabia, because it endangers its national security. . . . It would lead to a regional nuclear arms race."⁴³ While the transparent construction of nuclear reactors, subject to appropriate safeguards, is not generally seen as a major proliferation threat, more states acquiring the capacity to produce fissile material could make it easier for them to actualize weapons ambitions in the future.⁴⁴ If Riyadh starts enriching uranium, it may prompt others like the UAE to follow suit.⁴⁵ Any US-Saudi nuclear deal will therefore face intense scrutiny, both regionally and globally.

34 MENA states have expressed interest in new nuclear technologies, including small modular reactors (SMRs), an area where the United States is making significant investments, but they are not yet available on the global commercial market.

35 Russia offered a \$25 billion loan to Egypt to finance the El Dabaa nuclear power plant, which covered 85 percent of the project cost.

36 Vivian Nereim, "China to Cooperate with Gulf Nations on Nuclear Energy and Space, Xi Says," *The New York Times*, December 9, 2022, <https://www.nytimes.com/2022/12/09/world/middleeast/china-saudi-arabia-gulf-summit.html>.

37 Summer Said, Sha Hua, and Dion Nissenbaum, "Saudi Arabia Eyes Chinese Bid for Nuclear Plant," *The Wall Street Journal*, August 25, 2023, <https://www.wsj.com/world/middle-east/saudi-arabia-eyes-chinese-bid-for-nuclear-plant-e4a56f>.

38 Shannon Bugos, "US Goals Unclear for Saudi Nuclear Deal," *Arms Control Today*, December 2019, <https://www.armscontrol.org/act/2019-12/news/us-goals-unclear-saudi-nuclear-deal>; "Transcript: A New Strategic Approach to Civil Nuclear Cooperation: A Conversation with Christopher Ford," Hudson Institute, February 26, 2019, <https://www.hudson.org/national-security-defense/transcript-a-new-strategic-approach-to-civil-nuclear-cooperation-a-conversation-with-christopher-ford>.

39 Dion Nissenbaum and Dov Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal," *The Wall Street Journal*, Sept. 21, 2023, <https://www.wsj.com/world/middle-east/israel-considers-saudi-arabias-nuclear-program-under-potential-normalization-deal-617ae9bd>.

40 Vivian Nereim, "US Revives Talks with Saudi Arabia on Transfer of Nuclear Technology," *The New York Times*, April 13, 2025, <https://www.nytimes.com/2025/04/13/world/middleeast/saudi-arabia-nuclear-talks-trump.html>.

41 Julian Borger, "Saudis Push for 'Plan B' That Excludes Israel from Key Deal with US," *The Guardian*, May 1, 2024, <https://www.theguardian.com/world/2024/may/01/saudi-us-biden-deal-israel>.

42 Kelsey Davenport, "Saudi Push for Enrichment Raises Concerns," *Arms Control Association*, November 2023, <https://www.armscontrol.org/act/2023-11/news/saudi-push-enrichment-raises-concerns>; Nissenbaum and Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal."

43 Nissenbaum and Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal."

44 Although Egypt has not renounced the option of pursuing ENR activities, its agreement with Rosatom stipulates that Russia will supply fuel for the El Dabaa reactors and assist in managing the used fuel.

45 While the UAE renounced these capabilities, its 123 agreement stipulates that it can reopen negotiations if another regional power secures more generous terms from the United States.

Challenges, Risks, and Recommendations

Intensifying regional tensions—including conflict between an undeclared nuclear power (Israel) and a threshold nuclear state (Iran)—along with efforts to expand civilian nuclear programs in multiple Middle Eastern countries are already altering the nuclear landscape in MENA. These trends have resurfaced existing fault lines and generated new challenges, especially on the question of nuclear latency—that is, technologies, expertise, and infrastructure that would make it easier for a state to pursue nuclear weapons in the future.

Managing contemporary nuclear challenges across the region will not be easy. Trying to prevent Iran from crossing the nuclear threshold remains crucial for regional security and the global nuclear order, but a purely punitive approach risks undermining regional stability and making nuclear weapons more appealing. At the same time, the demise of the JCPOA, which Iran was abiding by, and the sequence of events that has followed, including the scale and scope of Israeli military strikes and American involvement, will likely complicate future nonproliferation diplomacy with Iran and other states. Iranian leaders have not forgotten the fate of regimes in Iraq and Libya that gave up their nuclear programs.

Analysts have long warned that military action might push Tehran toward more aggressive pursuit of a nuclear arsenal. Iran could still act on its periodic threats to withdraw from the NPT and has already said that it will roll back cooperation with the IAEA. Whether now or in the future, Iranian leaders might conclude that acquiring nuclear weapons is the only way to ensure the regime's long-term security, and other governments in the region might reach similar conclusions. Military strikes have set Iran's nuclear program back, perhaps considerably, but they have not eliminated technologies and know-how that would allow it to eventually reconstitute a nuclear weapons program, in ways that might be harder to detect and monitor.

Whatever Iran ultimately decides, questions about its residual capabilities and the potential for clandestine reconstitution will remain salient for the foreseeable future. Previous experience dismantling nuclear programs in Iraq and Libya, both significantly less sophisticated than Iran's, suggest that even if Iran ultimately agrees to back away from the

threshold, this process will be fraught, especially if Iranian officials become uncooperative.

In the years to come, MENA's nuclear landscape is likely to be characterized by considerable uncertainty. The United States and its partners should therefore try to uphold high standards of nuclear safety, security, and safeguards, and support a more coherent and cohesive regional approach to nuclear governance.

Balancing these imperatives will pose challenges. Israeli and American military operations against Iran, including attacks on safeguarded nuclear facilities, have reanimated frustrations about double standards in the nuclear order, although there appears to be at least nominal consensus within the region on the need for de-escalation. Gulf states in particular do not want to be dragged into a regional war. Despite their issues with Tehran, most MENA governments condemned the Israeli attacks and signed a joint statement calling for the establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction and highlighting the "urgent need" for all regional actors to join the NPT—an exhortation that, at present, only applies to Israel.⁴⁶ But these relations remain fragile. Iran's decision to respond to US strikes by launching missiles at an American military base in Qatar, though telegraphed in advance, underscored the live possibility of regional escalation, and likely unsettled neighboring states. Doha eventually played a role in urging Tehran to agree to a ceasefire.⁴⁷

Efforts to restore regional stability, alongside the anticipated expansion of civilian nuclear programs across MENA, might create openings for improved cooperation. Sharing best practices on nuclear safety and security, including how to safeguard reactors against insider and outsider threats, could be mutually beneficial. More ambitious ideas, such as establishing a regional nuclear consortium—something that US and Iranian officials reportedly discussed during the spring 2025 negotiations—are likely off the table until tensions cool, although policymakers could conduct more rigorous feasibility studies on multilateral approaches to the nuclear fuel cycle in the interim.⁴⁸

At the end of the day, any solution to the nuclear challenges in the Middle East remains contingent on the region's broader security dynamics. Policies that seek to reduce immediate proliferation threats are unlikely to achieve enduring success if the underlying geopolitical tensions that drive nuclear

46 "Egypt Among 21 Countries Urging De-Escalation After Israeli Strikes on Iran," *Ahram Online*, June 16 2025, <https://english.ahram.org.eg/NewsContent/1/1234/548076/Egypt/Foreign-Affairs/Egypt-among--countries-urging-deescalation-after-1.aspx>.

47 Andrew England, James Shotter, and Neri Zilber, "How Donald Trump Brokered a Shaky Israel-Iran Ceasefire," *Financial Times*, June 24, 2024, <https://www.ft.com/content/022c8beb-8930-46fb-bdf6-f8059b8d99b1>.

48 Barak Ravid, "Iran Could Accept Nuclear Consortium on Its Soil, Iranian Official Says," *Axios*, June 3, 2025, <https://www.axios.com/2025/06/03/iran-nuclear-consortium-trump-proposal>; Farnaz Fassihi, David E. Sanger, and Jonathan Swan, "US Proposes Interim Step in Iran Nuclear Talks Allowing Some Enrichment," *The New York Times*, June 3, 2025.

weapons ambitions remain unresolved. Ultimately, nuclear challenges in the Middle East are beholden to the region's rivalries, grievances, and simmering conflicts. Until these broader tensions—whether between Israel and its neighbors, Iran and Saudi Arabia, or among other regional powers—are meaningfully addressed, nuclear governance efforts will face significant limitations, and nuclear ambitions will remain a prominent feature of MENA's security landscape. ●

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