



The Nuclear Future of the Middle East

Workshop Summary

May 21-22, 2024

Center for Global Security Research
LAWRENCE LIVERMORE NATIONAL LABORATORY

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On May 21-22, the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory (LLNL) hosted a workshop titled “The Nuclear Future of the Middle East.” This event brought together participants drawn across policy, military, and academia. The workshop examined the nuclear shadows cast over the Middle East, tipping points that increase regional proliferation risks, and deterrence challenges that will emerge if Iran crosses the nuclear threshold.

The discussion was guided by the following key questions:

- What role do nuclear weapons play in the regional security dynamic?
- How stable and durable is the existing nuclear “order” in the Middle East?
- How might it evolve further, for better or worse?
- What policy implications follow for the United States and its allies and partners?

Key take-aways:

1. A clear and coherent view of the nuclear landscape in the Middle East has long been blocked by the prominence of the Iranian nuclear issue and the debate about the Joint Comprehensive Plan of Action (JCPOA). That larger landscape is complex, dynamic, and volatile. A gradual nuclearization of the region is evident. A very different nuclear order may suddenly present itself, with dangerous and far-reaching implications.
2. That landscape is overcast by many nuclear shadows. Shadows include existing nuclear capabilities; past nuclear ambitions by several states; the extended nuclear deterrence provided by the United States to Turkey and, more generally, other allies and partners (and apparently sought by the Saudis); military and political engagement of outside powers like Russia, Pakistan, China, and North Korea; the risk that non-state actors in the region might

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steal or purchase nuclear materials or technologies; and the weakening non-proliferation regime.

3. It is also overcast by many storm clouds. Many states and polities are in crisis, in part because they've been undermined by Tehran. Legacy political institutions have lost credibility and authority. Many conflicts have erupted, both international and domestic. Local balances of power have become dynamic and unpredictable. Radical Islamist extremists remain a force. The United States has disengaged (only to return and then depart again), the major powers have fallen out, rejectionists have grown more powerful, conflict has become more prominent, and compromise has become more difficult. The overall situation is chaotic and ripe for wider war.
4. Whether there is a regional nuclear order is in dispute. Some see nothing but a distribution of nuclear capabilities and options. Others see norms, institutions, and processes, combining regional and global elements. Many doubt the possibility of a nuclear order in the absence of a stable regional or international political order. But there is broad agreement that this order, whatever its form, has become fragile and vulnerable.
5. The potential tipping point is, of course, an Iranian decision to cross the threshold. Iran's nuclear ambitions are fueled by a national strategy aimed at evicting the U.S. from the region, replacing Israel with Palestine, and dismantling the U.S.-led global order. Tehran leads the regional "axis of resistance" and has found a convenient partner in Russia to sow instability, while China and others largely sit on the sidelines.
6. Whether, when, why, and how the leaders in Tehran might choose to cross the nuclear threshold are hotly debated. Its leaders seem to believe that time is on their side, but others in Iran may feel differently should they come to power. Militarization of the capability may be under way. Whether a deal can be put back together by new leadership is doubtful but should not be ruled out.
7. A window of opportunity may exist until the October 2025 deadline, at which time the JCPOA sunset clauses begin to kick in. Once the sunset clauses have passed Iran will be able to do whatever it might wish while proclaiming full compliance with its commitments. But until then, there is some residual bargaining potential in the threat of snap-back sanctions. Another window of opportunity may arrive with the next major leadership transition. Think of these as "nipping points" rather than "tipping points."
8. In a bid to prevent Iran from making good on such a decision, serious consideration will be given to preventive military action. There is a chance that it might be successful in setting Iran back a very long way, and there are precedents of such action in the region. But there is also a chance it would fail. In either case, it would shock the international political system in various ways. At best, it would buy time for new collective measures. The track record of making effective use of such time bought is not encouraging. At worst, it would accelerate a widening and intensification of current conflicts, leading to war or a decision to cross the nuclear threshold.

9. If preventive action is not attempted or fails and leaders in Tehran eventually choose to cross the nuclear threshold, the political choices for the U.S. and its allies and partners are stark: to prepare for a wider preventative war, to try to contain and deter, and to appease and bandwagon with Iran. None are attractive, not least because none is likely to deliver the desired relief from the problem. In terms of military capabilities, they would also have a number of options: to assemble or acquire their own nuclear deterrents, to seek nuclear protection from another, to strengthen their hedge posture and latent nuclear potential, to strengthen their conventional posture, or to pursue other weapons of mass destruction. To not respond is also an option.
10. Thus, erosion of the existing regional nuclear order could take a number of forms: a nuclear tipping point and a cascade of nuclear proliferation in the region; a competition to extend nuclear deterrence between/among various potential providers (e.g., U.S., Pakistan, Russia); more nuclear latency (but not more weapons), perhaps aided by the spread of nuclear energy in the region; and open nuclear competition for strategic advantage by Iran and Israel.
11. Erosion would bring with it increased reliance on deterrence by the U.S. and its allies and partners. Iranian leaders have shown themselves to be willing to run significant risks, but they have also shown themselves to be sensitive to costs. Increased reliance on deterrence implies some further adaptation of the U.S. posture for extending deterrence, both hardware and software. Regional nuclear deployments by the U.S. seem implausible so capabilities would have to be associated with naval forces or long-range delivery systems. New nuclear declaratory policies might be necessary. In the eyes of many in the region, however, the U.S. has largely abdicated its guarantor role and has squandered its credibility as an ally—making recovery of strategic advantage much more difficult and less likely, thus rendering these force design questions moot.
12. A plausible worst case can be imagined: a failure of deterrence, a miscalculation leading to war, and then the eruption of a wider war in the Middle East involving a nuclear-armed Iran in combination with a wider war in Europe involving Russian attacks on NATO members. NATO would feel under intense nuclear pressure and U.S. forces would be stretched thin. In such a circumstance, China might perceive an opportunity to settle the Taiwan issue militarily. Three wars involving the U.S. and its allies and partners facing three nuclear-armed adversaries would be utterly without precedent and pose entirely novel demands on nuclear and extended deterrence. Ensuring effective deterrence is the central requirement for avoiding such a nightmare scenario.
13. If Iran opts to remain at the threshold rather than cross it, the worst case can be avoided, as immediate competitive responses become unnecessary. But this is not the best case. Significant uncertainty would remain, along with fear that Iran would use its new status to coerce others and precipitate risky crises. Latency and hedging would likely increase. The tipping point might not be avoided.
14. Iran is unlikely to make the choice to remain at the threshold in the absence of external pressure. But pressure must be applied with some end goal in mind, and with a sufficient

coalition to provide the necessary amount of pressure. A new strategy is required; so too is a new theory, as the one reflected in the JCPOA is no longer available to us and that international cooperation is unlikely given dynamics between the United States, Russia, and China. Put differently, a deal is not possible without a credible military option; whether that presently exists is also debated.

15. In a period of prolonged nuclear stalemate, new things might become possible. Regime change in Iran and elsewhere might lead to some conciliation and compromise. Existing practices of military restraint might be codified in the form of new regional legal instruments, and then expanded. Moreover, the need to cooperate on common regional and global challenges is real; the need to cooperate for climate and energy security is particularly compelling.
16. To manage these multiple challenges, the U.S. and its allies and partners have many tools—political, diplomatic, military, and economic. But they need to be invested with the required leadership focus and resources, fiscal and otherwise. The troubled non-proliferation regime needs to be buttressed by new mechanisms. Ideally, some new paradigm can be found, perhaps centered on nuclear energy and safeguards in the region. In the meantime, it is important to not let the perfect solution become the enemy of a useful fix. For example, while a weapons of mass destruction (WMD) free zone remains a valuable long-term goal, some compromises are needed to enable near-term benefits.
17. The fate of the non-proliferation regime more broadly is increasingly hostage to developments in the Middle East. Failure to prevent Iran from acquiring nuclear weapons would follow its failure in North Korea. Failure to bring the United Nations Security Council (UNSC) permanent five members (P5) back together on Iran would set to rest any expectation of P5 performance of its duties as a guarantor of the regime. Failure to adapt to new technical factors in the region would reinforce the conviction that it was built for a world now gone.

Panel 1: The Existing Nuclear Shadow(s) over the Region

- What nuclear shadows are being cast? By which actors (both inside the region and out)?
- What impact has this had on regional security behaviors?
- Does the existing “order” merit preservation?

The panel highlighted five categories of nuclear shadows cast over the Middle East. The first shadow is cast by countries in the region with the most capabilities—Israel and Iran. The second is cast by states with past experience pursuing nuclear capabilities and the possibility of latent potential, like Syria, Iraq, Saudi Arabia, Turkey, and the United Arab Emirates (UAE). The third is a shadow cast by outside powers, namely the United States, Russia, China, Pakistan, and North Korea. For instance, the United States has a nuclear declaratory policy with commitment to use nuclear weapons if allies, such as Turkey, are put at risk. The military capabilities and political engagement of outside powers like Russia, Pakistan, China, and North Korea cast a shadow. The experiences of other proliferators (the proliferation successes of India, Pakistan, and North Korea and the bloody ends of Saddam Hussein in Iraq and Muammar Gaddafi in Libya following denuclearization) do as well. The fourth shadow is cast by the risk that extremist non-state actors might steal or purchase nuclear materials, technologies, or weapons and use them for terrorist purposes. The fifth shadow is cast by the weakening nonproliferation regime and near demise of the UNSC as an instrument to sustain nuclear order.

The nuclear shadows cast over the region have affected regional security behaviors going back to the 1960s. For example, nuclear ambitions in the 1960s contributed to the rise of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The threat that regional states would seek to end Israel’s existence led Jerusalem to adhere to a doctrine of kinetic prevention where it used military power to prevent the spread of nuclear weapons in the Middle East. Israel destroyed Iraq’s burgeoning nuclear program in 1981 and Syria’s in 2007. The U.S.-led counterproliferation campaign and the fear of WMD in Iraq, led to U.S. intervention in Iraq in 2003 and the removal of then Iraqi President Saddam Hussein.

The October 7 terrorist attack on Israel by Hamas reinforced the nuclear shadows over the region and continues to impact regional security. The terrorist attack shattered Israel’s perception of deterrence, especially in the realm of early warning detection if Iran is on the precipice of obtaining a nuclear weapon. The failure to prevent the deadliest terrorist attack in the country’s history leaves Israel worried about its security as it faces continued threats from Hamas, Hezbollah, and Iran. Israel would use all military means at its disposal to destroy Iran’s nuclear program; however, it is unclear what a successful operation would look like and if Israel alone has the capabilities to inflict a decisive blow against Tehran’s nuclear facilities. In addition, the prestige of Israel’s intelligence service was severely damaged after October 7, increasing doubts about its ability to monitor Iran’s nuclear program. The use of unilateral military action to solve proliferation issues stems from Israel’s skepticism of treaties like the NPT, which it believes is insufficient to prevent the spread of nuclear weapons.

Participants agreed a nuclear-armed Iran would drastically upset the regional security balance and existing “order.” Three possible scenarios for a nuclear-armed Iran were: 1) Iran will use its nuclear status as a shield, allowing it to pursue a more aggressive proxy strategy in the region, 2)

a nuclear arms race will ensue in the Middle East, cascading from Iran to Saudi Arabia, Egypt, and Turkey, and 3) Iran might provide nuclear weapons to its proxies or other terrorist groups in the region. The military option was discussed alongside a concerted effort to strengthen existing nonproliferation treaties and organizations, or the possibility of the United States providing extended nuclear deterrence to the Middle East allies and/or partners if Iran were to weaponize, giving the region a tangible alternative to proliferation.

Regarding the existing nuclear order, workshop participants discussed possible alternatives to the current dynamics, concluding that the alternatives to the present regional order were not ideal. The four alternatives presented were: 1) strategic nuclear competition between Israel and Iran; 2) a regional nuclear arms race resulting from the cascading effects of Iran crossing the threshold; 3) states' desires to achieve nuclear latency without crossing the weaponization threshold; and 4) competition for extended nuclear deterrence among non-nuclear states in the Middle East. The participants concluded that the security environment in the Middle East is eroding and the potential for escalation is increasing.

Panel 2: The Long Shadow Cast by Iran's Nuclear Ambitions

- What are Iran's plausible alternative pathways forward?
- Which is most likely? Least likely? Why?
- What factors are likely to prove decisive in shaping Iran's future choices? How have the strategic partnership with Russia and the proxy war with the U.S. affected their calculus?

Iran has a dual overt and covert nuclear strategy. Tehran's overt strategy seeks to legitimize its nuclear program, take advantage of the limitations of the verification regime, and leverage the secret parts of its nuclear program. Publicly, Iran continues to accumulate fissile material while simultaneously holding back from 90% enrichment. While the regime continues its pronouncements towards the NPT, its commitments to nonproliferation are superficial as the country's nuclear latency continues to grow. Furthermore, the regime's policies indicate a more aggressive push towards building its nuclear capability without crossing the weaponization threshold, as Iran undermines both JCPOA obligations and International Atomic Energy Agency (IAEA) inspections.

Covertly, the regime is looking at weaponization and integrating its nuclear capability into existing systems while militarizing the program. Iran has accelerated concealment maneuvers to deprive the IAEA of necessary knowledge on its nuclear program while using scientific research and dual-use capabilities as a cover. Additionally, the Islamic Revolutionary Guard Corps' (IRGC's) Nuclear Protection and Security Corps employs a comprehensive active and passive defense of its nuclear facilities. Iran's goal is to limit the effectiveness of any military strike or be able to reconstitute the program if a strike were to cause substantial damage.

Several factors are likely to prove decisive in shaping Iran's future choices. In the short term, factors that could cause Iran to cross the nuclear threshold and weaponize its program include: 1) Iran sensing an opportunity amid intensifying U.S. domestic political preoccupation around the

upcoming presidential elections; 2) a U.S.-Saudi security agreement that results in normalization between Jerusalem and Riyadh; or 3) growing confidence among Iranian leaders due to the lack of push back from advances in its nuclear program, coupled with backing from Russia, distractions from the Israel-Hamas War, war in Ukraine, and a potential for a China-Taiwan crisis.

In the long term, factors that might cause Iran to cross the nuclear threshold include: 1) the succession of Supreme Leader Ayatollah Khamenei, as he has likely resisted crossing the threshold; 2) a direct attack on Iranian soil by Israel or the United States targeting Iranian nuclear facilities; or 3) a full-scale war between Hezbollah and Israel. Iranian nuclear breakout is not a question of means but political will. The panelists surmised that following Khamenei's death, Iran may transform into a more overt military dictatorship with power vested in the IRGC, who will want to cross the nuclear threshold to protect against external forces they perceive as threatening the survival of the fundamentalist regime built after the 1979 revolution. The fall of Saddam Hussein in Iraq and Muammar Gaddafi in Libya have sparked lingering fears that Iran could be next.

The nature of the Iranian regime is critical to understanding its nuclear decision making. Iran's grand strategy seeks to achieve three core objectives: evict the United States from the Middle East; replace the state of Israel with Palestine; and overturn the U.S-led, rules-based international order. The Iranian leadership believes that nuclear security is the key to the regime's survival, with any significant government reform viewed as a steppingstone to collapse like the Soviet Union during the Gorbachev years. However, Khamenei follows a nuclear strategy that prioritizes latency over weaponization, fearing that crossing the threshold will eliminate Iran's operational advantage rather than bolster it. By keeping its nuclear ambitions ambiguous, Iran has flexibility to use the program as a form of deterrence, ratcheting up or scaling back its potential depending on the international response.

Russia continues to provide Iran with assistance in the form of diplomatic support and by shackling IAEA activities. In a crisis scenario, Russia will likely provide Iran with air defense support. There is also a possibility Russia will help Iran on nuclear naval propulsion, including submarine "leasing." Russia benefits from how inherently destabilizing Iran's strategy is towards the Middle East, especially its use of proxies.

On the other hand, China values regional stability and the free flow of energy resources from the Persian Gulf at affordable prices. While there is strategic cooperation between China and Iran, there is no deep affection. China does not want Iran to cross the nuclear threshold, but China is unlikely to lead the charge on this issue. However, if China sees this as a bigger proliferation issue—rather than only an Iran issue—which could affect the proliferation calculus of South Korea and Japan, then China might more strongly oppose Iran's proliferation and might be willing to work with the United States.

Panel 3: Potential Tipping Points, Cascades, and Wildcards

- How might a breakdown of order occur? Are there tipping points other than Iran? What proliferation pathways are possible? Are there wildcards to keep in mind?

- How do developments in other regions affect regional nuclear dynamics, including the Ukraine conflict and developments on the Korean peninsula?
- How would further proliferation impact the likelihood and character of war?

The “nuclear order” in the Middle East is changing and possibly breaking down due to “creeping nuclearization” in the region. Four trends defining “creeping nuclearization” include: 1) Iran’s status as a nuclear threshold state; 2) regional hedging dynamics such as Saudi Arabia’s interest in a domestic enrichment program (likely to match Iran’s fuel cycle capabilities); 3) Iranian statements evoking deterrence that leverage its nuclear latency to its advantage; and 4) Israel’s increasing military sophistication.

The development of an Iranian nuclear bomb was perceived as the main tipping point that could influence other countries in the region to pursue nuclear weapons. However, some participants did not necessarily believe it would automatically lead to a regional proliferation cascade, but it would prompt countries to at least consider either going nuclear, developing hedging capability, or increasing their nuclear latency. Another tipping point concerning Iran was the possibility of a failed attempt at a future comprehensive agreement (akin to JCPOA 2.0), which could trigger proliferation by Iran or others. These tipping points could also be “nipping points” that do not lead to proliferation on their own, but aggravate the situation, increasing the risk of regional proliferation.

Other than Iran, there were two tipping (or “nipping”) points identified. The first was deepening vulnerabilities due to the Israel-Hamas war that could impact the proliferation calculus. Deepening vulnerabilities for Iran include fears of direct attacks from Israel or an augmented U.S. presence in the region. For Israel, it includes heightened vulnerability to Iran’s proxy networks, particularly increased missile and rocket fire from Hezbollah, or fear of additional direct attacks from Iranian soil. The second tipping point was if the United States gave into Saudi Arabia’s demands to build a uranium enrichment facility in Saudi Arabia. Such an agreement could fuel a race for nuclear latency or hedging in the region, and the UAE would likely seek a revision to its 123 Agreement to also obtain enrichment facilities.

If tipping points gave way to nuclear breakout, the likely proliferation cascade following Iran would include Saudi Arabia, Turkey, and Egypt—though participants differed in their assessments on Egypt. In this scenario, proliferation in Saudi Arabia would be mainly driven by security concerns, in Turkey by prestige, and in Egypt by both. However, the “cascade” would not be automatic as time horizons are long, pathways are complex, and the question looms of where countries would get capabilities from.

A few wildcards to keep in mind include leadership after the death of Iranian Supreme Leader Khamenei, domestic unrest and regime instability in Iran, and an unexpected Iranian mad dash to nuclear bombs and weaponization. Khamenei is likely an obstacle to Iran crossing the threshold, because if it did, Khamenei would be essentially ceding power to the revolutionary guards who would likely take control of the bomb. Unrest in Iran, depending on the scale and duration of instability, could create the biggest nuclear crisis since the breakup of the Soviet Union. Wildcards outside of the region include illicit transfers of materials or equipment by Pakistan, Russia, or North Korea.

Geopolitics outside of the Middle East are impacting regional nuclear dynamics. After Russia invaded Ukraine in 2022, Russian-Iranian ties have strengthened as Iran supplies it with missiles and drones. As a result, Russia no longer openly opposes Iran's nuclear program at international fora. Secondly, U.S. strategic competition with Russia and China has influenced the United States to consider building an enrichment facility in Saudi Arabia—a deviation from long-standing U.S. policy. Lastly, U.S. adversaries, namely North Korea, may desire to change the status quo and sell technology to the Middle East to develop nuclear latency as it has done in the past.

The likelihood and character of war if Iran crossed the nuclear threshold would largely depend on how nuclear breakout occurs—if it's an open dash to the bomb, a covert crossing, or weaponization following a strike from the United States and Israel. It will also depend on what formal security guarantees exist between the United States and its allies and partners in the region, namely Israel and Saudi Arabia.

Panel 4: The Broader Political-Military Context

- How have shifts in the regional conventional balance affected the nuclear aspect?
- Are emerging technologies disruptors of deterrence?
- Has the Gaza war affected the region's nuclear future? How?
- Have changes in U.S. domestic politics affected the region? How might future changes affect the region?

American disengagement and rapid technological advancements have contributed to the destabilization of the Middle East. Thirty years ago, the United States was deeply involved in the region, pursuing a policy of dual containment against Iran and Iraq, and engaging in peace processes with Syria, Jordan, Israel, and Egypt. During this period, the military balance was well understood, with Arab states possessing limited conventional power projection capabilities. They relied on U.S. protection, and nuclear proliferation concerns were primarily focused on Iran, with Libya and Iraq also posing threats. While the U.S. still maintains a considerable military presence in the Middle East, the decline in U.S. strategic involvement in the region has created a power vacuum, allowing Iran to expand its influence and project conventional power, supported by a partnership with Russia and, to a lesser extent, China. This shift has raised fears of conflicts reminiscent of those at the beginning of World War II.

The clear understanding of regional power dynamics that existed three decades ago has eroded. Technological advancements, particularly in drones and precision-guided munitions, have transformed military strategies in the region. These capabilities are relatively inexpensive, highly effective, and pose significant challenges to traditional forms of mechanized warfare. The proliferation of ballistic missiles, cruise missiles, and unmanned aerial vehicles (UAVs) is now a critical focus. While there is no clear evidence that these conventional advancements have transformed the nuclear landscape, the emphasis on cyber warfare, artificial intelligence (AI), and hypersonics could shift defense strategies. AI, in particular, might enable Israel to respond

more effectively to threats from Iran. However, despite the critical importance of maritime routes, investment in maritime assets is surprisingly low in the region.

Advancements in conventional military capabilities in the region have made regional power balances uncertain. For example, while Saudi Arabia and the UAE have strengthened their conventional military capabilities, they have yet to be tested in combat. This technological evolution coupled with prevailing uncertainty of military balances has created a precarious situation where both sides of a potential conflict believe they can win, increasing the likelihood of war. An example of this is Iran's launch of more than 300 missiles and drones against Israel, many of which failed or were intercepted. However, Iran is likely to attempt similar actions once they address these shortcomings and will further escalate tensions. The heightened risk of war in turn elevates the threat of nuclear proliferation. As wars become more probable, these countries may feel a stronger incentive to develop nuclear weapons to achieve a sense of security. Although nuclear weapons were not previously deemed necessary, this perception is changing due to the increased likelihood of conflict.

New military capabilities are increasingly benefiting non-state actors, allowing them to engage in armed confrontations in ways that major countries often cannot. These groups can leverage state-level military powers without the associated state-level responsibilities, leading to further destabilization. This advantage has resulted in the rise of "shadow wars," conflicts that occur below the threshold of full-scale armed conflict. Additionally, the growing capabilities of both non-state and state actors pose a significant risk as they could potentially gain the ability to strike the U.S. homeland, complicating U.S. efforts in extended deterrence.

Panel 5: The Changing Role of the Non-Proliferation Regime

- How do developments in the regime and in major power relations impact the management of regional nuclear dangers?
- What more, if anything, can the UNSC and IAEA contribute to the mitigation of proliferation risk in the Middle East?
- How is the rising demand for clean energy likely to impact the regional nuclear problem?
- How can the U.S. balance fuel-cycle requests from nuclear newcomers, like Saudi Arabia, while competing with China and Russia for nuclear cooperation agreements?

The international nuclear order is a vital element of the broader rules-based international order, and it faces immense challenges from a new era of great power competition. Deteriorating relations between the United States and Russia limit the effectiveness of the nonproliferation regime. For example, the 10th NPT review conference in 2022 failed to produce a consensus final document to shore up support for the NPT regime because of tensions between Russia and the United States rooted in Russia's war in Ukraine.

Russia also has been challenging nonproliferation efforts through its role as a member of the UNSC, which is undermining the management of regional nuclear dangers. This year, Russia vetoed a resolution to extend UN sanctions monitoring on North Korea and another resolution that proposed a ban on the use of nuclear weapons in outer space. Russia is also no longer

openly opposing advancements in Iran's nuclear program, as Iran is providing material support to Russia during its war in Ukraine. Additionally, Russia's repeated threats to Ukrainian nuclear power plants raise serious concern for the NPT regime, global nuclear security, and growing global demand for nuclear energy to satisfy climate and low-carbon energy commitments.

Currently, the greatest threat to the NPT regime is the IAEA's growing inability to monitor and verify Iran's nuclear program. Iran de-designated several IAEA inspectors and has restricted the IAEA inspectors' access to nuclear facilities. In turn, the IAEA has lost its continuity of knowledge of Iran's nuclear program, and its ability to verify and monitor the program has collapsed. Iran has attempted to distract from violations by making small concessions and inviting the IAEA Director-General for visits, all while failing to deliver on its IAEA commitments.

The new challenges faced by the nuclear nonproliferation regime are exacerbating many of its longstanding institutional challenges, including noncompliance, limited enforcement mechanisms, and growing tensions among nuclear weapon states. Moreover, IAEA's mandate, staffing, and resources all fall short of what is needed in the face of these new challenges. New challenges include difficulties with verifying the peaceful nature of various nuclear capabilities (e.g., nuclear energy or naval propulsion) and advancements in high performance computing, AI, and advanced manufacturing that could increase proliferation risks by reducing the entry barrier to build a program or complicate detection of a program. The nonproliferation regime will need to find a way to transform to meet changing regional and global security dynamics and adapt to whatever new challenges are presented in the future.

The rising demand for nuclear energy worldwide is exacerbating the regional nuclear problem, especially in the Middle East. Global efforts to decarbonize energy sectors due to climate change, coupled with rising energy demand, have renewed interest in nuclear energy. The rate and scale at which nuclear energy will need to expand globally to support global climate change pledges will burden the existing NPT regime. The growth of nuclear energy will either weaken or strengthen the NPT regime, depending on the IAEA's ability to safeguard the reactors and the host country's ability to protect the reactors from attacks by state and non-state actors. The IAEA will likely find this difficult to do in the Middle East—a region plagued by unstable security dynamics from both state and non-state actors. The true intent of nuclear energy programs in the Middle East is debated. Some believe it is a hedge and cover to develop nuclear capabilities and increase latency, as demonstrated by the desire of some Middle East countries to develop enrichment and reprocessing capabilities.

As the Middle East's desire for nuclear energy grows, great powers are competing to supply nuclear energy technology to the region. Saudi Arabia has made nuclear energy a cornerstone of its future energy plans, as well as possessing a domestic fuel cycle. The United States, China, and Russia are competing to provide nuclear technology to Saudi Arabia and others in the region. In addition, the Nuclear Suppliers Group, an export regime meant to mitigate these issues, is under threat by Russia.

Panel 6: On Stabilizing the Existing Order and Strengthening It

- What are the most promising tools and strategies?
- Is there a role for additional security guarantees and arms sales from the U.S.?
- Is a breakthrough on regional disarmament plausible?
- Would the employment of counter proliferation measures help or hurt?

The international community needs to increase pressure on Iran, and it should use the threat of enacting the snap-back mechanism to compel a better, enduring deal with Iran. If Iran refuses a deal, then snap-back can be used as a form of capacity constraint, reducing money and resources to impact Iran's malign activities. While the snap-back provision is not optimal, it is the best available tool to the international community at the moment. The snap-back provision under UN Security Council Resolution (UNSCR) 2231—the resolution endorsing the JCPOA—expires in October 2025. The snap-back gives the ability to quickly restart a host of UN sanctions if Iran is violating JCPOA, and it only needs to be triggered by one of the signatories to the JCPOA. After UNSCR 2231 expires next year, an entirely new UNSC vote would be needed to develop and enact such UN sanctions against Iran, which is unlikely because of Russia's veto power.

Besides sanctions, the panel emphasized the value and further potential of the IAEA to counter Iranian nuclear proliferation. The United States and its allies would have to increase resources and funds to the IAEA to expand the agency's work on this issue, and they should also consider more cooperation between the IAEA and national intelligence agencies. The United States and its allies should also work with the IAEA to push countries to sign Additional Protocols. The IAEA's work in Ukraine provides a good example that can be used to build support for expanding the agency's funding and mission in Iran. However, the IAEA's pace as well as the effectiveness of the Board of Governors were raised as shortcomings.

The panel questioned the credibility of potential U.S. security guarantees to promote stability due to a lack of demonstrated motivation and interest, especially by the American public. Russia and China might be more willing to be involved, however, neither of the two countries currently have the capacity to do so. The European security engagement in the region is more active than portrayed, but an expansion would be challenging due to preoccupation with Russia and politically difficult to justify due to a lack of public threat perception from the region. An alternative option could be to strategically boost local defense companies in the Middle East, which may also help the region economically and strengthen its strategic independence.

The discussion was skeptical about the plausibility of achieving a breakthrough in regional disarmament. The establishment of a WMD-free zone in the Middle East was viewed as unrealistic, yet having the goal in mind could serve to create a regional cooperation framework and forums for discussion and trust-building. Sub-categories of such a zone, such as test-free or chemical weapons-free zones, were perceived as more realistic, but still challenging. Building support for the Comprehensive Test Ban Treaty (CTBT) in the region would present a difficult narrative considering the United States itself has not ratified it. Instead, efforts should focus on the Missile Technology Control Regime (MTCR).

Considering the uncertain outlook, strategies and tools of counterproliferation must be developed more actively. While political options are limited and kinetic options should remain a last resort, non-kinetic measures (e.g., cyber) should also be considered. Further, Iran's attention should be directed toward possible counterproliferation measures by regional actors, in particular potential proliferation by Saudi Arabia.

Generally, any strategy or tool must carefully consider the political narratives it introduces to ensure its political feasibility and effectiveness. Moreover, accurate intelligence is crucial for selecting and implementing strategies more effectively, which could be facilitated by closer coordination among national intelligence agencies.

Panel 7: The Potential Challenges of Deterring a Nuclear Iran

- As Iran nuclearizes, is it becoming less deterrable?
- If it crosses the threshold, how might its behaviors change? What can outside actors reasonably expect to deter? What not? How might the theological world view of Iran's Shiite leaders shape their nuclear strategy?
- Which actors factor in Tehran's deterrence calculus? How?

As Iran makes advancements in its nuclear program, it is becoming more challenging to deter, especially as Iran's current nuclear capabilities coupled with its ballistic missile capabilities provides Iran with a newfound deterrent. Iran's new nuclear status already affords it the benefits of deterrence against its adversaries. Although Iran has not weaponized its program, it has a robust nuclear program and an evolving long-range strike capability—the main building blocks needed to eventually cross the threshold if desired. Iran has been able to leverage this nuclear deterrent, while also engaging in limited wars, to deter attacks from the United States and Israel. Iran benefits from political hedging and the ambiguity provided by the NPT.

There are several key shortcomings in deterrence strategies surrounding Iran. First, U.S.-led efforts to deter actions that Tehran views as beneficial often fail, as Iran rarely modifies its strategies, and even if it does, only enough to gradually decrease external pressures. Moreover, influencing Iran in matters it perceives as vital to its regime survival can be particularly challenging and costly. Finally, there is a consistent underestimation of the continuity in Iran's foreign policy objectives, which are fundamentally aimed at excluding American influence, suppressing Arab regional powers, and maintaining strict internal control.

Efforts to establish deterrence by punishment can sometimes provoke Iran into escalating conflicts, seeking parity or retribution. In situations where the United States has exerted maximum pressure, Iran has responded by intensifying cyber-attacks, terrorist activities, and missile strikes, further complicating the dynamics of deterrence and escalation. Iran's ability to disrupt sea lanes with Russia's assistance and the escalated use of autonomous drones increases the frequency of attacks without leading to full-scale military engagement. Iran's attacks on U.S. military bases in the region has been the main way its exerted leverage and pressure on the United States. Iran's actions indicate a desire for the eventual removal of U.S. presence from the Middle East.

Detering Iran will require a multifaceted approach to manage a potentially nuclearized Iran. Deterrence is achieved not just through capability, but also through credibility. Maintaining continuous, credible deterrence must be central to U.S. policy towards Iran. This involves both coercing and dissuading Iran from advancing its nuclear ambitions. The United States must present itself as capable of maintaining both deterrence by denial and deterrence by punishment. It is crucial that the U.S. and its allies dissuade Iran from nuclear development at every stage: buildup, breakout, and bomb completion. The elements of time, along with political, financial, and human costs are integral to this strategy. However, deterring a nuclear Iran presents unique challenges, as the path to the current situation has seen numerous failures in deterrence already. Furthermore, predicting when Iran is close to obtaining nuclear weapons will be a difficult task.

Historical instances, such as Iran's use of chemical weapons during the Iran-Iraq War and the transfer of such weapons to Libya, illustrate the potential risks of a nuclear-armed Iran. The possibility of Iran transferring WMD or nuclear technology to state or non-state actors remains a serious concern. A nuclear-armed Iran would also further complicate efforts to restrain Iranian influence over regional proxies. Iran's control over its proxies is not always absolute, leading to unpredictable regional dynamics. A nuclear-armed Iran might increasingly rely on these proxies, complicating U.S. and allied efforts to maintain stability. The best strategy against a nuclear Iran involves overwhelming conventional deterrence, denying any perceived benefits from possessing nuclear weapons, and preventing Iran from achieving a recognized nuclear status.

Panel 8: The Prospects for Additional Extended Deterrence Guarantees from the United States

- Which states in the region might seek U.S. nuclear protection?
- What form might such protection take?
- How feasible is this, militarily and politically?

If Iran crossed the nuclear threshold and weaponized its program, then the United States would have to consider prospects for extended nuclear deterrence guarantees for its regional allies and partners. Panelists weighed arguments supporting and opposing U.S. extended deterrence in the Middle East. Supporting arguments include the need to: 1) deter Iranian armed aggression toward U.S. allies in the region; 2) prevent Iranian coercion; 3) prevent a nuclear arms race between Iran and Israel; and 4) prevent a regional proliferation cascade. Opposing arguments include: 1) overstressing U.S. extended deterrence commitments; 2) the U.S. having insufficient stake in the region's stability (if its share of oil imports from the Persian Gulf continues to decline); 3) the risk of the U.S. being drawn into an unnecessary nuclear conflict or the possibility of intractable military involvement; and 4) lastly, the lack of cultural affinity with like-minded, democratic states, outside of Israel.

The panelists noted Israel as being the top state the U.S. would extend deterrence to, given cultural affinity, political ties, and Israel's ability to defend itself conventionally. The U.S. might also consider extending deterrence to Egypt (a major non-NATO ally), Saudi Arabia, and other Gulf States to try to avoid a proliferation cascade in the region. The panelists outlined three

possible forms of extended deterrence: bilateral commitments (U.S. extends to one or more countries), multilateral commitments (extend to group of allies/partners in region), and ambiguous commitment (no formal alliance, similar to strategic ambiguity toward Taiwan).

The panelists concluded that extended deterrence remains a possible solution, but it is limited by political and military factors. The panelists believed an ambiguous approach would be most feasible and likely, as it would not require much change in U.S. policy, but it might require a change in posture. While Washington is unlikely to deploy nuclear weapons to any host country in the region, it would be feasible to expand the capabilities of nuclear submarines and other naval delivery systems that can be readily deployed to the region. Hypothetically, the United States could deploy naval assets with a nuclear component to the Persian Gulf or Red Sea to act as a credible deterrent. The presence of nuclear submarines or a carrier strike group could be the necessary show of force to assuage allied concerns, while signaling to Iran that nuclear aggression will be countered swiftly.

The panelists assessed the ambiguous approach would be enough to deter first use by Iran, but it would fall short of assurance and would probably not stop proliferation from happening in the region. However, ambiguity may be the only feasible path forward as any official extended deterrence treaty would likely be gridlocked in the U.S. Senate. Additionally, there may be significant resistance to ratifying any treaty providing security guarantees to authoritarian regimes. On the other hand, it's unclear if the United States' closest ally in the region, Israel, would want an official U.S. deterrence commitment, as that might limit Israel's military options in the future. Israel would also unlikely want such a commitment if the United States establishes a bilateral deterrence commitment to Saudi Arabia.

Panel 9: Implications for the United States and its Allies and Partners

- Other than continue to try to prevent a nuclear-armed Iran, what should the U.S. and its allies and partners do to help prevent a further erosion of regional nuclear order?
- How should they prepare for further erosion?

The participants underscored the eroding nuclear order in the Middle East, and that a nuclear-armed Iran has the potential to drive nuclear proliferation in the Middle East, destabilize the region, and encourage extremism. The IAEA is no longer a base of knowledge for Iran's nuclear program, and the JCPOA has failed in its mission to halt significant advances in Iran's nuclear program. Furthermore, the United States has sidestepped the issue of a nuclear Iran by focusing on Saudi-Israeli normalization and the pathway to a Palestinian state. While important policy issues, they do not address the fundamental problem of a nuclear Iran. The panelists all agreed that the United States must recognize that the world order is changing quickly. Nonetheless, the Israel-Hamas War and ongoing tensions in the region likely provide an opportunity for the United States to buttress its Middle East strategy and provide a transformative policy to safeguard the nuclear order.

In the face of escalation, the panelists argued the United States needs to solidify defensive counter alliances and abandon its attempts at rapprochement with Iran. Furthermore, the United

States must credibly signal to its partners in the region that it can be relied upon if Iran crosses the threshold. Instead of finding ways to extricate itself from the region, the United States must firmly commit to the defense and security of the Middle East, assuring its allies and partners that America will have an enduring presence in the region. Continued U.S. presence could deter future violent activity and be a warning sign to American and Israeli adversaries in the region. Defense alliances could strengthen American security, unilaterally prevent proliferation, and counter China and Russia in the Middle East. Moreover, regional counter alliances may dissuade Iran from pursuing a nuclear weapon since the perceived advantages may be nullified by turning the whole region against Tehran.

In addition to defense alliances and security guarantees, the participants agreed the United States must use its influence with countries like Saudi Arabia to prevent them from obtaining any dual-use equipment like a nuclear fuel cycle. Nonproliferation in the Middle East should remain a major goal for the United States. Furthermore, the United States must coordinate with Israel to prevent nuclear escalation or mishaps. A stronger U.S.-Israeli alliance will prevent the risk of unilateral action by the other. It might also diminish Iran's confidence and make it more risk averse. Joint operational planning between the United States and Israel could demonstrate to Iran that there is a credible military option that has the potential to severely damage its nuclear program.

Political options for reversing or scaling back Iran's nuclear program are unlikely feasible. In addition, no deal is possible without a credible military option, of which its existence is debated. Israel is preoccupied with its conflict with Hamas, and the United States is hesitant to enter a new conflict, with two major conflicts already going on in Europe and the Middle East. However, a big question looms: which is worst—the fallout and repercussions of a military strike on Iran or a world with a nuclear-armed Iran?

Participants questioned the merits and feasibility of an arms control agreement in the Middle East, such as a nuclear weapons free zone (NWFZ) or a less ambitious nuclear test free zone (NTFZ). However, such arrangements would require Israel and Iran to both come to the table and make concessions, which will not happen in the current environment. Participants also discussed the prospects of the United States sponsoring an arms control regime reminiscent of the SALT treaties with the Soviet Union. Engaging in this type of arms control could both recognize the change in the regional order and adapt to it by limiting the number of nuclear weapons in the Middle East. However, the group agreed that a nuclear-armed Iran would be too risky to the fragile nuclear order and any arms control treaty would be viewed with skepticism by U.S. allies and partners, chiefly Israel.

Given the challenges with engaging in arms control in the region, participants discussed ways to bolster communication to avoid misunderstandings and miscalculations. The group recommended the United States should establish a crisis communication line between Israel and Iran to prevent unilateral military action, while simultaneously deter any miscalculations that would lead to escalation. The group also recommended more back channels of communication and establishing clear rules of engagement between Israel and the rest of the region.



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