Iran's Drone Strategy (Part 2): Preventing Postwar Rebuilding and Advancements

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Brief Analysis

Tehran's drone ecosystem has been hit hard, but not at its roots—with help from Russia and China, the regime could restore many of the program's capabilities within months while steadily working toward more dangerous next-generation models.

Once the war comes to a definitive close and the crisis over the Strait of Hormuz is resolved, the most immediate strategic question on Iran will be how to prevent the regime from rebuilding its drone and missile industries. So far, the conflict has shown that even a heavy U.S.-Israeli offensive against visible infrastructure cannot erase a widely distributed drone production enterprise rooted in academic know-how, university labs, small workshops, dual-use suppliers, front companies, and foreign procurement channels. Unless allied efforts expand to disrupting this broader regeneration network, Tehran can be expected to rebuild important parts of its drone program relatively quickly and emerge with a more adaptive and dangerous capability.

Specifically, if this decentralized network is permitted to operate unhindered, the regime could restore its most dangerous capability—namely, sustaining mass salvos of long-range drones—within roughly six to twelve months. In April, Alireza Sheikh, the deputy chief of staff for Iran's armed forces, **claimed (https://www.armyrecognition.com/news/army-news/2026/iran-boosts-drone-production-10x-for-mass-strike-capability-amid-us-israel-tensions)** that the military had rapidly repaired or relocated damaged missile and drone sites after the June 2025 war, achieving a "tenfold" surge in production within months by scaling the dispersed assembly of smaller, more resilient systems. Media reports indicate that imported components and know-how from actors **like Russia (https://www.economist.com/europe/2026/05/07/secret-document-reveals-russias-plans-to-aid-iran)** and China served as the main accelerators of this surge.

Why “Mowing the Grass” Is Not Enough

As discussed in Part 1 of this PolicyWatch (https://www.washingtoninstitute.org/policy-analysis/irans-drone-strategy-part-1-wartime-performance-and-adaptations), U.S. and Israeli operations prior to the ceasefire substantially damaged Iran’s drone production lines, component sites, industrial nodes, storage areas, and launch sites, sharply reducing the regime’s ability to conduct mass long-range strikes. Yet those results will be temporary without further action. Under the current circumstances, Iran can be expected to move back to large-scale drone production within a year, likely using more streamlined manufacturing methods. This would entail a gradual increase to prewar rates as structures are rebuilt and machine tools are imported and set up.

The United States and its partners must therefore be prepared to step up their nonkinetic efforts against the program rather than relying solely on military destruction of physical infrastructure. Iran’s drone enterprise extends well beyond bombed facilities. Multiple universities and technical schools provide the talent pool required for airframes, avionics, propulsion, guidance, composite materials, fiber optics, artificial intelligence, and systems integration. Various startups, small firms, and private workshops enable improvisation, redesign, and subcontracting. And multiple needs are fulfilled through procurement networks abroad.

Even in purely tactical terms, all of these inputs are more difficult to target with strikes than the more visible military infrastructure hit so far, and attempting to do so would also raise major political, legal, and ethical dilemmas. Two guidelines could help ease these dilemmas while lessening the risks of escalation with Iran:

1. **Wherever possible, prioritize nonkinetic tools against ambiguous civilian and technical sectors tied to the drone program. This means moving beyond attrition metrics to focus on sustained multi-domain disruption, including targeted sanctions (https://www.reuters.com/world/us-targets-china-based-network-supporting-irans-drone-procurement-efforts-2023-03-09/), intelligence operations, cyberattacks, supply-chain disruption, real-time customs intelligence, stronger export controls, and comprehensive scrutiny of all procurement corridors, among other measures discussed below.**
2. **If expanding kinetic strikes into these sectors is deemed essential, the United States must rely on exceptionally precise intelligence to demonstrate clear military necessity; conduct rigorous legal reviews to ensure strict compliance with the principles of distinction and proportionality under international humanitarian law; and engage in proactive diplomacy and strategic communications to sustain allied support and blunt regime propaganda.**

In short, postwar strategy cannot rely on “mowing the grass” alone—airstrikes and other military pressure are insufficient without far harsher nonkinetic measures against the drone program’s long supply chain.

How Iran Might Rebuild and Improve Its Drone Force—With Help

Assuming the regime is able to survive for at least another few years, it will likely seek to redesign this ecosystem with an emphasis on survivability, miniaturization, navigation resilience, 3D printing, AI, swarming, compact loitering munitions, and first-person-view drones (FPVs) that are harder to detect, jam, or destroy. Russia could play a major role in this evolution.

For one thing, the Ukraine war has given Moscow extensive experience (https://www.reuters.com/business/aerospace-defense/inside-ukraines-drive-defeat-dreaded-shahed-drone-2026-04-29/) with industrializing cheap long-range drones, iterating designs under fire, and hardening them against electronic warfare. The Kremlin may have already shared its modified derivatives of the Shahed—the drone it originally received in large numbers from Iran during earlier stages of the Ukraine war. Even limited Russian assistance (https://www.reuters.com/world/middle-east/russia-is-supplying-iran-with-shahed-drones-

zelenskiy-says-2026-03-15/) could help its partner close gaps in design, production, and tactics. Iran will also likely be able to recover surviving machine tooling from the rubble of the war and leverage dual-use industries to rapidly reconstitute some production capacity.

Moscow has also presumably shared detailed feedback from its years of using Shahed drones and their variants on the battlefield. Notably, Russian drone tactics in Ukraine have evolved from massed barrages to sustained attrition using layered strike packages, variants equipped with real-time video, hardened navigation systems, range-extending "motherships," and fiber-optic FPVs that create deep kill zones against logistical resources and rear-area targets.

Curtailing these extensive transfers of technology and know-how will require expanded secondary sanctions against Russian defense entities (e.g., the Alabuga Special Economic Zone) and individuals involved in **transferring (https://www.economist.com/europe/2026/05/07/secret-document-reveals-russias-plans-to-aid-iran?taid=a246f6ae-7f43-4e69-8961-d523d16cbfb4&utm_campaign=trueanthem&utm_medium=social&utm_source=twitter)** upgraded drone designs and battlefield lessons. Similarly, enhanced U.S. intelligence sharing with allies is crucial to help monitor and interdict relevant Iranian-Russian personnel exchanges, joint testing programs, and component shipments. Tighter controls on dual-use aviation and electronics exports to Russia would also be helpful.

China remains critical to Iran's drone enterprise as well, primarily as a **hardware lifeline (https://www.atlanticcouncil.org/dispatches/from-drones-to-rocket-fuel-china-and-russia-are-helping-iran-through-supply-chains/)** for electronics, optics, machine tools, subcomponents, and procurement cover. Chinese firms supply the majority of dual-use components in Iran's drones (e.g., they source over 60 percent of the electronics in the Shahed family), along with satellite navigation modules for jam resistance and precision, ultra-thin fiber-optic cable for unjammable FPV systems, lithium-ion batteries, and computer numerical control (CNC) equipment for dispersed workshops. Customs data **shows (https://www.wsj.com/world/china-is-still-supplying-drone-factories-in-iran-russia-despite-u-s-sanctions-1e6820ca)** that Chinese exports of lithium-ion batteries and ultra-thin fiber-optic cable to Iran surged sharply in the second half of 2025, including through front companies and Hong Kong intermediaries. This supply line helped the regime rebuild its drone capabilities after the twelve-day war without large-scale factories. To press Beijing on decreasing this activity and raise the cost of providing Tehran with procurement cover, Washington would need to apply calibrated secondary sanctions on key firms and intermediaries, heighten its scrutiny of transshipment hubs in Hong Kong and on the mainland, and push for greater multilateral export controls.

Without Russian and Chinese assistance, Iran cannot rebuild its drone industry at the desired pace and volume, and its products would be limited in sophistication and therefore far more vulnerable to existing defenses. The regime's distributed regeneration network is durable, but it cannot by itself produce the "leaner, smaller, smarter" capability Tehran seeks.

One of the most important traits the regime will likely seek when rebuilding its drone force is resilient, multilayered connectivity—that is, using a combination of LTE/5G, line-of-sight radio frequency communications, mesh networks, and satellite communications—to continue operating despite enemy disruption. Fiber-optic guided FPVs exemplify this evolution and are already in the hands of Iranian forces and their regional proxies. In Ukraine, Russia pioneered mass deployment of these FPVs using ultra-thin cable spools that are as long as sixty-five kilometers in advanced models, enabling unjammable strikes guided via high-definition video. Combined with Russian technical transfers and imported Chinese components, Iran's domestic fiber-optics industry provides a ready foundation for mass production of these drones. The Islamic Revolutionary Guard Corps (IRGC) already operate cable-guided models with a range of about 48 kilometers (enough to **cross the Strait of Hormuz**

(https://www.reuters.com/business/aerospace-defense/iran-could-disrupt-strait-hormuz-with-drones-months-2026-03-04/)), while proxies like Hezbollah have deployed **(https://apnews.com/article/hezbollah-israel-drones-fiber-optic-war-00cd07852f49ade04ed0a6fde505d987)** them extensively against Israeli forces in southern Lebanon since March, delivering precise strikes on troops, armor, and aircraft. These systems also reduce dependence on vulnerable large factories (assuming Iran imports most of the fiber-optics from abroad) and enable leaner, dispersed production. To prevent further expansion of this capability, the United States and its partners would need to prioritize the disruption of Chinese fiber-optic and electronics supply chains and consider intelligence-driven targeting of Iran's own fiber-related sectors.

Policy Recommendations

Because the war has damaged Iran's drone arsenal but left its rebuilding capacity in place, U.S. policymakers must move beyond the metrics of destroyed factories and reduced launches, acknowledging that the regime's wider drone ecosystem cannot be eliminated through airstrikes alone. In the medium-term postwar period, this will mean pursuing a comprehensive, sustained counter-drone strategy built on the following interlocking principles:

- **Commit to unrelenting pressure on Iran's domestic regeneration network.** Persistent intelligence operations, targeted sanctions, and other nonkinetic measures must be applied to Iranian universities, dual-use workshops, AI vendors, fiber-optic sectors, and any other avowedly civilian entities found to be furthering the drone program.
- **Counter Iran's use of cryptocurrency** (https://www.reuters.com/technology/crypto-fuels-drone-purchases-russia-iran-report-says-2026-03-30/) **to procure drone components.** For instance, U.S. authorities could deploy advanced blockchain analytics for real-time transaction tracing and attribution, followed by rapid sanctions on identified wallets and intermediaries, secondary sanctions on facilitating platforms and exchanges, and enhanced multilateral intelligence sharing to close crypto evasion routes. This would build on the April Treasury Department action (https://home.treasury.gov/news/press-releases/sb0502) that froze $344 million (https://www.cnn.com/2026/04/24/politics/us-freezes-cryptocurrency-iran) in Iran-linked crypto wallets. The U.S. government should also establish a dedicated "Iran drone crypto task force" to integrate these blockchain analytics with other intelligence on dual-use supply chains. By proactively monitoring wallets—especially those tied to Russian and Chinese vendors—authorities could routinely designate new addresses and facilitators before they can move funds.
- **Intensify pressure on foreign supply chains.** This entails several parallel efforts: expanding secondary sanctions on entities in China and elsewhere that supply critical drone components; strengthening real-time export controls and customs intelligence; dismantling front companies; and rigorously interdicting all procurement routes, especially overland corridors through Afghanistan and broader Central Asia (including rail links to China) and maritime routes beyond the Strait of Hormuz. With the U.S. blockade on Iranian ports likely temporary, future success will depend on prioritizing sufficient intelligence resources to constrict the regime's diverse supply chains, committing the necessary military resources (including Indo-Pacific naval assets), and maintaining close coordination with allies.
- **Confront Russian and Chinese assistance directly.** Washington should sanction and disrupt any Russian officials and entities who provide Iran with drone tactics, modifications, global satellite navigation modules, fuel-cell technology, fiber-optic FPV technology, or any other capabilities that have been intensively battle-tested during the Ukraine war. This could involve using direct interdiction when necessary, as well as monitoring any Iranian firms that receive this assistance. Regarding China—Iran's primary source of drone electronics, navigation technology, fiber-optic cable, batteries, and procurement cover—U.S. officials should apply calibrated secondary sanctions on key firms and intermediaries while leveraging diplomacy and multilateral export controls to raise costs and close loopholes.
- **Prepare for the future.** Much like the Gulf states are already doing (https://www.washingtoninstitute.org/policy-

analysis/washington-should-jump-ukraines-outreach-middle-east) after being targeted by mass drone salvos during the Iran war, the United States should integrate Ukraine's battlefield lessons into its own defensive countermeasures and nonkinetic disruption capabilities. This includes accelerating deployment of layered, AI-enabled counter-drone platforms that fuse multi-sensor data (radio, optical, acoustic) with autonomous decision tools and high-power microwave effectors. Such layered systems can help neutralize fiber-optic FPVs and swarms at minimal cost. Allied forces should also replicate and study Kyiv's model of decentralized, off-the-shelf production and rapid iteration of new drones and tactics, which could help predict and dismantle Iran's potential future commercial models, startup networks, dual-use supply chains, and distributed workshops.

- **Work with select Gulf and European partners to launch a classified defection program for drone-related personnel.** For example, they could offer relocation packages, research grants, fast-track visas, family protection, and career opportunities to Iranian drone engineers, university researchers, and technicians in critical fields, including fiber-optic FPV design, AI autonomy, navigation systems, and composite materials.

If these measures are not implemented aggressively, Iran is likely to emerge from the war with a leaner, smaller, smarter, and far harder to stop drone force—one built around resilient fiber-optic FPVs, miniaturized swarms, and multilayered navigation, making it capable of operating effectively even against superior defenses. The window to prevent this outcome is quite narrow. Although military strikes bought some time, only a comprehensive, forward-looking campaign against the regime's wide regeneration network can deliver strategic closure on this issue.

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