From Tehran to Kyiv: The Islamic Republic of Iran's Role in Russia's Drone War

IPHR International Partnership for Human Rights

Atlantic Council STRATEGIC LITIGATION PROJECT

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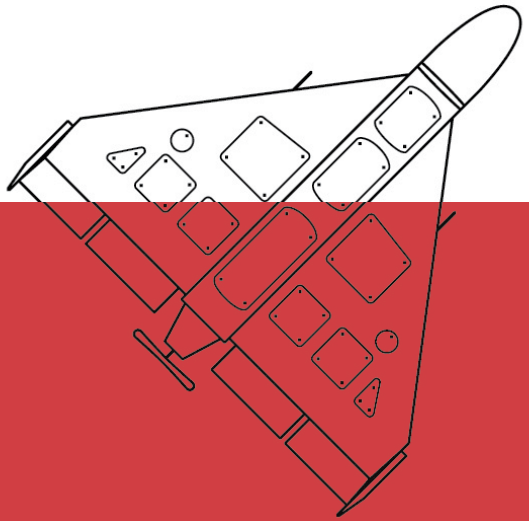
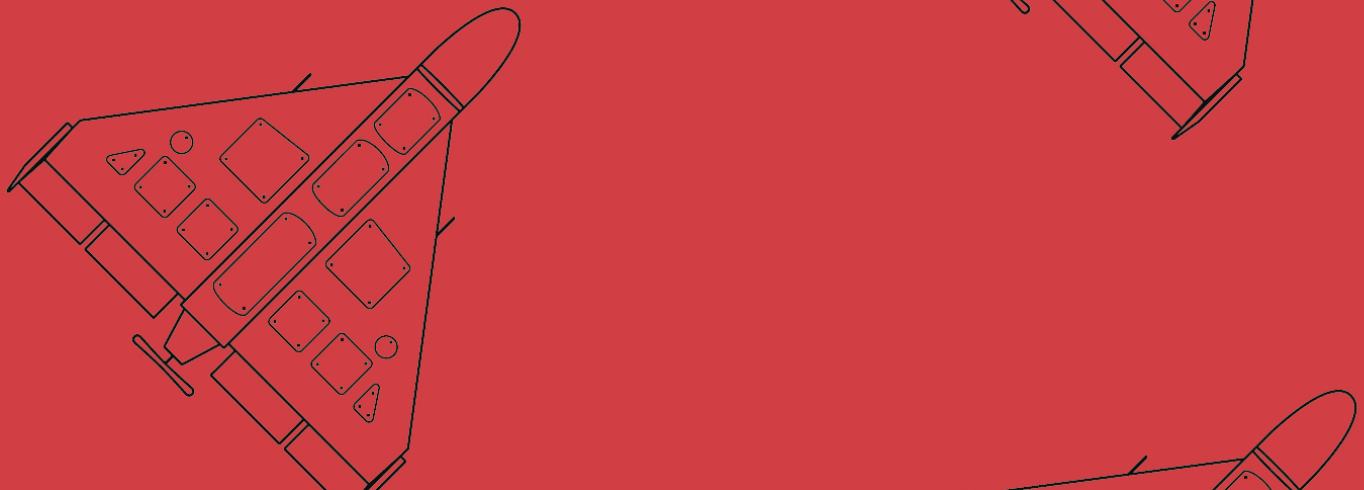


Executive Summary



International Partnership for Human Rights (IPHR) is an independent, non-governmental organisation founded in 2008. With a presence in Brussels, Kyiv, and Tbilisi, IPHR works closely with civil society groups in Eastern Europe, South Caucasus, and Central Asia to raise human rights concerns at the international level and promote respect for the rights of vulnerable communities. IPHR has been documenting atrocity crimes committed in the context of Russia's war on Ukraine since 2014 and has been using collected evidence for accountability purposes.

https://iphronline.org/

The Strategic Litigation Project (SLP) is an initiative under the Atlantic Council, a think tank based in Washington, DC. The SLP works at the intersection of law and policy, identifying innovative pathways to address gaps in the international justice landscape. In addition to advocacy, this includes initiating and supporting strategic litigation that broadens pathways available to victims and survivors of core international crimes.

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C4ADS is a nonprofit organisation dedicated to data-driven analysis and evidence-based reporting of conflict and security issues worldwide. Their approach leverages nontraditional investigative techniques and emerging technologies. They recognize the value of working on the ground, capturing local knowledge, and collecting original data to inform their analysis.

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This report assesses the Islamic Republic of Iran's (IRI) responsibility for international crimes committed by the Russian Federation (Russia) in Ukraine through its provision of Shahed-style unmanned aerial vehicles (UAVs), related technologies, training, and production support to Russia since mid-2022. The Russo-Iranian partnership continued and deepened in the course of 2023 and 2024 and by January 2025 had grown into a multifaceted twenty-year strategic partnership treaty, which included defence cooperation, further threatening the security of Ukraine and the broader region. This report synthesizes factual, technical, operational, and legal findings to demonstrate how Russian strikes using Shahed-style UAVs amount to war crimes and crimes against humanity. It highlights the IRI's crucial contribution to Russia's terror campaign against Ukrainian civilians and related secondary (accessorial) criminal liability of IRI officials and entities under international law.

Methodology

This report draws on open-source intelligence (OSINT), document review, field-based data collection, and legal analysis.

Technical Characteristics of Shahed UAVs: Information on the specifications and modifications of Shahed-131 and Shahed-136 UAVs was obtained primarily through OSINT research. Persian-language researchers and weapons experts provided crucial assistance in identifying and interpreting technical materials, leaked documents, and specialist publications. Comparative assessments of modifications were also informed by reports of independent arms investigators, including Conflict Armament Research (CAR), Royal United Services Institute (RUSI), and Center for Strategic and International Studies (CSIS).

Supply Chains and Production Capacity: Analysis of Iran's transfer of drones and support for Russia's domestic production relied on a combination of open-source reporting, leaked Alabuga Special Economic Zone documents, and assessments by investigative organizations such as C4ADS. The Prana Networks leak provided a unique evidentiary base, which this report directly assessed and cross-referenced against corroborating media and governmental sources. Where possible, satellite imagery and trade/transport records were used to verify claims about production scale, shipping routes, and front-company involvement.

Cases of Shahed Attacks: IPHR researchers selected and analyzed 144 attacks involving Shahed UAVs, which caused civilian casualties and/or damage to civilian infrastructure between September 2022 and May 2024. These cases were identified from official Ukrainian sources (Air Force, Prosecutor General's Office, regional and local authorities) and corroborated with photos, videos, and contemporaneous media or social media content. Incidents where the type of weapon, target, or source of damage (e.g., drone debris or friendly fire) could not be reliably established were excluded.

Assessing Civilian Harm and Long-Term Impacts: Beyond immediate casualties and destruction, the report draws on witness and survivor testimonies, reports from intergovernmental and reputable nongovernmental organizations, Western media materials, and official Ukrainian government statements. These materials were used to evaluate broader humanitarian and public-health impacts, such as displacement, sleep deprivation, chronic anxiety, and disruption of essential services.

Legal Assessment: The 144 selected incidents were analyzed against the norms of international humanitarian law (IHL) and international criminal law (ICL). Specifically, the report applied the Rome Statute definitions of war crimes and crimes against humanity, as well as IHL principles on distinction, proportionality, and precautions in attack. The legal analysis also considered the Rome Statute legal frameworks of aiding and abetting and common-purpose liability to evaluate the potential secondary (accessorial) liability of IRI officials and entities for Russia's UAV campaign.

Limitations: Given the ongoing nature and intensity of the armed conflict and restrictions on access to frontline areas, the methodology is necessarily constrained by the availability and verifiability of data. OSINT carries inherent risks of misinformation; to mitigate this, the report adopted a conservative inclusion policy, requiring multiple, independent sources before accepting evidence. Certain information is also naturally harder to come by, particularly when it involves confidential inter-governmental discussions or actions in States including the IRI and the Russian Federation. Figures on overall drone production and launches are based on the most credible available estimates from Ukrainian authorities, international organizations, and independent think tanks, but may understate or overstate actual totals. In order to mitigate these risks and to ensure transparency and allow for critical engagement with the material and findings, the report thoroughly cites all sources of information.

Key Findings

1. IRI has given Russia the capacity to conduct massive nightly UAV attacks across Ukraine

- From August 2022 onwards, IRI transferred to Russia Mohajer-6 (used for frontline reconnaissance) and Shahed-131/136 UAVs (used for strikes deep into Ukraine, primarily against civilian targets), trained Russian UAV operators, provided technical support and modifications of the original UAV models, and established logistics via Caspian Sea shipping and cargo flights.
- Later, IRI-linked front company Sahara Thunder supplied UAV kits, UAV components, blueprints, and source code for Russia's domestic UAV production. The key November 2022 Sahara Thunder-Alabuga agreement gradually localised Shahed UAV production in the joint IRI-Russian factory in the Alabuga Special Economic Zone (Alabuga SEZ), with deliveries of thousands of kits and the full transfer of technology, allowing Russia to start and subsequently ramp up domestic Shahed production and design modifications to produce thousands of Shaheds per month.

2. Shaheds' technical characteristics and subsequent modifications increased harm to civilians

- Shahed-131/136 are relatively inexpensive (20,000 to 50,000 USD per unit);[1] large (2.6 x

1 Daniel Kochis, "Russia's links with Iran are growing stronger," *Politico*, 18 August 2024 (*https://www.politico.eu/article/russia-iran-weapons-arms-ballistic-missiles-drones-defense-war-in-ukraine-war-in-gaza/*).

2.2 metres to 3.5x2.5 metres),[2] slow (about 185 km/h),[3] long-range (2,000 kilometres)[4] and loud[5] loitering munitions with 10 to 50 kg warheads.[6] Their size, speed, noise, and small payload make them extremely vulnerable to air defence and ineffective against fortified military targets, but they remain a cheap and indispensable asset for Russia's efforts to deplete Ukraine's air defence and terrorise its civilian population.

- Between Autumn 2022 and 2025, IRI and Russia adopted GLONASS-based guidance, 4G modems/SIMs, black coating, shrapnel-loaded warheads, thermobaric payloads, live operator controls with cameras, mine-dispensing tactics, and decoy Shaheds (without a payload)—changes that make Shaheds less vulnerable to air defence, increase their lethality against soft-skinned civilian targets while leaving them largely ineffective against hardened military objectives.
- Despite the high interception rates (up to 85 per cent),[7] volume tactics (night swarms, "double-tap" strikes, multi-axis launches) ensure sufficient UAV "leakage" through overwhelmed Ukraine's air defence that causes deaths, injuries, fires, grain shortages, blackouts and devastating 'ripple' effects caused by damage to energy infrastructure that supports electricity, heating and water distribution and the vital services dependent on them, such as healthcare and bomb shelters.

3. Russia weaponized Shahed UAVs primarily to attack civilians and civilian infrastructure

- From the first Shahed attacks in September 2022 until the end of May 2024, IPHR documented 144 Shahed attacks on civilian sites and critical infrastructure. These strikes killed 58 civilians (including five children), injured 265 more (including eight children) and damaged or destroyed hundreds of civilian buildings.
- Shahed UAVs hit densely populated residential areas, civilian homes, schools, hospitals, cultural sites, grain and energy infrastructure, and other objects critical for civilian survival across much of Ukraine.
- As Russia deepened its cooperation with the IRI and also accelerated domestic drone production, the launches increasingly occurred in large "swarm" waves, often combined with missiles to overwhelm air defences. The attacks mostly occurred at night and sometimes repeatedly and shortly one after another on the same object ('double-tap' strikes, which aim to target emergency responders addressing the initial strike) to maximize civilian harm.

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2 Joe Emmett et al., "Shahed-131 & -136 UAVs: a visual guide," *Open Source Munitions Portal* (*https://osmp.ngo/collection/shahed-131-136-uavs-a-visual-guide/*).

3 Yasir Atalan and Benjamin Jensen, "Breaking Down Russian Missile Salvos: What Drives Neutralization?" *Center for Strategic & International Studies*, 24 February 2025 (*https://www.csis.org/analysis/breaking-down-russian-missile-salvos-what-drives-neutralization*).

4 Ibid.

5 Ben Farmer, "Listen: The terrifying sounds of modern warfare in Ukraine," *The Telegraph*, 17 June 2024 (*https://www.telegraph.co.uk/world-news/2024/06/17/terrifying-sounds-modern-drone-warfare-ukraine/*); ''A Technophile's Guide to the Evolution of Russian Shahed Drones," *Kyiv Post,* 10 December 2023 (*https://www.kyivpost.com/post/25204*).

6 Uzi Rubin, "Russia's Iranian-Made UAVs: A Technical Profile," *The Royal United Services Institute for Defence and Security Studies*, 13 January 2023 (*https://www.rusi.org/explore-our-research/publications/commentary/russias-iranian-made-uavs-technical-profile*); Joe Emmett et al., "Shahed-131 & -136 UAVs: a visual guide," *Open Source Munitions Portal* (*https://osmp.ngo/collection/shahed-131-136-uavs-a-visual-guide/*).

7 Yasir Atalan and Benjamin Jensen, "Breaking Down Russian Missile Salvos: What Drives Neutralization?" *Center for Strategic & International Studies, 24 February 2025* (*https://www.csis.org/analysis/breaking-down-russian-missile-salvos-what-drives-neutralization*).

4. In 2024-2025, Russia has dramatically ramped up Shahed production and related atrocities

- Between 2022 and 2024, Russia launched an estimated 14,848 Shahed-style drones in total.[8] 60 per cent of these strikes occurred in the last six months of 2024 (and kept intensifying since), reflecting the expansion of IRI-Russian Alabuga SEZ and its drone production. Between 2023 and 2025, the Alabuga SEZ more than doubled in size and by 2025 was producing 2,700 Shahed drones per month (32,400 per year).[9] By Summer 2025, Russia was attacking Ukraine with 500 to 1,500 Shahed drones per week,[10] (a ten-fold increase in comparison to 2024)[11] with July 7, 2025, seeing a record 2,081 drones launched against Ukraine in one day.[12] June and July 2025 Russian attacks killed 518 civilians, maimed more than 1,500, and terrorized millions,[13] making them the deadliest months for civilians in three years, according to the UN estimates.[14] The increased production and use of Shahed drones are the major factors in the dramatic increase in civilian casualties in Ukraine.

5. Russia's Shahed attacks in Ukraine amount to war crimes and crimes against humanity, for which IRI officials can bear secondary liability

- On the face of it, the 144 Shahed attacks against civilians and civilian objects analyzed in this report constitute war crimes of attacks against civilians,[15] civilian objects[16], and specially protected objects,17 and crimes against humanity of murder[18] and other inhumane acts.19 They also violate key IHL principles of distinction[20] and precautions[21] aimed at minimizing civilian harm and are part of a broader Russian campaign of terrorizing Ukrainian civilians.22

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8 Neil Hollenbeck et al., "Calculating the Cost-Effectiveness of Russia's Drone Strikes," *Center for Strategic & International Studies*, 19 February 2025 (*https://www.csis.org/analysis/calculating-cost-effectiveness-russias-drone-strikes*).

9 Lizzie Johnson et al., "Russia bombs Ukraine almost every night. This is what it sounds like," *The Washington Post*, 8 September 2025 (*https://www.washingtonpost.com/world/interactive/2025/ukraine-bombing-sounds-war-sirens-russia/*).

10 Lizzie Johnson et al., "Russia bombs Ukraine almost every night. This is what it sounds like," *The Washington Post*, 8 September 2025 (*https://www.washingtonpost.com/world/interactive/2025/ukraine-bombing-sounds-war-sirens-russia/*).

11 Peter Dickinson, "Russia's bombing campaign is killing record numbers of Ukrainian civilians," *Atlantic Council*, 14 July 2025 (*https://www.atlanticcouncil.org/blogs/ukrainealert/russias-bombing-campaign-is-killing-record-numbers-of-ukrainian-civilians/*).

12 Lizzie Johnson et al., "Russia bombs Ukraine almost every night. This is what it sounds like," *The Washington Post*, 8 September 2025 (*https://www.washingtonpost.com/world/interactive/2025/ukraine-bombing-sounds-war-sirens-russia/*).

13 Lizzie Johnson et al., "Russia bombs Ukraine almost every night. This is what it sounds like," *The Washington Post*, 8 September 2025 (*https://www.washingtonpost.com/world/interactive/2025/ukraine-bombing-sounds-war-sirens-russia/*).

14 Human Rights Monitoring Mission in Ukraine, *Ukraine: Protection of Civilians in Armed Conflict* (Office of the United Nations High Commissioner for Human Rights, June 2025) (*https://ukraine.ohchr.org/en/Protection-of-Civilians-in-Armed-Conflict-June-2025?itid=lk_inline_enhanced-template*); Human Rights Monitoring Mission in Ukraine, *Ukraine: Protection of Civilians in Armed Conflict* (Office of the United Nations High Commissioner for Human Rights, July 2025) (*https://ukraine.ohchr.org/en/Protection-of-Civilians-in-Armed-Conflict-July-2025*).

15 Rome Statute, Article 8(2)(b)(i).

16 Rome Statute, Article 8(2)(b)(ii).

17 Rome Statute, Article 8(2)(b)(ix).

18 Rome Statute, Article 7(1)(a).

19 Rome Statute, Article 7(1)(k).

20 Protocol Additional I to the Geneva Conventions, Article 48, Article 51, Article 52.

21 Protocol Additional I to the Geneva Conventions, Article 57.

22 Geneva Convention IV, Article 33, Protocol Additional I to the Geneva Conventions, Article 51(2).

- IRI and Russian officials involved in Russian UAV procurement and production schemes can fall under secondary liability (also known as accessorial or indirect liability) provisions for war crimes and crimes against humanity. While the exact legal requirements would differ by jurisdiction, this can cover aiding and abetting the Russian military in its attacks against civilians and civilian objects, or contributing to the Russian government's common plan to invade Ukraine.

Implications of the IRI's support of Russia's war effort:

- **Security**: Shahed swarms are a low-cost, high-pressure technique to exhaust air defences, degrade critical communication systems, and terrorize urban populations at scale and tempo, as Russian has been demonstrating in Ukraine for the last three years. Russia's Shahed incursions in EU/NATO states and their allies such as Moldova, the Baltic states and most recently deep into Poland on the night of 9-10 September 2025,[23] signal that Russia's Shahed campaign is not limited to Ukraine's boundaries and that Russia is testing NATO's response mechanisms, which, according to experts, are currently inadequate to deal with the threat.[24] Russia's strategic partnership with IRI, their dramatic industrialization of Shahed production and escalating drone attacks and incursions threaten long-term security of Ukraine and its Western allies including EU and NATO states.
- **Humanitarian/Public Health:** Nightly alarms, buzzing overflights, loud, deadly explosions, and winter blackouts caused by Shahed attacks lead to chronic anxiety, sleep deprivation, exposure to cold, and interrupted care, with measurable mortality and morbidity impacts for millions of Ukrainians.[25]
- **Accountability Gaps and Impunity for Enablers:** Despite mounting evidence of its material contribution to Russia's campaign of aerial terror, the IRI has so far faced little meaningful accountability. Existing international sanctions remain patchy and poorly enforced,

23 Jakub Krupa, "Drone that crossed into Lithuania from Belarus represents 'alarming sign of spillover of Russia's aggression', says Lithuanian minister—as it happened," *The Guardian*, 5 August 2025 (*https://www.theguardian.com/world/live/2025/aug/05/ukraine-russia-zelenskyy-putin-eu-us-tariffs-europe-latest-news-updates*); Shaun Walker, "Russian drone incursion into Poland 'was Kremlin test on Nato,'" *The Guardian*, 14 September 2025 (*https://www.theguardian.com/world/2025/sep/14/russian-drone-incursion-poland-nato-ukraine-europe*).

24 Phillips Payson O'Brien, "Russia Tested NATO in Poland. NATO Flunked," *The Atlantic*, 10 September 2025 (*https://www.theatlantic.com/ideas/archive/2025/09/poland-nato-russia-drones/684162/*); Francis Farrell, "'A careful calculation'—Russia's drone incursion into Poland tests NATO's red lines," *The Kyiv Independent*, 16 September 2025) (*https://kyivindependent.com/how-russias-drone-incursion-into-poland-skirted-the-line-of-natos-escalation-policy/*); David Kirichenko, "Only Ukraine can teach NATO how to combat Putin's growing drone fleet," *Atlantic Council*, 16 September 2025 (*https://www.atlanticcouncil.org/blogs/ukrainealert/only-ukraine-can-teach-nato-how-to-combat-putins-growing-drone-fleet/*).

25 For more information, see: Chris Chivers, "The Weapon That Terrorizes Ukrainians by Night," *New York Times*, 25 June 2025 (*https://www.nytimes.com/2025/06/25/magazine/ukraine-russia-war-drone-shahed-iran.html?smid=nytcore-ios-share&referringSource=articleShare*); Lizzie Johnson et al., "Russia bombs Ukraine almost every night. This is what it sounds like," *The Washington Post*, 8 September 2025 (*https://www.washingtonpost.com/world/interactive/2025/ukraine-bombing-sounds-war-sirens-russia/*); *Airstrikes and Atrocities: A Legal Assessment of Russia's Aerial Campaign in Ukraine* (International Partnership for Human Rights & International Human Rights Clinic at Harvard Law School, 2025) (*https://iphronline.org/wp-content/uploads/2025/05/airstrikes-and-atrocities-april-2025-1.pdf*); *Health Care in the Dark: The Impacts of Russian Attacks on Energy in Ukraine* (International Partnership for Human Rights & Truth Hounds, 2024) (*https://phr.org/wp-content/uploads/2024/12/REPORT-PHR-TRUTHHOUNDS-UKRAINE-Health-Care-in-the-Dark-2024_Updated-12-20-24.pdf*); "Ukraine: Russian Attacks on Energy Grid Threaten Civilians," *Human Rights Watch*, 6 December 2022 (*https://www.hrw.org/news/2022/12/06/ukraine-russian-attacks-energy-grid-threaten-civilians*).

while international prosecutors have yet to bring cases against Iranian officials or entities. The lack of consequences has emboldened Tehran to deepen its strategic partnership with Moscow, accelerate joint production at Alabuga, and expand transfers of technology. Unless impunity is addressed through coordinated sanctions, investigations, and legal action, the IRI will remain a critical enabler of Russia's war crimes and crimes against humanity in Ukraine and, potentially, beyond.

Recommendations

To International Sanctions and Prosecutorial Mechanisms

1. Open/expand investigations into war crimes and crimes against humanity arising from Shahed strikes against Ukraine's civilians and civilian infrastructure.

2. Pursue secondary liability charges for Russian and IRI officials and entities for aiding and abetting and common-purpose contribution to the crimes through Shahed supplies, technology transfer, training, and joint production.

3. Impose sanctions on individuals/entities involved in the Shahed supply chain, including third-country brokers providing engines, avionics, carbon coatings, modems, and dual-use components; coordinate export-control enforcement and secondary sanctions against sanction circumvention.

To States Supporting Ukraine

1. Help Ukraine to harden critical energy infrastructure against fragmentation/thermobaric effects; expand point defence and overall Ukraine's air defence capabilities through speedy and sufficient weapon supplies, technology, and intelligence sharing.
2. Provide sustained interceptor stockpiles, EW/jamming upgrades against GLONASS/4G-assisted guidance, and night-vision/multispectral tracking to reduce leakage from large UAV swarms.
3. Support national and international strategic litigation programmes and survivors' support programmes, including medical, mental-health, displacement, and property destruction impacts.

To Financial/Tech/Logistics Gatekeepers

1. Enforce know-your-customer and end-use controls against vendors of navigation modules, engines, composites, electronics, and coatings tied to Shahed/Geran programmes;

2. Disrupt trade-finance and insurance for suspect Caspian shipping and cargo flights.

To Civil Society and Researchers

1. Expand forensic recovery and acoustic/trajectory datasets;

2. Document deaths, injuries, sleep deprivation, anxiety, and other health harms, loss of home, and displacement;

3. Assist and advise relevant government authorities on reparations and harm mitigation programmes;

4. Track factory build-outs and third-country tech transfers for evidentiary use.

Conclusion

The Islamic Republic of Iran's provision of Shahed-style drones and facilitation of Russian-based production, training, and technology support have been integral to Russia's air terror campaign against Ukraine. The patterns of targeting of civilian objects and critical infrastructure, Shahed's technical modifications that maximise civilian harm combined with their ineffectiveness against hardened military targets, and the industrial scaling of supply and production together demonstrate conduct that, on the face of it, constitutes war crimes and crimes against humanity—with a credible basis for pursuing secondary liability against responsible IRI officials and entities, alongside direct perpetrators within Russia's armed forces and command structures. Coordinated legal action, sanctions, enforcement, enhanced military aid to Ukraine, and continued evidence gathering of attacks and their civilian effects are urgently required to deter further atrocities, protect civilians, and ensure accountability.

Timely and decisive action against aggressor states and their principal enablers—including the IRI—is vital to protect civilians from the brutality of modern warfare. Russia's long-range Shahed drones push the battlefield beyond discrete combat zones, threatening entire countries and their populations. Worse still, Russia's deliberate and large-scale use of this lethal technology revives the logic of "total war," in which civilian infrastructure and public morale are treated as legitimate targets in the fight for victory. This report demonstrates IRI's crucial role in Russia's total war against Ukraine. To prevent further mass atrocities in Ukraine, the international community must ensure not only that Russian but also IRI officials and other facilitators face charges that reflect the severity of their actions.