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The U.S. Extended Deterrence and China's Gray-Zone Tactics Against Taiwan: Scenarios Other than a Kinetic War

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EXECUTIVE SUMMARY

China has posed mounting security threats to Taiwan in recent years. As heavy attention is paid to the possibility of an all-out invasion of Taiwan, the U.S. role of extended deterrence to preserve peace and stability in the Taiwan Strait has become increasingly crucial. This report explores the role in the context of two specific Chinese gray-zone tactics (CGZTs) against Taiwan—a quarantine or blockade and massive sabotage of the undersea cable indispensable for Taiwan’s internet connectivity with the outside world.

Three reasons render the two CGZTs more likely than a kinetic war in the near future, apart from the fact that they could be no less effective to coerce Taiwan into unification. First, China’s eye-catching intrusive actions against Taiwan in recent years, including all of the large-scale military exercises around Taiwan, have revolved around rehearsals of the two CGZTs rather than those of a full invasion. In all the maneuvers above, the focus on surrounding Taiwan, cutting off key ports, and isolating the island accounted apparently for a heavier weight than on amphibious landing and seizure of key areas, considering: (A) scenario framing in China’s official narratives; (B) how many services and domains were integrated, and domain coverage; and (C) the inclusion of central ports/sea-lanes and “joint seizure of comprehensive superiority” in the exercise objectives. While amphibious and air-assault elements were present in the drills, they were nested inside broader blockade/pressure packages, suggesting that, in resource terms, blockade-oriented joint operations have become the dominant template on which landing pieces are layered. Synthesizing the increasing incidents of undersea cable damage and various suspicious evidence, there emerges a systematically designed sequence in China’s expansion of cable sabotage.

Second, Taiwan’s defense postures demonstrate that it is better prepared for China’s full invasion than the two CGZTs, which makes the first scenario less appealing to Beijing. Taiwan has undertaken a comprehensive defense modernization driven by the Overall Defense Concept (ODC), achieving substantial progress in asymmetric warfare capabilities, indigenous weapons production, and force structure reform, all of which revolve around fighting a kinetic war. Its defense spending surged to 3.32 percent of GDP by 2026, marking the highest level since 2009. In addition, Taiwan also enjoys formidable defensive geography that substantially complicates PLA invasion planning. Compared to the resistance to China’s full invasion, Taiwan’s readiness to dispel Chinese blockade or quarantine operations faces greater challenges. First and foremost are the myriad structural disadvantages Taiwan faces—energy import dependency, geographic isolation, and CGAOAC’s numerical inferiority. Taiwan lacks the capacity to escort commercial ships through quarantine zones or to provide credible protection guarantees to shipping companies. In full maritime quarantine or military blockade scenarios, Taiwan’s Coast Guards cannot break China’s encirclement without naval support. Yet Taiwan’s naval intervention against China’s alleged law enforcement quarantine risks international perception of Taiwanese escalation. Taiwan’s readiness to protect undersea communication cables from Chinese sabotage seems also limited, characterized by nascent institutional frameworks but insufficient maritime patrol capacity and real-time interdiction capability.

Third, there have been massive purges in China of political and military elites during the Xi Jinping era. The recent round of purges after the 20th Party Congress is also unique in terms of the sharply intensified removals of high-ranking PLA officers. A major consequence of the staggering purges now widely assessed in the West is the myriad adverse impacts on PLA’s combat capability in the

near future, including the capability needed for a cross-strait invasion. With a significant portion of the key PLA posts yet to be or newly refilled in interim or acting capacity, such as the Central Military Commission (CMC) vice chair overseeing military operations, director of the Joint Staff Department, leaders and political commissars in most of the five theatrical commands, and commanders of the PLA Army, Navy, Air Force, and Armed Police, it takes a considerably longer period for the newcomers to acquire experience and operational adeptness required for combat missions. A major campaign against Taiwan, for instance, entails complex tasks and steps for integration and joint operation of various services, posing a daunting challenge to the neophytes. Even in the two military exercises against Taiwan in 2025, there were already clues that pointed to likely abnormalities as a result of the purges.

Given the rising probability of the two CGZTs, and the challenges to deter such CGZTs discussed in the literature review, this report proposes to explore how U.S. extended deterrence of CGZTs against Taiwan entails a relatively new approach rooted in a gradually increasing number of analyses in recent years, sometimes known as the fifth-wave deterrence theory. This new wave attempts to bring in conceptual innovations and empirical reorientations. First, it seeks to manage hybrid threats, conceptually akin to GZTs, which combine modern instruments of statecraft to gain advantage while avoiding retaliation, often through ambiguity, low-level coercion, and actions below the threshold of open war. Second, the fifth wave stresses the GZT recipient's resilience to withstand the impacts of GZTs after they occur. Potent resilience cancels out the expected effectiveness of GZTs, thereby dampening the incentive to launch such operations. Therefore, the resilience-centric approach marks a shift from deterrence by punishment to deterrence by denial through the recipient's social and institutional robustness. Third, resilience-building entails an inclusive model which aims to boost resilience across various issue domains vulnerable to particular GZTs, and to foster cooperation and joint preparedness by all relevant actors which are integrated into a comprehensive system. In this way, vital security responsibilities are devolved from the state to market and societal actors while the state retains a coordinating role.

Informed chiefly by the resilience-centric approach, policy recommendations on how U.S. extended deterrence can enhance Taiwan's resilience against undersea cable cuts are proffered. Two types of actions are necessary: to deter such sabotage from happening and to make Taiwan resilient with fallback options to sustain internet connectivity if the sabotage occurs. Given that the cable disruption would affect regional countries as well, preventing the sabotage warrants joint actions involving all the countries in an orchestrated effort. In this regard, Japan and the Philippines appear to be immediate candidates to work together with the U.S. and Taiwan to deter the sabotage. Taking the collective actions in Europe to curb cable disruption in the Baltic Sea as a reference point, a number of concrete tasks can be planned and implemented by an initially minilateral coalition, perhaps subsequently broadened to a multilateral one, in the Indo-Pacific. Whether in its incipient or subsequent stage, the coalition against cable sabotage in the Indo-Pacific can be linked, perhaps under the U.S. steering, to the existing multilateral mechanisms in Europe. Emanating from such a link could vary from exchanges and sharing of information and know-how, to cross-reference of technical expertise, and hardware or software transfers.

Four concrete tasks are proposed. First, a scheme for a concrete joint operation to protect the cables, preferably nested in an issue-specific institution, should be set up. A reference is NATO's Baltic Sentry and Maritime Centre for Security of Undersea Infrastructure, launched in 2025. In fact, Taiwan has taken a preliminary step toward international collaboration for the cable protection. Foreign Minister Lin Chia-lung launched the Management Initiative on International Undersea

Cables, known as RISK (risk mitigation, information sharing, systemic reform, knowledge building), on October 28, 2025, at the Taiwan-Europe Subsea Cable Security Cooperation Forum. Second, pursuit of related progress in international law is crucial to bolster the legality and legitimacy of the proposed initiative above. The International Law Association, a globally leading professional organization in the sphere, has a dedicated Committee on Submarine Cables and Pipelines under International Law, which called for strengthening the current regime on this issue based on the 1982 United Nations Convention on the Law of the Sea (UNCLOS). Various stakeholders in the Indo-Pacific, including the U.S. and Australia, have taken unilateral measures such as the Undersea Cable Control Act and domestic “cable protection zones” to fend off the emerging threats to cable security. And given the need for a new implementing agreement under UNCLOS, an active steering role played by the U.S. for international legal change appears desirable. Third, based on the practice in Europe, under a minilateral scheme in the Indo-Pacific, member states could contribute resources to launch collaborative actions to undertake detection, surveillance, interception, and expelling or seizure of suspected or confirmed hostile vessels. Fourth, a key component of deterrence is to impose costs, most likely through punishments, to any actors responsible for the sabotage. The European Union presented an action plan in February 2025 to safeguard undersea cables, including proposed punishments for vessels causing damages and sanctions on any country accountable to the disruption.

To mitigate Taiwan’s vulnerability should cable sabotage occur, three recommendations are in place. First, based on Ukraine’s experience in sustaining internet connectivity during the Russian invasion since 2022, Starlink by SpaceX proved a potent substitute for terrestrial infrastructure for Taiwan as well. The U.S. government can play a facilitating or supporting role to help Taiwan launching related preparations in advance. The government role is critical also because of the potential problem of conflict of interest caused by Elon Musk’s vast business operations in China. Second, as an alternative or supplement to undersea cables, Taiwan has been developing domestic low-earth-orbit (LEO) satellites to create backup communication systems. The pursuit has confronted impediments in financial, technological/industrial, spectrum/regulatory, human-capital, and political/strategic facets. Consistent with the whole-of-society approach, a U.S. public-private partnership could help alleviate some of these difficulties by empowering Taiwan’s society, government, and particularly related industries, thereby contributing to extended deterrence by rendering cable sabotage a much less worthy tactic. For example, if Taiwan can partner with existing U.S. or allied constellations (Kuiper, possibly others), it will be far cheaper and faster than financing a purely indigenous mega-constellation. To help reduce deployment cost and schedule risk, U.S. firms encouraged by the government can continue to provide relatively reliable launch options (e.g., via SpaceX or other providers) as they have for Taiwan’s FORMOSAT-5 and FORMOSAT-7/COSMIC-2, two satellites for remote sensing and global weather forecasting respectively. In addition, to help cope with the technological problems, existing U.S.–Taiwan programs (e.g., FORMOSAT-7/COSMIC-2) show that the U.S. can credibly provide system-integration know-how, mission design cooperation, and access to advanced technologies under government-to-government frameworks. Similar frameworks could be extended to communications constellations—e.g., joint research and development (R&D) on resilient waveforms, Inter-Satellite Links (ISL) technology, and space-domain awareness for satellite protection. Third, the U.S. should help Taiwan establish its own ability to repair damaged undersea cables. At present the building, maintenance, and repair of the global undersea communications cable system that carries most internet traffic are controlled by four major firms. Currently, Taiwan’s cable repairs rely heavily on fleets stationed in Japan, Singapore, the Philippines, and Malaysia under the Asia Pacific Marine Maintenance Service Agreement. Over-the-top provider

agreements and Indefeasible Right of Use contracts restrict the choice of repair contractors. This creates a structural dependency that could become extremely risky in the event of China's deliberate cable sabotage. Legally and bureaucratically, the U.S. government possesses several tools it could use to encourage or enable the assistance from SubCom, an American firm among the four in the oligopoly, to nurture Taiwan's domestic repair capability.

To help Taiwan cope with a Chinese quarantine/blockade of Taiwan, the role of U.S. extended deterrence is proposed to concentrate on boosting Taiwan's resilience, particularly in terms of energy sufficiency. Two types of U.S. supportive actions can be considered. The first type is to assist Taiwan with its revival of nuclear energy, thereby alleviating its dependency on liquidated natural gas, of which the supply counts on imports through maritime transport. President Lai Ching-te announced in March 2026 a government plan to restart Taiwan's Nuclear Power Plants (NPP) No. 2 and No. 3, which were fully decommissioned in 2021 and 2025 respectively. To help consolidate the safety of reactor operations at the aged NPP #2 & #3, the U.S. government could restore the previous assistance through U.S. Nuclear Regulatory Commission's Thermal-Hydraulic Code Applications and Maintenance Program (CAMP), which Taiwan started participating in 2011. By reactivating Taiwan's participation, the program could cover ageing management for 40+-year reactors, license-renewal best practice, probabilistic risk assessment, and stress-test protocols, which are all central to the review by Taiwan's Nuclear Safety Council (NUSC) of restart applications. On the vendor side, the Taiwan Power Company (Taipower) has contracted Westinghouse Electric to perform independent safety inspections at the NPP No. 3. In addition, U.S. vendors could also supply or refurbish reactor-core internals, control systems, turbines, and balance-of-plant upgrades tied to life-extension, which the U.S. International Trade Administration has identified as a multi-billion-dollar opportunity.

In addition, the management of nuclear waste has been at the heart of controversy over nuclear energy in the Taiwan society. The American Institute in Taiwan (AIT) had stated a year ago that Washington was ready to introduce advanced nuclear technologies, including those on nuclear-waste storage. Thus, a possible foundational task for the U.S. now would be to create a set of nuclear waste and backend fuel-cycle solutions, perhaps sponsored by the U.S. Department of Energy, which focused on: A) licensing and design support for expanded dry-cask storage at existing sites; B) options for centralized interim storage; and C) advanced cask technologies and monitoring. The U.S. government could also consider funding joint R&D on spent-fuel and high-level waste solutions. The actual transfer of know-how and hardware by U.S. firms can be either through firm-level direct contacts or facilitated by government midwifery. Furthermore, seeking social consensus on nuclear energy in Taiwan has been a thorny issue in recent years. Some DPP supporters remain strongly opposed to nuclear power. There may be limited space for the U.S. to exert direct influence on this issue. Yet U.S. government agencies, firms, private think tanks and consultancies can still generate credible, peer-reviewed cost and risk studies about various safety issues of nuclear power—especially over waste management and siting selection—in general, or against the specific background of Taiwan in particular.

The second type of actions is to promote Taiwan's progress on small modular reactor (SMR) technologies: Large-scale commercial export by the U.S. of SMR technologies is still constrained by licensing status, financing, supply-chain depth, and export-control/non-proliferation arrangements. From the viewpoint of extended deterrence, U.S. actions along this line to assist Taiwan entails a longer timeline than accelerating Taiwan's extension of pre-existing nuclear power facilities.

Several U.S. light-water SMR designs—NuScale, GE-Hitachi BWRX-300, Holtec SMR-160— have passed major R&D milestones and are being actively positioned for international markets. The U.S. Department of Energy (DOE) notes that its Advanced SMR R&D and earlier SMR Licensing Technical Support programs were explicitly created to accelerate “availability of U.S.-based SMR technologies into domestic and international markets.” There are U.S.-based SMR developers already operating projects in dozens of international markets, revealing that front-end services, feasibility work, and pre-deployment engineering are underway even where reactors are not yet built. The U.S. government has also set up soft-transfer mechanisms, such as the Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology (FIRST) program in partnership with Kazakhstan since 2022.

Considering the background above, there are several U.S. supporting actions on SMRs worth exploring.

(1) The U.S. State Department could consider bringing in Taiwan as a formal partner of FIRST, just like Kazakhstan. As mentioned above, the program aims to foster partner countries’ readiness for SMRs.

(2) The U.S. could consider conducting detailed feasibility studies jointly with Taiwan’s National Atomic Research Institute (NARI) or Nuclear Safety Commission (NSC), examining which U.S.-designed SMR technologies are technically and economically suitable for Taiwan’s specific conditions, such as grid integration with Taiwan’s existing power infrastructure, and factors about siting such as Taiwan’s seismic activity and limited land availability.

(3) The U.S. could consider providing Taiwan with classroom-based SMR simulators, ideally in academic institutions or research units, to train specialists in reactor operations, safety systems, and emergency response procedures before any licensing or construction decisions are made. This is critical to help nurture a new generation of nuclear specialists in Taiwan, balancing the impacts of previous phaseout of nuclear power.

(4) The U.S. could consider assisting Taiwan in developing a modern regulatory framework specifically designed for SMR licensing. The assistance could include technical exchanges with the U.S. Nuclear Regulatory Commission (NRC) on performance-based versus prescriptive regulatory approaches, workshops on SMR-specific safety assessment methodologies, and guidance on adapting international standards from the International Atomic Energy Agency (IAEA).

(5) Waste management of SMRs is more demanding than conventional reactors. Hence U.S. assistance could include technical consultations on consolidated interim storage facilities, deep geological repository site characterization methodologies, dry cask storage technology transfer, and regulatory frameworks for waste management. To be sure, the U.S. support will co-evolve with the global progress on clear waste management, a key issue not yet adequately resolved for conventional reactors and SMRs alike.

ACRONYMS AND DEFINITIONS

Abbreviation	Definition
ADIZ	Air Defense Identification Zone
AIT	American Institute in Taiwan
ASN	Alcatel Submarine Networks
B5G	Beyond 5G
CAMP	Code Applications and Maintenance Program
CCG	China Coast Guard
CCP	Communist Party of China
CGAOAC	Coast Guard Administration, Ocean Affairs Council
CGZTs	China's Gray-Zone Tactics
CMC	Central Military Commission
DPP	Democratic Progressive Party
EU	European Union
FIRST	Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology
GDP	Gross Domestic Product
GZTs	Gray-Zone Tactics
HCDS	Harpoon Coastal Defense System
HMN	Huawei Marine Networks
IAEA	International Atomic Energy Agency
ICPC	International Cable Protection Committee
ISL	Inter-Satellite Links
JEF	Joint Expeditionary Force
LEO	Low-Earth-Orbit
LNG	Liquefied Natural Gas
MND	Taiwan Ministry of National Defense
MSA	Maritime Safety Administration
NARI	Taiwan National Atomic Research Institute
NATO	North Atlantic Treaty Organization
NPP	Nuclear Power Plants
NRC	U.S. Nuclear Regulatory Commission
NSC	Taiwan Nuclear Safety Commission
NUSC	Taiwan Nuclear Safety Council
ODC	Overall Defense Concept
PLA	People's Liberation Army
R&D	Research and Development
RF	Radio Frequency
RISK	Risk mitigation, Information sharing, Systemic reform, Knowledge building
ROC	Republic of China
SMR	Small Modular Reactor
TASA	Taiwan Space Agency
TECRO	Taipei Economic and Cultural Representative Office
UAV	Unmanned Aerial Vehicle
UNCLOS	United Nations Convention on the Law of the Sea
USAID	U.S. Agency for International Development

1. Introduction

Military tensions between Taiwan and China have risen steadily since 2016, with the Chinese party-state under the leadership of Xi Jinping exerting coercive military pressures under growing suspicion of Taiwan's pursuit of *de jure* independence and, more importantly, eagerness to unify Taiwan with a possible timetable.¹ Beijing's saber rattling has evolved from traditional exercises of amphibious landing and attacks on Taiwan to new operations in closer proximity. Typical operations include naval and air circumnavigation around Taiwan, routine intrusion of Taiwan's air defense identification zone (ADIZ) and crossing of the median line of the Taiwan Strait, and, beginning in 2022, massive military drills to repeatedly simulate blockades or quarantines of Taiwan. Such operations are inclusive of gray-zone tactics (GZTs), an overarching concept that encompasses various types of interstate conflict behaviors short of acts of war and has drawn growing analytic attention globally.

Combining the simulation by the China Coast Guard (CCG) and the People's Liberation Army (PLA) with rehearsals of assaults, the most recent exercise titled "Justice Mission 2025" in December 2025 demonstrated unprecedented features. Declared exercise zones were the closest to Taiwan's coast ever recorded. Five of the seven zones overlapped with Taiwan's contiguous zone (12–24 nautical miles), and some reportedly encroached into its territorial waters (within 12 nautical miles). The total area covered by the seven zones was the largest ever designated for a Taiwan-centric exercise, effectively encircling the island and covering all critical supply routes. The PLA deployed a record-high 130 aircraft in a single 24-hour period, with 90 sorties crossing the Taiwan Strait median line.²

Whereas the short-term impact of China's simulation of quarantine/blockade may be more psychological than physical, another type of China's GZTs (CGZTs) produces immediate material impairment. On 2 February 2023, the "Taiwan-Matsu No. 2" undersea communication cable, which provides communications and data transmissions through internet and landline as well as mobile phones, was cut by a Chinese fishing vessel. Six days later, a Chinese cargo ship was suspected of damaging the "Taiwan-Matsu No. 3" undersea communication cable that provides the same services. On 3 January 2025, *Shunxin 39*, a cargo vessel controlled by a Hong Kong company with

¹ See, for instance, Philip S. Davidson, "Statement of Admiral Philip S. Davidson, U.S. Navy Commander, U.S. Indo-Pacific Command before the Senate Armed Services Committee on U.S. Indo-Pacific Command Posture," *U.S. Senate Committee on Armed Services*, 9 March 2021, accessed 16 September 2025, https://www.armed-services.senate.gov/imo/media/doc/Davidson_03-09-21.pdf; Mark F. Cancian et al., "The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan," *CSIS*, 9 January 2023, accessed 20 December 2025, <https://www.csis.org/analysis/first-battle-next-war-wargaming-chinese-invasion-taiwan>; and Asia Pacific Task Force, "PLA in Transition: U.S. Reports on China's Military (2020–2025)," *Beyond the Horizon*, 26 December 2025, accessed 30 December 2025, <https://behorizon.org/pla-in-transition-u-s-reports-on-chinas-military-2020-2025/>.

² Frederick W. Kagan et al., "China & Taiwan Update, Special Edition, December 31, 2025," *AEI*, 31 December 2025, accessed 3 January 2026, [https://www.aei.org/articles/china-taiwan-update-special-edition-december-31-2025/#:~:text=The%20PLA%20began%20conducting%20blockade,Taiwanese%20sovereignty%20and%20self%20defense](https://www.aei.org/articles/china-taiwan-update-special-edition-december-31-2025/#:~:text=The%20PLA%20began%20conducting%20blockade,Taiwanese%20sovereignty%20and%20self%20defense;); and John Dotson, "The PLA's 'Justice Mission-2025' Exercise Around Taiwan," *Global Taiwan Institute*, 2 January 2026, accessed 4 January 2026, <https://globaltaiwan.org/2026/01/pla-justice-mission-2025/#:~:text=There%20were%20a%20number%20of,not%20involved%20in%20the%20exercise.>

Chinese crew onboard, disabled its tracking system before severing a key undersea communication cable linking Taiwan to Asia and the U.S. through the Trans Pacific Express Cable System. On 25 February 2025, *Hongtai* 58, another vessel crewed by Chinese nationals, circled in waters about five nautical miles off the coast of Tainan, and then severed a cable connecting Taiwan and the Penghu Islands by dropping its anchor. The vessel and crew were immediately seized by Taiwan's coast guard, and the captain was sentenced to three-year imprisonment in June 2025. Given the crucial functions of the undersea communication cables to sustain Taiwan's civilian and military communications with the rest of the world, a synchronized, large-scale disruption of all or most of the communication cables by China would undermine Taiwan's international commercial transactions and undercut its military prowess, thereby imposing enormous pressures to coerce Taiwan into capitulation.

While Washington has since 2017 stepped up its extended deterrence efforts through arms sales and other assistance—though with a handful of exceptions—to shore up Taiwan's capability of self-defense against China's full invasion, no comparable actions are present to cope with the CGZTs above. To be sure, such CGZTs undertaken at a large scale can create no less decisive effect on forcing Taiwan into unification than a kinetic war. For various reasons to be elaborated afterwards, this report posits that it may be just as likely for Beijing to count on specific CGZTs than an all-out invasion to coerce Taiwan into unification in the next two years or so. In this context, bringing in the concept and practices of extended deterrence by the U.S. to forestall CGZTs would contribute to the research on both cross-strait stability and extended deterrence for at least two reasons. First, whereas there have been well-established dialogues on how U.S. extended deterrence affects the potential for a cross-strait kinetic war, such as the debate between U.S. strategic clarity versus ambiguity, there currently lacks systematic scrutiny of how extended deterrence may affect the potential use of CGZTs. To be sure, this lacuna stems partly from the fact that extended deterrence is typically conceived to prevent all-out wars. Second, while discussions about how CGZTs pose grave challenges to extended deterrence as conventionally defined have grown, no attention is paid to whether in some specific CGZT scenarios, the U.S. approach to extended deterrence may move along a logic not fully developed in its conventional thinking. This paper will attempt to address such lacunae.

2. Literature Review

The discussion in this section aims to, beyond identifying analyses of GZTs and CGZTs in general, highlight how it may contribute to gaps in those analyses. Hence the discussion is geared toward specific aspects related to the objective above, rather than toward comprehensive scrutiny.

2.1. GZTs in general

While state behaviors constituting GZTs have long been observed in human history, the concept as an analytic anchor became particularly noteworthy in Western analyses after Russian and Chinese aggressiveness in Europe (especially in Ukraine) and the South China Sea respectively surged sharply in the 2010s. Systematic studies of GZTs have emerged out of such background but have also stretched their time horizon backward. These studies share similar conceptual and empirical underpinnings in defining GZTs as all deliberate and systematic actions and operations—short of the use of force which constitutes an act of war in international law—that undermine the foundations integral to the target state’s national interest, usually—but not always—intended to facilitate other hostile actions to achieve further strategic goals. Examples of concrete forms of widely conceived GZTs are diplomatic maneuvering, economic coercion, intelligence and espionage activities, manipulation of information, cyberattacks, exercise of influence on a target’s domestic politics through various means, sabotage of the economic order or infrastructure, disruption of internal and external transports, impairing of social stability, and proxy war.³ They reflect a scope similar to , but somewhat broader than that of hybrid warfare, a concept in close affinity with GZTs.

Conceived as above, GZTs as a form of conflict exhibit major characteristics which distinguish GZTs from the tangible exercise of organized state violence abroad, according to the literature. At least three such features are amenable to what this report may contribute to. First, an incremental approach or salami style of action is typical of GZTs. Each GZT step often brings about only a small change in terms of influence, relative power, or the utility for attaining the overarching goal, while the cumulative effect of all GZTs combined could make a significant difference.⁴ Second, largely because of the incrementalism described above and the perceived negligible impact of individual acts of GZTs, motivations to deter GZT operations are usually flimsy.⁵ Third, conditioned by the strategic culture preoccupied with conventional scenarios of armed conflict, the U.S. has not integrated prevention and management of GZTs systematically into its approach to national security and foreign policy.⁶

³ Michael J. Mazar, *Mastering the Gray Zone: Understanding a Changing Era of Conflict* (Carlisle, PA: US Army War College Press, 2015), accessed 9 October 2025, <https://press.armywarcollege.edu/monographs/428>; Frank G. Hoffman, *Examining Complex Forms of Conflict: Gray Zone and Hybrid Challenges* (Washington, D.C.: National Defense University Press, 2018), accessed 13 October 2025, <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/1983462/examining-complex-forms-of-conflict-gray-zone-and-hybrid-challenges/>; Tahir Mahmood Azar, “Understanding Gray Zone Warfare from Multiple Perspectives,” *World Affairs*, 186(1), December 2022, 81-104; and Javier Jordan, “International Competition Below the Threshold of War: Toward a Theory of Gray Zone Conflict,” *Journal of Strategic Security*, 14(1), April 2021, 1-24.

⁴ Mazar, *op. cit.*; Azar, *op. cit.*; and Jordan, *op. cit.*

⁵ Mazar, *op. cit.*; and Azar, *op. cit.*

⁶ Mazar, *op. cit.*; and Hoffman, *op. cit.*

This report responds in three ways. First, the quarantine/blockade of Taiwan and sabotage of the undersea communication cables connecting Taiwan to the internet, when reaching a threshold level that immediately strangulates Taiwan—the focus of this report—are apparently not GZTs of an incremental nature, thereby entailing conceptual innovation. Second, recognizing the lack of motivation to deter them, where deterrence is conceived in a traditional sense, this report will shift to an alternative notion of deterrence to probe a feasible coping strategy. Third, this report will explore a possible U.S. role in deterring CGZTs against Taiwan that would minimize the cognitive impediment stemming from U.S. strategic culture.

2.2. CGZTs in particular

As the focus of CGZTs here is on the use of quarantines/blockades and the sabotage of undersea communication cables for internet, this section probes the literature about these two specific Chinese operations respectively. Four dimensions stand out regarding the quarantine/blockade approach. First, one of the main differences between a quarantine and a blockade is that the former imposes full stoppage of all types of material resources and personnel flowing into the target state by disconnecting land, air, or maritime transport links, while the latter does so only for selected categories without a complete disconnection. Under quarantine, accordingly, materials other than such categories remain accessible for the target state.⁷ As there were only a handful of quarantine cases in modern history comparable to a possible scenario in the Taiwan Strait, the conceptual distinction above seems to rest predominantly on the experience of the U.S. quarantine of Cuba during the 1962 missile crisis.⁸ Under the 1962 quarantine, only the naval shipping of offensive weapons to Cuba was barred. This report does not, however, assume such a clear-cut distinction in a real Taiwan contingency. To the degree that with either a quarantine or blockade, Beijing would seek to coerce Taiwan into unification rather than mere compliance to Beijing's limited demand, the restrictiveness of quarantine is likely to be no less than that of a blockade.

Second, whether the distinction between a Chinese quarantine and blockade of Taiwan is meaningful has to do with how Taiwan may suffer to different degrees. One view is that crucial necessities like food and medicine can still be shipped to Taiwan during a quarantine, while energy

⁷ Jason Lancaster, "Blockade: An Imperfect Strategy," *Center for International Maritime Security*, 1 May 2019, accessed September 17 2025, <https://cimsec.org/blockade-an-imperfect-strategy/>; Aric Ramsey, "Naval Quarantine: A Forceful Option Short of War," *U.S. Naval Institute*, December 2025, accessed 30 December 2025, <https://www.usni.org/magazines/proceedings/2025/december/naval-quarantine-forceful-option-short-war>; Bradley Martin et al., *Implications of a Coercive Quarantine of Taiwan by the People's Republic of China* (Santa Monica, CA: Rand, 2022), pp. 5-6; and Lonnie D. Henley, *Beyond the First Battle: Overcoming a Protracted Blockade of Taiwan* (CMSI China Maritime Reports 26) (Newport, RI: U.S. Naval War College China Maritime Studies Institute, 2023), pp. 1-2.

⁸ Since those material resources indispensable for Taiwan and subject to China's disruption discussed here—especially energy supplies—hardly flow in through air transport, air quarantine—usually in the form of no-fly zone—is not considered. From the 18th century to the present, there have been only three cases of naval or land quarantine: the British quarantine in 1720 of goods and personnel from Mediterranean vessels for fear of epidemic, the Austrian quarantine in the 1730s on travelers from Bosnia and Serbia along the land borders with the Ottoman Empire, and the U.S. quarantine of Cuba during the 1962 missile crisis.

supplies may be a lesser target than delivery of munitions.⁹ A contrasting perspective sees China's squeezing of Taiwan's imported Liquefied Natural Gas (LNG) and coal to be the likely objective of a quarantine, which may be fatal.¹⁰ This report echoes the latter conclusion and thus considers the distinction between quarantine and blockade further blurred, as far as the risk of energy supplies is concerned.

Third, a crucial issue is the possibility of escalation from quarantine to blockade and the countermeasures against both. Based on the premise that Beijing has defined quarantines as a maritime law enforcement action—usually characterized by flexibility in intensity and scope—and thus counted on the CCG and the Maritime Safety Administration (MSA) instead of the PLA for execution, some analyses propound that the escalation to armed conflict is unlikely.¹¹ Alternatively, focusing on scenarios of blockade which also include operations of quarantine, Cancian et al. and Martin depicted the various action levels along the escalatory ladder, where the peak level was a wider war, more as a continuum than as discrete choices independent of the influence from foregoing steps.¹² This report concurs with the second view by questioning the fundamental premises inherent in the first view. That escalation is avoidable rests predominantly on the aforementioned notion of quarantine as running below the threshold of war, whereas blockade is a war act. As discussed earlier, however, a Chinese quarantine that disrupts Taiwan's critical material supplies poses no less risk than a blockade to Taiwan's lifeline. Such a contingency may provoke Taiwan to react decisively with armed force and thereby render escalation inevitable. In addition, to the degree that the first view regards quarantine as enforcement of domestic laws, the implicit yet central presupposition of the "one-China policy," widely held by those countries with diplomatic ties with China, is at issue. Whereas this policy sustains normal engagements with China during peacetime, it can obscure the necessary policy choice for dispelling threats to regional stability if the regional stakeholders refrain from intervening in a severely destabilizing Chinese quarantine, purportedly a domestic condition of China under this policy.

Fourth, the countermeasures of either a lethal Chinese quarantine or blockade of Taiwan are widely probed. The studies employing a conventional notion of deterrence concentrate on whether and how Taiwan and its main allies such as the U.S. can count on, among other things, military capability to deter or defeat the actions.¹³ Other studies emerging amidst China's simulation of quarantine or

⁹ Bonny Lin et al., "How China Could Quarantine Taiwan: Mapping Out Two Possible Scenario," *CSIS*, 5 June 2024, accessed 2 December 2025, <https://www.csis.org/analysis/how-china-could-quarantine-taiwan-mapping-out-two-possible-scenarios>.

¹⁰ Craig Singleton, et al., "Chinese Coercion of Taiwan's Energy Lifelines: A Contest Taiwan and the West Can't Afford to Lose," *Foundation for Defense of Democracies*, 17 November 2025, accessed 5 December 2025, <https://www.fdd.org/analysis/2025/11/17/chinese-coercion-of-taiwans-energy-lifelines-a-contest-taiwan-and-the-west-cant-afford-to-lose/>.

¹¹ Ramsey, *op. cit.*; Lin et al., *op. cit.*; and Julia Famularo, *Great Inspectations: PRC Maritime Law Enforcement Operations in the Taiwan Strait* (China Maritime Report 48) (Newport, RI: Naval War College China Maritime Studies Institute, 2025), p. 1.

¹² Martin et al., *op. cit.*; Mark F. Cancian et al., *Lights Out? Wargaming a Chinese Blockade of Taiwan* (Washington, D.C.: 2025), pp. 51-52;

¹³ Henley, *op. cit.*; Martin et al., *op. cit.*; Michael Green et al., *Countering Coercion in Maritime Asia: The Theory & Practice of Gray Zone Deterrence* (Lanham, MD: Rowman & Littlefield, 2017), pp. 34-50;

blockade in recent years stress the importance of strengthening Taiwan's resilience as a higher priority than military power.¹⁴ While resilience boosting is nothing new in the discussions about Taiwan's self-defense, it is conceptually useful to enrich deterrence by denial through military power, especially when uncertainties loom large about the feasibility of using force.

Three facets of the analyses of China's threat to undersea communication cables for internet are noteworthy. First, undersea communication cables face two main types of security risks: the inside-out and outside-in threats. The former refers to unauthorized access to data flowing through the cables, often due to deliberate theft. The latter stems from damage or disconnection of cables ascribed to natural causes or human interference.¹⁵ While the second threat evokes this report's attention through the prism of CGZTs, the possible solutions scrutinized may mitigate the first threat as well.

Second, recent incidents of the second threat exhibit that China and Russia may have launched orchestrated efforts to operate in each other's main region of interest. In October 2023, a Chinese-registered vessel damaged two undersea data cables and a gas pipeline in the Baltic Sea. Then in November 2024, a Chinese-registered vessel cut undersea communication cables connecting Germany and Finland and Lithuania and Sweden respectively.¹⁶ Likewise, during December 2024 and January 2025, a Hong Kong-registered, Russian-operated cargo vessel rambled around for more than three weeks near Taiwan's Fangshan undersea communication cable landing station, making no commercial sense.¹⁷ Against this backdrop, this report will ponder a broad partnership between European and East Asian democracies, preferably backed by a meaningful U.S. role, as an issue-specific format of extended deterrence and a justified response to the authoritarian collaboration.

Third, prescriptions for coping with the aforementioned two threats, chiefly posed by China and Russia, place heavy emphasis on multinational cooperation, with or without U.S. leadership, to launch unequivocally tough reactions to the threats. Against the first threat, regional and global financial and development institutions or agencies are expected to shore up allied actions among democracies by providing necessary funds, in order for greater influence on the building, regulation, and maintenance/repairing of undersea communication cables. To facilitate this, obsolete rules of international law ought to be revised and the regulatory power of key multilateral organizations such as the International Cable Protection Committee (ICPC) should be shored up.¹⁸ Against the second

¹⁴ Singleton et al., *op. cit.*; Cancian et al., *op. cit.*, pp. 84-87; and Jackson Rice, *The Resilience of Taiwan's Energy and Food Systems to Blockade* (Ford Island, HI: Center for Excellence in Disaster Management & Humanitarian Assistance, 2023).

¹⁵ Mike Studeman, "Expert Q&A: Undersea Cables Under Attack, from Outside and Within," *The Cipher Brief*, 15 August 2025, accessed 12 November 2025, <https://www.thecipherbrief.com/undersea-cable-attacks>.

¹⁶ Sophia Besch and Erik Brown, "A Chinese-Flagged Ship Cut Baltic Sea Internet Cables. This Time, Europe Was More Prepared," *Carnegie Endowment for International Peace*, 3 December 2024, accessed 11 November 2025, <https://carnegieendowment.org/emissary/2024/12/baltic-sea-internet-cable-cut-europe-nato-security?lang=en>; and John Dotson, "Strangers on a Seabed: Sino-Russian Collaboration on Undersea Cable Sabotage Operations," *China Brief*, 7 June 2025, accessed November 12 2025, <https://jamestown.org/strangers-on-a-seabed-sino-russian-collaboration-on-undersea-cable-sabotage-operations/>.

¹⁷ Dotson, *op. cit.*

¹⁸ Daniel F. Runde et al., "Safeguarding Subsea Cables: Protecting Cyber Infrastructure amid Great Power Competition," *CSIS*, 16 August 2024, accessed 8 November 2025, <https://www.csis.org/analysis/safeguarding-subsea-cables>.

threat, multilateral actions, particularly with an emphasis on the U.S. pivotal role, are integral to proposed countermeasures. Examples include actions to beef up detective capability in order to identify malefactors, the various approaches along cooperative, competitive, or militaristic pathway in some or all of the building, maintenance, and restoration phases.¹⁹ The approach discussed above is largely applicable to bring together Taiwan and its democratic allies for dispelling the threats.

2.3. U.S. extended deterrence in the Taiwan Strait and the challenges posed by CGZTs

A longstanding topic of how the U.S. helps sustain peace and stability in the Taiwan Strait is about the optimal U.S. strategy to apply extended deterrence. Two competing views—strategic ambiguity and strategic clarity—have dominated the debate. As China has stepped up coercive military pressures on Taiwan since 2016, calls for greater U.S. strategic clarity have grown in the U.S. policy community.²⁰ Amidst the changing cross-strait security environment, however, there remains advocacy for strategic ambiguity, driven by the assessment of a lingering risk of *de jure* Taiwan independence and thus the lasting need for dual deterrence of both China and Taiwan.²¹ On the other hand, as Chang-Liao and Fang point out, the debate has revolved around preventing a kinetic war in the Taiwan Strait, while CGZTs may become a more likely approach than an all-out invasion in the near future.²² That is, CGZTs entail strategic deliberations beyond the preexisting ambiguity versus clarity debate.

[protecting-cyber-infrastructure-amid-great-power-competition](#); and Kristi Govella, “Undersea Cables, Geoeconomics, and Security in the Indo-Pacific: Risks and Resilience,” *Marine Policy* 180 (October 2025), pp. 6-7.

¹⁹ Peter Dombrowski and Bruce Jones, “A New Era of Undersea Conflict Is Here,” *Foreign Policy*, 21 March 2025, accessed 9 November 2025, <https://foreignpolicy.com/2025/03/21/undersea-cables-sabotage-hybrid-conflict-deterrence/>; Lane Burdette, “Leveraging Submarine Cables for Political Gain: U.S. Responses to Chinese Strategy,” *Journal of Public and International Affairs*, 5 May 2021, accessed 9 November, <https://jpia.princeton.edu/news/leveraging-submarine-cables-political-gain-us-responses-chinese-strategy>; and

²⁰ Joseph Bosco, “Time to End US Strategic Ambiguity on Taiwan,” *The Diplomat*, 14 June 2014, accessed March 1 2024; Richard Haass and David Sacks, “American Support for Taiwan Must Be Unambiguous,” *Foreign Affairs*, 2 September 2022, accessed March 3 2024, <https://www.foreignaffairs.com/articles/united-states/american-support-taiwan-must-be-unambiguous>; Miles Yu, “America’s Strategic Clarity in Defense of Taiwan: The Dangerous Illusion of Strategic Ambiguity,” *The Hudson Institute*, 31 October 2022, <https://www.hudson.org/defense-strategy/america-strategic-clarity-defense-taiwan-dangerous-illusion-strategic-ambiguity>; Kylie Del Rosario and Raymond Kuo, “Strategic Clarity and the Future of U.S.-Taiwan Foreign Relations,” *National Bureau of Asian Research*, 3 February 2022, accessed March 3 2024, <https://www.nbr.org/publication/strategic-clarity-and-the-future-of-u-s-taiwan-foreign-relations/>; and Oriana Skylar Mastro, “The Challenges of Deterrence in the Taiwan Strait,” *American Enterprise Institute*, 26 April 2023, accessed 27 February 2024, <https://www.aei.org/research-products/testimony/the-challenges-of-deterrence-in-the-taiwan-strait/>.

²¹ Thomas J. Christensen et al., “How to Avoid a War Over Taiwan: Threats, Assurances, and Effective Deterrence” *Foreign Affairs*, 12 October 2022, accessed October 14 2022, <https://www.foreignaffairs.com/china/how-avoid-war-over-taiwan>; Bonnie S. Glaser et al., “Taiwan and the True Sources of Deterrence,” *Foreign Affairs*, 30 November 2023, accessed 3 March 2024, <https://www.foreignaffairs.com/taiwan/taiwan-china-true-sources-deterrence>; Peter Harris and Jared McKinney, “Strategic Clarity or Calamity? Competing Logics of Deterrence in the Taiwan Strait,” *International Affairs* 100(3) (May 2024), pp. 1171–1187; and Michael Cunningham, “Should the USA Maintain Its Policy of Strategic Ambiguity Towards Taiwan?” *The Heritage Foundation*, 24 February 2024, accessed 3 March 2026, <https://www.heritage.org/china/commentary/should-the-usa-maintain-its-policy-strategic-ambiguity-towards-taiwan>.

²² Nien-chung Chang-Liao and Chi Fang, “The Case for Maintaining Strategic Ambiguity in the Taiwan Strait,” *The Washington Quarterly* 44(2) (June 2021), pp. 45-60.

Indeed, according to many studies on China's quarantine/blockade and sabotage of undersea communication cables aimed at Taiwan, these two specific CGZTs scrutinized in this report pose grave challenges to the U.S. approach to extended deterrence along three dimensions. First, the traditional choice between strategic clarity and ambiguity is not adequately relevant to extended deterrence of CGZTs.²³ For instance, whether U.S. strategic clarity may encourage Taiwan independence and whether ambiguity is necessary to alleviate the menace do not matter so much in the event of CGZTs. This is because U.S. commitment to forestalling CGZTs with force does not necessarily amount to the same commitment in the event of an all-out cross-strait armed conflict, to the degree that vast uncertainties loom large about how the U.S. and China will manage escalation.

Second, as expounded earlier, the scant attention in the U.S. strategic culture to GZTs is a root cause to hamper systematic planning of the countermeasures *ex ante* and *ex post*. Since this report concurs with the view that either a Chinese quarantine or blockade would likely escalate rapidly, as discussed above, Washington's concern with unwanted escalation may impede decisive actions to ensure extended deterrence of such a CGZT. Green et al. pointed out that the propensity of risk aversion in this regard is pervasive among policymakers worldwide and well recorded in the U.S. internal process of decision making.²⁴ The U.S. resolve to send a clear and credible signal to deter CGZTs, therefore, seems an open question.

Third, explorations of possible U.S. responses to the two specific CGZTs in question highlight potential problems in U.S. will and capability to prevent their threat to Taiwan. With respect to quarantine/blockade, those studies which stress the legal nature of quarantine as a short-of-war act seem unlikely to consider the U.S. use of force as critical.²⁵ Predicting a fast escalation from quarantine to blockade, Martin et al. reasoned that a U.S. counterblockade of China to bail out Taiwan is unlikely to succeed, partly because the sheer size of the Chinese economy can withstand the blockade for a longer time than the much smaller Taiwanese economy.²⁶ In addition, whereas the U.S. could either threaten economic sanctions on China for deterrence, or impose them if fatal CGZTs occur, successful sanctions necessarily entail a collective action joined by U.S. allies. Yet if the U.S. cannot successfully bring in enough allies, the sanctions would likely not work.²⁷ Military operations to break a Chinese blockade, on the other hand, will place heavy pressures on U.S. military assets.²⁸ This evaluation is largely consistent with the international response, led by the U.S., in a simulation of a Chinese blockade. Even when multilateral convoy operations take place to

²³ Matthew Turpin, "The Case for Greater Clarity and Less Ambiguity in the Taiwan Strait," *The Brookings Institution*, 20 March 2026, accessed 21 March 2026, <https://www.brookings.edu/articles/the-case-for-greater-clarity-and-less-ambiguity-in-the-taiwan-strait/>; Eric Chan, "Escalating Clarity without Fighting: Countering Gray Zone Warfare against Taiwan (Part 2)," *Global Taiwan Brief* 6(11), 2 June 2021, accessed 5 March 2026, <https://globaltaiwan.org/wp-content/uploads/2021/06/GTB-PDF-6.11.pdf>; Bonny Lin et al., "Competition in the Gray Zone," *Rand*, 30 March 2022, https://www.rand.org/pubs/research_reports/RRA594-1.html; and Jacob Stokes, "Resisting China's Gray Zone Military Pressure on Taiwan," *Center for a New American Strategy*

²⁴ Green et al., *op. cit.*, pp. 48-50.

²⁵ For instance, Lin et al., *op. cit.*

²⁶ Martin et al., *op. cit.* pp. 22-23.

²⁷ Howard J. Shatz et al., *Economic Deterrence in a China Contingency* (Santa Monica, CA: Rand, 2025), pp. 121-132.

²⁸ Martin et al., *op. cit.* p. 23.

ensure energy supplies to Taiwan, the U.S. and its allies would seek to avert kinetic situations resulting from escalation.²⁹ In preventing the ruining of undersea cables, Europe has displayed much more assertiveness than the United States. During 2003-2004, a series of multilateral mechanisms endorsed by NATO or the EU were established to bolster the resilience and security of the cables. In November 2024, it was proposed in a summit participated in by Nordic and Baltic leaders that a joint naval policing program be launched to protect undersea infrastructure against external threats, an extension of the Baltic air policing program already at work.³⁰ While excluding Chinese builders of international undersea cables, the U.S. has not moved similarly to what Europe has done to tackle possible Chinese sabotage in the Indo-Pacific. This might reflect a variation in the incentives for self-defense and extended deterrence. That said, for the U.S. to deter China's cable sabotage does not seem to be subject to as many inhibiting factors—as expounded in this section—as to deter China's quarantine/blockade. Hence the policy alternative of U.S. extended deterrence of cable sabotage in partnership with its Indo-Pacific allies still warrants consideration.

After the next section that dissects why quarantine/blockade and cable sabotage may be more likely than an all-out invasion for Beijing to choose in the near future, policy recommendations informed by what are suggested in the literature above will be proffered in the fourth section.

²⁹ Singleton, et al., *op. cit.*

³⁰ Besch and Brown, *op. cit.*

3. Specific CGZTs as More Likely Scenarios than All-Out Invasion

Whereas the most widely discussed scenario in recent years of major cross-strait military clash posing existential threat to Taiwan has been China's all-out invasion, three factors point to a greater likelihood for quarantine/blockade and sabotage of undersea communication cables, two specific CGZTs, to be Beijing's choice to coerce Taiwan into unification down the road. The evolving trend of China's intrusive actions against Taiwan in the past three years, Taiwan's defense posture that leaves less vulnerability to full invasion than to the two CGZTs, and the impacts of China's drastic purges of top military and civilian elites since the 20th Party Congress are probed below to highlight why the two CGZTs deserve serious consideration for extended deterrence of China now.

3.1. The evolving trend of China's intrusive actions

China's eye-catching intrusive actions against Taiwan in recent years have revolved around rehearsals of blockade/quarantine of Taiwan and the sabotage of undersea communication cables around Taiwan—two specific CGZTs—rather than those of a full invasion. Cross-strait military tensions have escalated sharply since 2016, after Taipei abstained from honoring the 1992 Consensus and Beijing shifted its priority on Taiwan policy from preventing Taiwan independence to coercing Taiwan into unification.³¹ Beijing's military pressures rose to an unprecedented level in August 2022, through the exercises one day after the then U.S. House Speaker Nancy Pelosi's Taiwan visit, which amounted to a simulated blockade of Taiwan.³² The simulation has since dominated all subsequent military drills against Taiwan.³³ Military drills occurred after major episodes of Taiwan's high-profile assertion of autonomy or rejection of Beijing's unification bid, including President Tsai's transit flight through the United States, President Lai's inaugural address in 2024, President Lai's 2024 National Day address, President Lai's 2024 transit flight through Hawaii and

³¹ Richard Bush, "From Persuasion to Coercion: Beijing's Approach to Taiwan and Taiwan's Response," *The Brookings Institution*, November 2019, accessed 6 March 2026, <https://www.brookings.edu/articles/from-persuasion-to-coercion-beijings-approach-to-taiwan-and-taiwans-response/>; "China's Military Coercion of Taiwan," *Australian Strategic Policy Institute*, accessed 26 February 2026, <https://www.pressurepoints.aspi.org.au/taiwan-and-the-taiwan-strait/chinas-military-coercion/chinas-military-coercion-of-taiwan/>; and Edan Morag, "The Dragon and the Clock—2027 as the Turning Point Year Between China and Taiwan," *The Institute for National Security Studies*, 4 January 2025, accessed 1 March 2026, <https://www.inss.org.il/publication/china-taiwan-2027/>.

³² Bonny Lin et al., "Tracking the Fourth Taiwan Strait Crisis," *CSIS*, 8 November 2023, accessed 2 February 2026, <https://chinapower.csis.org/tracking-the-fourth-taiwan-strait-crisis/>.

³³ Ming-shih Shen, "China's 'New New Normal' Military Exercises Against Taiwan and Their Implications," *The Prospect Foundation*, 2 January 2025, accessed 2 February 2026, <https://www.pf.org.tw/tw/pfch/13-11117.html#:~:text=In%20future%2C%20intelligence%20exchanges%20and,for%20National%20Defense%20Security%20Research.>; Amrita Jash, "China's Military Exercises Around Taiwan: Trends and Patterns," *Global Taiwan Institute*, 2 October 2024, accessed 1 February 2026, <https://globaltaiwan.org/2024/10/chinas-military-exercises-around-taiwan-trends-and-patterns/>; Bonny Lin and Brian Hart, "Analyzing China's Escalation After Taiwan President William Lai's National Day Speech," *China Power*, 5 November 2024, accessed 2 February 2026, <https://chinapower.csis.org/china-taiwan-joint-sword-2024b-coast-guard/>; Matthew Sperzel et al., "China-Taiwan Weekly Update, December 12, 2024," *Institute for the Study of War*, 12 December 2024, accessed 2 February 2026, https://understandingwar.org/wp-content/uploads/2025/04/China-Taiwan20Weekly20Update2C20December20122C2020242028PDF29_0.pdf; Chieh Chung, "Analyzing the PLA's Early April Exercises in the Taiwan Strait," *The Diplomat*, 17 April 2025, accessed 1 February 2026, <https://thediplomat.com/2025/04/analyzing-the-plas-early-april-exercises-in-the-taiwan-strait/>; and John Dotson, "The PLA's 'Justice Mission-2025' Exercise Around Taiwan," *Global Taiwan Institute*, 2 January 2026, accessed 1 February 2026, <https://globaltaiwan.org/2026/01/pla-justice-mission-2025/>.

Guam, President Lai's announcement of 17 national security measures in 2025, the U.S. decision to engage in arms sales to Taiwan at record-breaking USD 11.1 billion, and Japan Prime Minister Takaichi's comment on a "Taiwan contingency" in December 2025.

In all the military drills above, the focus on surrounding Taiwan, cutting off key ports, and isolating the island accounted apparently for a heavier weight than on a full-scale invasion marked by amphibious landing and seizure of key areas, considering: (A) scenario framing in China's official narratives; (B) how many services and domains were integrated, and domain coverage; and (C) the inclusion of central ports/sea-lanes and "joint seizure of comprehensive superiority" in the exercise objectives. While amphibious and air-assault elements were present in the drills, they were nested inside broader blockade/pressure packages, suggesting that, in resource terms, blockade-oriented joint operations have become the dominant template on which landing pieces are layered.³⁴

China's sabotage of the undersea communication cables around Taiwan has been on the rise, far beyond the two cases in 2025 mentioned above. Taiwan's National Security Bureau Director-General Tsai Ming-yen stated publicly in 2025 that during 2019-2023, the average frequency of damage occurring to each cable per year was slightly above 0.5, much higher than the global average of 0.2. He indicated that most of the damage was caused deliberately by vessels flying the flag of China or crewed by Chinese nationals.³⁵ Synthesizing actual incidents of damage and various suspicious evidence, there appears to be a systematically designed sequence in China's expansion of cable sabotage. Before 2025, the incidents concentrated on the cables connecting Taiwan and its outlying islands—Kinmen, Matsu, and Penghu. Yet the case of sabotage by the *Shunxin* 39 in January 2025 was the first one threatening Taiwan's international communication. It did not seem an isolated case, as the *Yi Peng* 3, a Chinese cargo ship, was suspected of severing two data cables in the Baltic Sea connecting Finland, Germany, Lithuania, and Sweden, in December 2024. In the eyes of Europe, it appeared possible that China might have colluded in this case with Russia, whose invasion of Ukraine had triggered Europe's security concern.³⁶ As China elevated the magnitude and broadened the scope of cable sabotage, new critical moves were made. In March 2025, Beijing disclosed a vessel-based device allegedly intended for civilian salvage and seabed mining which though could be readily used to cut undersea cable lines as deep as 4,000 meters (13,123 feet),

³⁴ Ming-shih Shen, *op. cit.*; Amrita Jash, *op. cit.*; Yasuyuki Sugiura, "Analysis of 'Joint Sword 2024B'—Focusing on Changes & Continuity from 'Joint Sword 2024A'," *SPF China Observer*, 4 March 2025, accessed February 4 2026, <https://www.spf.org/spf-china-observer/en/document-detail058.html>; Thomas Newdick, "China Launches Snap 'Warning' Drills Around Taiwan Simulating A Total Blockade," *The War Zone*, 29 December 2025, accessed February 3 2026; Al Jazeera Staff, "How are China's New War Games around Taiwan Different from Earlier Drills?," *Al Jazeera*, 30 December 2025, accessed 4 February 2026, <https://www.aljazeera.com/news/2025/12/30/how-are-chinas-new-war-games-around-taiwan-different-from-earlier-drills>; and Matthew Sperzel, et al., "Special Report: Surprise PRC Military Exercise Around Taiwan," *Institute for the Study of War*, 31 December 2025, accessed 3 February 2026, <https://understandingwar.org/research/china-taiwan/china-taiwan-special-report-december-31-2025/>.

³⁵ Chiu Tzu-Ling, "Eight Incidents of Cable Disconnection Happen around Taiwan Each Year and National Security Bureau Revealed Four Types of Human Sabatoge (in Chinese)," *Public TV News Network (Taiwan)*, 16 January 2025, <https://news.pts.org.tw/article/733972>.

³⁶ Edward Lucas, "Vortex: Stand-Off at Sea," *Center for European Policy Analysis*, 15 December 2024, accessed 4 February 2026, <https://cepa.org/article/vortex-stand-off-at-sea/>.

doubling the maximum depth of any existing undersea communication infrastructure.³⁷ According to officially announced records, no country had possessed such equipment before, revealing China's aggressiveness in such attempt. In March and September of 2025, Taiwan's Coast Guards intercepted Chinese vessels near Taiwan and Kinmen that undertook research-oriented undersea surveillance activities but was suspected of applying precision equipment to locate undersea cables.³⁸

3.2. Taiwan's defense postures

A comparison of Taiwan's defense postures as applied to an all-out invasion and the two specific CGZTs also shows that the first scenario may be less appealing to Beijing. Beginning in 2020, Taiwan has undertaken a comprehensive defense modernization driven by the Overall Defense Concept (ODC), achieving substantial progress in asymmetric warfare capabilities, indigenous weapons production, and force structure reform, all of which revolve around fighting a kinetic war. To highlight a few recent concrete actions, defense spending surged to 3.32 percent of GDP by 2026, marking the highest level since 2009. Taiwan successfully mass-produced anti-ship and air defense missiles two years ahead of schedule, commissioned its first indigenous submarine, and restructured conscription from four months to one year. Learning from Ukraine's extensive drone employment against Russia, Taiwan has rapidly expanded unmanned aerial vehicle (UAV) and unmanned surface vessel (USV) capabilities. The production of about 200,000 UAVs of various types has been planned for the next seven years. Together with the unmanned systems purchased from the U.S., they are intended to overwhelm PLA air defenses through mass and distributed operations.³⁹ The Lai Ching-te Administration has implemented two major special defense budgets. The 2022-2026 "Sea-Air Combat Power Improvement Plan" allocated NT\$240 billion (US\$8.6 billion), with roughly 64% directed toward indigenous missile production programs. In August 2025, the administration proposed an unprecedented NT\$1.25 trillion (US\$40 billion) special budget spanning 2026-2033, earmarked for asymmetric weapons systems including 200,000 UAVs, thousands of USVs, and urgent munitions stockpiling. The special budget remains nonetheless to be passed as of February 2026 after repeated blockings in the opposition-controlled parliament.⁴⁰

³⁷ Erin L. Murphy and Matt Pearl, "China's Underwater Power Play: The PRC's New Subsea Cable-Cutting Ship Spooks International Security Experts," *CSIS*, 4 April 2025, accessed 4 February 2026, <https://www.csis.org/analysis/chinas-underwater-power-play-prcs-new-subsea-cable-cutting-ship-spooks-international>.

³⁸ "Taiwan's Coast Guard Boat Stopped and Expelled Chinese Government Vessel *Yanping 21* due to Its Undersea Surveillance Activities in the Waters of Kinmen," (in Chinese) *Coast Guard Administration (Taiwan)*, 12 March 2025, accessed 3 February 2026, <https://www.cga.gov.tw/GipOpen/wSite/ct?xItem=166256&ctNode=13372&mp=999>; and "Taiwan's Coast Guard Boat Expelled Chinese Vessels of Scientific Research due to Their Intrusion into Taiwan's Territorial Waters," (in Chinese) *Coast Guard Administration (Taiwan)*, 28 September 2025, accessed 3 February 2026, <https://www.cga.gov.tw/GipOpen/wSite/ct?xItem=166325&ctNode=13378&mp=999>.

³⁹ Jonathan Harman, "Taiwan's Emerging Indigenous Drone Industry—An Overview," *Global Taiwan Institute*, 11 February 2026, accessed 14 February 2026, <https://globaltaiwan.org/2026/02/tw-drone-production/>.

⁴⁰ Aaron-Matthew Lariosa, "Taiwan Defense Report Highlights Area Denial Progress," *Naval News*, 23 November 2025, accessed 19 December 2025, <https://www.navalnews.com/naval-news/2025/11/taiwan-defense-report-highlights-area-denial-progress/>; John Dotson, "Taiwan's Defense Policies in Evolution," *Air University*, 21 April 2025, accessed December 17 2025, <https://www.airuniversity.af.edu/JIPA/Display/Article/4164821/taiwans-defense-policies-in-evolution/>; Matt Yu and Lee Hsin-Yin, "Underwater Footage of Taiwan's Submarine Prototype Released for First Time," *Focus Taiwan*, 8 February 2026, accessed 13 February 2026,

Apart from the myriad efforts to bolster its military capability against China's all-out invasion, Taiwan also enjoys formidable defensive geography that substantially complicates PLA invasion planning. The Taiwan Strait's width (approximately 130 kilometers at narrowest point) necessitates complex amphibious operations. Large-scale amphibious invasion ranks among the most difficult military operations, requiring precise coordination across air, naval, ground, and logistics domains. Taiwan's coastline offers limited suitable landing beaches, mostly concentrated along the western coast, allowing defensive concentration. Systematic, carefully designed assessments backed by international expertise of China's invasion occurring at a time between 2017-2030, most of which presume U.S. direct interference, predict different results in terms of whether China may reach its political goal.⁴¹ Yet most of them share the perspective that effective and timely improvement in Taiwan's self-defense capability can help Taiwan hold out longer against China's full invasion before the U.S. intervenes directly. The Lai Administration is apparently expediting such efforts.

The element in Taiwan's defense posture most relevant to China's quarantine/blockade is its assets deployed by the Coast Guard Administration, Ocean Affairs Council (CGAOAC). In 2018, Taiwan launched a program to build 141 Coast Guard vessels by 2027 with a budget exceeding roughly US\$1.1 billion. The CGAOAC expenditures were for the first time incorporated into the defense budget calculation in 2026, following NATO standards. During China's December 2025 "Justice

<https://www.cga.gov.tw/GipOpen/wSite/ct?xItem=166325&ctNode=13378&mp=999>.

<https://focustaiwan.tw/politics/202602080004>; John Dotson, "Taiwan Initiates Its New One-Year Military Conscription Program," *Global Taiwan Institute*, 7 February 2024, accessed 6 December 2025,

<https://globaltaiwan.org/2024/02/taiwan-initiates-its-new-one-year-military-conscription-program/>; and Joseph Yeh, "Taiwan Could Be Defense Breach if Special Budget Not Passed: Defense Chief," *Focus Taiwan*, 11 February 2026, accessed 13 February 2026, <https://focustaiwan.tw/politics/202602110007>.

⁴¹ Those which predict that China would fail or at least be unlikely to prevail include William Murray and Ian Easton, "The Chinese Invasion Threat: Taiwan's Defense and American Strategy in Asia," *Naval War College Review* 72(1), Winter 2019; James Lacey, "How Does the Next Great Power Conflict Play Out? Lessons from a Wargame," *War on the Rocks*, 22 April 2019, accessed 10 January 2026, <https://warontherocks.com/2019/04/how-does-the-next-great-power-conflict-play-out-lessons-from-a-wargame/>; Stacie Pettyjohn, Becca Wasser and Chris Dougherty, "Dangerous Straits: Wargaming a Future Conflict over Taiwan," *Center for a New American Security*, 15 June 2022, accessed 11 January 2026, <https://www.cnas.org/publications/reports/dangerous-straits-wargaming-a-future-conflict-over-taiwan/>; Mark F. Cancian, Matthew Cancian, and Eric Heginbotham, "The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan," *Center for Strategic and International Studies*, 9 January 2023, accessed 20 December 2025, <https://www.csis.org/analysis/first-battle-next-war-wargaming-chinese-invasion-taiwan>; and Jeffrey Michaels and Michael John Williams, "A Wargame to Take Taiwan, from China's Perspective," *War on the Rocks*, 7 October 2025, accessed 19 December 2025, <https://warontherocks.com/2025/10/a-wargame-to-take-taiwan-from-chinas-perspective/>. Those which predict otherwise include Kyle Mizokami, "The United States Military 'Failed Miserably' in a Fake Battle Over Taiwan," *Popular Mechanics*, 2 August 2021, accessed 11 January 2026, <https://www.popularmechanics.com/military/a37158827/us-military-failed-miserably-in-taiwan-invasion-wargame/>; Richard Bernstein, "The Scary War Game Over Taiwan That the United States Loses Again and Again," *RealClear Investigations*, 17 August 2020, accessed 12 January 2026, <https://www.realclearinvestigations.com/articles/2020/08/17/the-scary-war-game-over-taiwan-that-the-us-loses-a-gain-and-again-124836.html>; and Ian Sullivan, "'No Option is Excluded' — Using Wargaming to Envision a Chinese Assault on Taiwan," *Mad Scientist Laboratory*, 1 July 2021, accessed 12 January 2026, <https://madsciblog.tradoc.army.mil/337-no-option-is-excluded-using-wargaming-to-envision-a-chinese-assault-on-taiwan/>.

Mission 2025” exercises that simulated blockade operations, the CGAOAC forces monitored and documented China’s activities but without physical interdiction.⁴² The capability of CGAOAC to break a quarantine or blockade hinges critically on reinforcement by the Navy, of which a commitment was made by the Ministry of National Defense in January 2025.⁴³ Above all, Taiwan’s land-based anti-ship missile forces are a crucial underpinning of its counter-blockade capability. The Harpoon Coastal Defense System (HCDS) acquisition of 400 missiles and 100 mobile launchers, together with the indigenous Hsiung Feng II/III missiles on mobile launchers provide additional firepower. The Navy’s planned “Littoral Combatant Command,” scheduled to achieve initial operational capability in July 2026, will integrate anti-ship missiles, small missile corvettes, mine-laying vessels, and unmanned systems to further boost the capability.⁴⁴ The submarine force is yet another component. Taiwan is now gradually erecting an eight-submarine fleet, planned to be completed by 2038, on top of the two aging and one newly commissioned submarine, to counter the PLA Navy’s numerical superiority.⁴⁵

Compared to the resistance to China’s full invasion, Taiwan’s readiness to dispel Chinese blockade or quarantine operations faces greater challenges. First and foremost are the myriad structural disadvantages Taiwan faces—energy import dependency, geographic isolation, and CGAOAC’s numerical inferiority. Even in limited quarantine scenarios, the commercial shipping indispensable for the supply of crucial material resources and goods is likely to be severely disrupted by insurance premium spikes, shipping delays, and corporate risk aversion, without China directly stopping incoming vessels. Taiwan lacks the capacity to escort commercial ships through quarantine zones or to provide credible protection guarantees to shipping companies. In full maritime quarantine or military blockade scenarios, the CGAOAC cannot break China’s encirclement without naval support. Yet Taiwan’s naval intervention against China’s alleged law enforcement quarantine risks international perception of Taiwanese escalation, apart from possible international pressure for negotiated resolution rather than military confrontation to resolve a perceived domestic issue. In addition, Taiwan’s Navy would confront the PLA Navy, the world’s largest navy by hull count with advanced capabilities. Most importantly, energy exhaustion timelines impose critical constraints.

⁴² Staff Writer, “Taiwan Plans Defense Budget Increase to Over 3% of GDP,” *The Defense Post*, 21 August 2025, accessed 8 February 2026, <https://thedefensepost.com/2025/08/21/taiwan-defense-budget-increase/>; Christopher Johnstone and Bonny Lin, “Responding to a More Coercive Chinese Coast Guard and a Potential PRC Quarantine of Taiwan,” CSIS, 7 June 2024, accessed 8 February 2026, <https://www.csis.org/analysis/responding-more-coercive-chinese-coast-guard-and-potential-prc-quarantine-taiwan>; and Sperzel, et al., *op. cit.*

⁴³ Reuters, “Taiwan Navy to Protect Sea Cables if Needed, Defence Minister Says,” *Reuters*, 16 January 2025, accessed 8 February 2026, <https://www.reuters.com/world/asia-pacific/taiwan-navy-protect-sea-cables-if-needed-defence-minister-says-2025-01-16/>.

⁴⁴ John Dotson, “Taiwan’s New Special Defense Budget Emphasizes Indigenous Anti-Ship Weapons Production,” *Global Taiwan Institute*, 3 November 2021, <https://globaltaiwan.org/2021/11/taiwans-new-special-defense-budget-emphasizes-indigenous-anti-ship-weapons-production/>; Matt Yu and Sean Lin, “Taiwan to receive 1st Harpoon missile defense systems around New Year,” *Focus Taiwan*, 20 October 2025, accessed 7 February 2026, <https://focustaiwan.tw/politics/202510200015>; and “Taiwan Will Deploy 1400 Anti-ship Missiles by 2026,” *Global Defense Corp*, 13 March 2026, accessed 19 March 2026, <https://www.globaldefensecorp.com/2026/03/13/taiwan-will-deploy-1400-anti-ship-missiles-by-2026/>.

⁴⁵ Ming-Shih Shen, “The Development of Taiwan’s Asymmetric Combat Capabilities: A Case Study of the IDS and Military Interactions Between the U.S. and Taiwan,” *The Taiwan Strategists*, No. 20 (December 2023), pp. 1-18.

With stockpiles that would endure for about one month for coal, eleven days for natural gas, and three months for oil amidst total cutoff of imports, the risk of societal breakdown within months would rise sharply.⁴⁶ In addition, various attacking operations against Taiwan's strategic reserves could further shorten survival windows.

As in the case of quarantine/blockade, Taiwan's countermeasures against sabotage of undersea communication cables have been bolstered rapidly of late but have not yet progressed far enough. In January 2026, Taiwan's Legislative Yuan passed amendments to seven laws designed to comprehensively strengthen protection, management, and enforcement mechanisms for undersea cables and pipelines. The amendments aim to deter malicious damage and regulatory violations, address long-standing security challenges, and underscore cable security as a core pillar of national resilience.⁴⁷ Beginning in early 2025, the Navy started providing support for CGAOAC to prevent cable disruption. Taiwan's Ministry of National Defense (MND) detailed establishment of four "key surveillance zones" in waters off Yilan County's Toucheng Township, New Taipei's Bali District, Pingtung County's Fangshan Township, and Penghu. The Navy employs radar and electronic intelligence systems to detect vessels stalling, demonstrating unusual speed changes, or following suspicious trails. The Navy will notify CGAOAC about suspicious activities to facilitate evidence gathering, inspection, or seizure, and deploy vessels if requested by CGAOAC.⁴⁸ On its own, the Navy has expedited expansion of the Submarine Cable Automatic Warning System to enhance early detection of vessels approaching cable routes. The system integrates radar, satellite imaging, and electronic intelligence to reduce response times and enable intervention, preferably before sabotage occurs.⁴⁹

Despite the incremental efforts above, Taiwan's readiness to protect undersea communication cables from Chinese sabotage seems limited in comparison with its countermeasures for a kinetic war, characterized by nascent institutional frameworks but insufficient maritime patrol capacity and real-time interdiction capability. Taiwan recognized the threat relatively late, with systematic responses

⁴⁶ Chen Lifang, "The Stock Level of Natural Gas in March and April is Announced," (in Chinese) *United Daily News*, 10 March 2026, accessed 15 March 2026; Yang Rixing and Huang Yourong, "The Stock Level of Natural Gas Is Stable for the Time Being, with Efforts to Ensure the Level in April," (in Chinese) *IEK Net*, 6 March 2026, accessed 15 March 2026, https://ieknet.iek.org.tw/ieknews/news_open.aspx?nsl_id=14244576e6104e9eab5cca971ba0f69c; Stella Robertson, "How Long Taiwan Can Keep Its Lights On," *Chung-Hua Institution for Economic Research*, 10 November 2025, accessed 14 March 2026, <https://www.cier.edu.tw/en/institution-en/29418/>; Li Jiaying, "How Long Can Taiwan's Food Stockpiles Last for? The Self Sufficiency Rate of Food Is about 30%," *The Storm Media*, 19 August 2022, accessed 15 March 2026, <https://www.storm.mg/article/4477286>; and Bonny Lin et al., "How China Could Blockade Taiwan," *CSIS*, 22 August 2024, accessed 14 March 2026, <https://features.csis.org/chinapower/china-blockade-taiwan/>.

⁴⁷ Tsai Yun-jung and William Hetherington, "Amendments to Protect Undersea Cables Take Effect," *Taipei Times*, 12 January 2026, accessed 10 February 2026, <https://www.taipeitimes.com/News/taiwan/archives/2026/01/12/2003850453>.

⁴⁸ Focus Taiwan, "Taiwan to Strengthen Surveillance near Undersea Cables," *Overseas Community Affairs Council*, 8 January 2025, accessed 10 February 2026, <https://ocacnews.net/article/388951>.

⁴⁹ Gahon Chia-Hung Chiang, "Countering China's Subsea Cable Sabotage," *Global Taiwan Institute*, 19 March 2025, accessed 11 February 2026, <https://globaltaiwan.org/2025/03/countering-chinas-subsea-cable-sabotage/>.

only materializing in 2025-2026 following multiple successful sabotage incidents.⁵⁰ The legislative amendments represent important institutional foundations for long-term cable security architecture. Nonetheless, critical capability gaps persist. Taiwan's GCAOAC and Navy lack sufficient patrol vessels to maintain constant surveillance across all cable routes, particularly in Taiwan's extensive exclusive economic zone (EEZ). Even with the 141-vessel GCAOAC expansion program to be completed in 2029,⁵¹ achieving comprehensive cable route coverage requires decades of sustained investment. Current surveillance zones protect only four key areas, leaving large swaths of cable infrastructure vulnerable. In addition, real-time interdiction capability remains questionable. Identifying suspicious vessels provides limited value if Taiwan cannot board, inspect, or deter them before sabotage occurs. Chinese vessels frequently operate under flags of convenience, complicating legal jurisdiction. Adverse weather conditions prevented Taiwan from boarding the *Shunxin 39* in January 2025 despite suspicions of cable damage, further illustrating practical enforcement constraints.⁵² Finally, cable repair timelines impose additional vulnerabilities. Major cable breaks require specialized repair ships—which Taiwan lacks completely now—and weeks to months for restoration depending on depth, location, and weather. With its much impaired or even totally undermined internet capacity for extended periods, which incurred prohibitively heavy economic and political costs, Taiwan would be subject to tremendous pressures for coerced negotiation with China.

3.3. China's drastic purges of top military and civilian elites since the 20th Party Congress

A major characteristic of China's elite politics in the Xi Jinping era has been the massive crackdown on the party-state cadres and officials, primarily (but not entirely) through the anti-corruption campaign. The total number of disciplined cadres, the horizontal width in terms of organizational variety, and vertical scope in terms of administrative level of the crackdown are unprecedented in China's reform era.⁵³ Above all, the magnitude appears to have grown steadily, as the number of disciplined cadres each year has increased after the ending of each Party Congress in the Xi era: 182,000 – 527,000 during 2013 and 2017 after the 18th Party Congress, 587,000 – 627,000 during 2018 and 2022 after the 19th Party Congress, and 610,000, 889,000, and 983,000 in 2023, 2024, and 2025 respectively after the 20th Party Congress.⁵⁴

⁵⁰ Jaime Ocon, "China's Undersea Cable Sabotage and Taiwan's Digital Vulnerabilities," *Global Taiwan Institute*, 4 June 2025, accessed 13 February 2026, <https://globaltaiwan.org/2025/06/taiwans-digital-vulnerabilities/>; and Reuters, *op. cit.*

⁵¹ "The Plan for Boosting Capabilities of Piers and Vessels for GCAOAC," (in Chinese), *Fleet Branch, GCAOAC*, 20 August 2021, accessed 13 February 2026, <https://www.cga.gov.tw/GipOpen/wSite/ct?xItem=84956&ctNode=8446&mp=9997>.

⁵² Reuters, *op. cit.*

⁵³ Minxin Pei, "From Purge to Control: A Recent Pivot in Xi Jinping's Anti-Corruption Crackdown," *China Leadership Monitor*, Issue 83, March 2025, accessed 17 March 2026, <https://www.prcleader.org/post/from-purge-to-control-a-recent-pivot-in-xi-jinping-s-anti-corruption-crackdown>; and Jingyuan Qian and Feng Tang, "Campaign-style Personnel Management: Task Responsiveness and Selective Delocalization during China's Anti-corruption Crackdown, 2013–2020," *The China Quarterly*, 256 (May 2023), pp. 1-20.

⁵⁴ Pei, *op. cit.*; Qian and Tang, *op. cit.*; "Discipline Inspection, Supervision Work Yielded Notable Results in 2024: Report," *People's Daily Online*, 24 February 2025, accessed 17 March 2026, <https://en.people.cn/n3/2025/0228/c90000-20282636.html>; and Cao Yin, "China's Anti-graft Efforts Deepen in 2025, with 115 Senior Officials Probed," *China*

Aside from the numerical surge, the recent round of purges after the 20th Party Congress is also unique in terms of the sharply intensified removals of high-ranking PLA officers. During 2022-2026, there have been 101 confirmed or likely cases, most of which occurred after the 20th Party Congress, of two-star and three-star generals with incumbent positions who underwent disciplinary sanctions, accounting for 52% of the 176 key PLA posts staffed by the senior officers. Among the generals were five of the seven members of CCP's Central Military Commission (CMC)—the supreme organ of China's military command—formed after the 20th Party Congress, two defense ministers, and ten commanders-in-chief or leading political commissars of China's five theatrical commands.⁵⁵ A major consequence of the staggering purges now widely assessed in the West is the myriad adverse impacts on PLA's combat capability in the near future, including geared toward a cross-strait invasion. The crackdown clearly reflected Xi's lack of trust in the performance, integrity, or political loyalty in various purges, and potentially on the part of PLA in general. With a significant portion of the key PLA posts yet to be or newly refilled in interim or acting capacity, such as the CMC vice chair overseeing military operations, director of the Joint Staff Department, leaders and political commissars in most of the five theatrical commands, and commanders of the PLA Army, Navy, Air Force, and Armed Police, it takes a considerably longer period for the newcomers to acquire experience and operational adeptness required for combat missions. A major campaign against Taiwan, for instance, entails complex tasks and steps for integration and joint operation of various services, posing a daunting challenge to the neophytes. Even in the two military exercises against Taiwan in 2025, there were already clues that pointed to likely abnormalities as a result of the purges. For example, there was an unusually long lag between the triggers in cross-strait relations and Beijing's military backlashes. The exercise in March ran short of many components indispensable for a realistic simulation of blockade. Finally, the sweeping purges would inevitably deliver a heavy blow to the PLA morale, further compromising the short-term viability of a full invasion.⁵⁶

Daily, 17 January 2026, accessed 18 March 2026,

<https://www.chinadaily.com.cn/a/202601/17/WS696b0100a310d6866eb344e6.html>.

⁵⁵ Bonny Lin, "The Purges Within China's Military Are Even Deeper Than You Think," *CSIS*, 24 February 2026, accessed 18 March 2026; China Power Project, "CSIS Database of Chinese Military Purges," *China Power*, 20 February 2026, accessed 18 March 2026; and "Xi Jinping, the Chinese Military and the Struggle for Power," *Manohar Parrikar Institute for Defence Studies and Analyses*, n.d., accessed 17 March 2026.

⁵⁶ M. Taylor Fravel, "Is China's Military Ready for War?," *Foreign Affairs*, 18 July 2025, accessed 19 March 2026, <https://www.foreignaffairs.com/china/chinas-military-ready-war-xi-jinping-taylor-fravel>; Eduardo Jaramillo and Michael Donmoyer, "Military Purges at China's Fourth Plenum Have Implications for Readiness," *Center for Naval Analysis*, 19 November 2025, accessed 20 March 2026, <https://www.cna.org/our-media/indepth/2025/11/military-purges-at-chinas-fourth-plenum-have-implications-for-readiness>; Arthur S. Ding, "China After General Zhang Youxia's Purge," *The Prospect Foundation*, 3 February 2026, accessed 19 March 2026, <https://www.pf.org.tw/en/pfen/13-11796.html>; Joe Varner, "Xi Jinping's Military Purge Creates Risks: Joe Varner in Real Clear World," *MacDonald-Laurier Institute*, 20 February 2026, accessed 19 March 2026, <https://macdonaldlaurier.ca/xi-jinpings-military-purge-creates-risks-joe-varner-in-real-clear-world/>; Bonny Lin et al., "202602 CSIS--Assessing Xi's Unprecedented Purges of China's Military: Key Developments and Potential Implications," *CSIS*, 24 February 2026, accessed 19 March 2026, <https://www.csis.org/analysis/assessing-xis-unprecedented-purges-chinas-military-key-developments-and-potential>; and Chia Shimin and James Char, "Will China's Stalinesque Purges Sabotage Its Military Ambitions?," *The Diplomat*, 20 March 2026, accessed 21 March 2026, <https://thediplomat.com/2026/03/will-chinas-stalinesque-purges-sabotage-its-military-ambitions/>.

4. U.S. Extended Deterrence for Taiwan in Light of the Fifth-Wave Deterrence Theory

4.1. The approach of the fifth-wave deterrence theory to deterring GZTs

Given the rising probability of the two CGZTs, and the challenges to deter such CGZTs discussed in the literature review, this report proposes to explore how U.S. extended deterrence of CGZTs against Taiwan entails a relatively new approach rooted in a gradually increasing number of analyses in recent years, sometimes known as the fifth-wave deterrence theory. To synthesize its main views relevant to this report's arguments in the analysis, this new wave attempts to bring in the following conceptual innovations and empirical reorientations.⁵⁷ First, the growing significance of hybrid threats is the key background that motivates the fifth wave. Conceptually akin to GZTs, hybrid threats combine modern instruments of statecraft to gain advantage while avoiding retaliation, often through ambiguity, low-level coercion, and actions below the threshold of open war. The literature emphasizes that hybrid threats exploit the defender's dilemma: responding too weakly invites more coercion, while responding too strongly risks escalation. This dilemma is particularly thorny when a country considers extended deterrence to protect its allies rather than itself. Second, given all the aforementioned challenges to deterring the aggressive actions by elevating the cost from retaliation against the initiator, the fifth wave stresses the GZT recipient's resilience to withstand the impacts of GZTs after they occur. Potent resilience cancels out the expected effectiveness of GZTs, thereby dampening the incentive to launch such operations. Therefore, the resilience-centric approach marks a shift from deterrence by punishment to deterrence by denial through the recipient's social and institutional robustness. In the case of extended deterrence, for a country to bring down its allies' vulnerabilities to GZTs, it is far less likely to face the defender's dilemma mentioned above. Third, GZTs involve operations and disruptions beyond military aspect, such as economic, social, psychological, technological, etc. Therefore, resilience-building entails an inclusive model which aims to boost resilience across various issue domains vulnerable to particular GZTs, and to foster cooperation and joint preparedness by all relevant actors which are integrated into a comprehensive system. In this way, vital security responsibilities are devolved from the state to market and societal actors while the state retains a coordinating role.

4.2. Forestalling and surviving sabotage of undersea communication cables

U.S. extended deterrence to enhance Taiwan's resilience against undersea cable cuts necessitates

⁵⁷ Sean Monaghan, *Detering Hybrid Threats: towards a Fifth Wave of Deterrence Theory and Practice*, Hybrid CoE Paper 12–4 (The European Centre of Excellence for Countering Hybrid Threats, 2022); Tim Sweijs and Samuel Zilincik, "The Essence of Cross-Domain Deterrence," in *Netherlands Annual Review of Military Studies 2020*, ed. Frans Osinga and Tim Sweijs (TMC Asser Press, 2020), p. 129; Michael A. Rostek, Peter Gizewski, *Deterrence Through Whole-of-Society Resilience – Meeting the Challenge of Hybrid Threats in the Grey Zone* (Kingston, Ontario: Center for International and Defence Studies, Queen's University, 2025); Tim Sweijs and Samo Zilincik, *Cross Domain Deterrence and Hybrid Conflict* (The Hague, Netherlands: The Hague Centre for Strategic Studies, 2019); Tim Prior, "Resilience: The 'Fifth Wave' in the Evolution of Deterrence," in *Strategic Trends 2018: Key Developments in Global Affairs*, ed. Martin Zapfe and Oliver Thränert (Zürich, Switzerland: Center for Security Studies at ETH Zürich, 2018); and Therese F. Tracy, "Coercive Deterrence: Adapting Deterrence for Strategic Competition with China," *U.S. Army War College*, 16 September 2025, accessed 25 March 2026, <https://publications.armywarcollege.edu/News/Display/Article/4305100/coercive-deterrence-adapting-deterrence-for-strategic-competition-with-china/>.

two types of actions: to deter such sabotage from happening, and to make Taiwan resilient with fallback options to sustain internet connectivity if the sabotage occurs. Given that the cable disruption affects regional countries as well, as shown in the case of Trans Pacific Express Cable System, preventing the sabotage warrants joint actions involving all the countries in an orchestrated effort.

Considering regional countries' stances toward security threats from China and their current security ties with the U.S., Japan and the Philippines appear to be immediate candidates to work together with the U.S. and Taiwan to deter the sabotage. Due to each country's longstanding bilateral military alliance or partnership with the U.S., the U.S. has stood firmly behind them to manage security risks from and territorial disputes with China in recent years. Taking the collective actions in Europe to curb cable disruption in the Baltic Sea as a reference point, a number of concrete tasks can be planned and implemented by an initially minilateral coalition, perhaps subsequently broadened to a multilateral one, in the Indo-Pacific. The parallel can be drawn between Europe because, among other things, the U.S. has maintained military presence and undertaken joint operations in both regions, regardless of whether they rest on a single multilateral architecture or an amalgamation of hub-and-spoke ties. Accordingly, whether in its incipient or subsequent stage, the coalition in the Indo-Pacific can be linked, perhaps under the U.S. steering, to the existing multilateral mechanisms in Europe. Emanating from such a link could vary from exchanges and sharing of information and know-how, to cross-reference of technical expertise, and hardware or software transfers.

First, a scheme for a concrete joint operation to protect the cables, preferably nested in an issue-specific institution, should be set up. A reference is NATO's Baltic Sentry and Maritime Centre for Security of Undersea Infrastructure, launched in 2025.⁵⁸ In fact, Taiwan has taken a preliminary step toward international collaboration for cable protection. Foreign Minister Lin Chia-lung launched the Management Initiative on International Undersea Cables, known as RISK (risk mitigation, information sharing, systemic reform, knowledge building), on October 28, 2025, at the Taiwan-Europe Subsea Cable Security Cooperation Forum. The initiative aims to bring together governments, industries, and experts to protect submarine cable networks through four pillars: (1) risk mitigation through enhanced emergency repair and backup capabilities via transnational coordination; (2) information sharing through threat intelligence exchanges and early warning mechanisms; (3) systemic reform by reviewing international and domestic regulations for addressing hybrid threats; and (4) knowledge building through professional training and practical exchanges.⁵⁹ RISK reflects Taiwan's awareness of the need to bring together like-minded democracies against the threat and highlights the nature of the cables as a global public good requiring collective action. It

⁵⁸ "NATO Launches 'Baltic Sentry' to Increase Critical Infrastructure Security," *NATO*, 14 January 2025, 26 March 2026, <https://www.nato.int/en/news-and-events/articles/news/2025/01/14/nato-launches-baltic-sentry-to-increase-critical-infrastructure-security>; and Sean Monaghan et al., "NATO's Role in Protecting Critical Undersea Infrastructure," *CSIS*, 19 December 2023, accessed 26 March 2026, <https://www.csis.org/analysis/natos-role-protecting-critical-undersea-infrastructure>.

⁵⁹ Lin Chia-lung, "RISK Initiative: Taiwan's Bold Step to Safeguard Undersea Cables," *The Jerusalem Post*, 28 January 2026, accessed 25 March 2026, <https://www.jpost.com/opinion/article-884710>; and "Taiwan Launches Undersea Cable Defense Plan," *Subsea Cables*, 28 October 2025, accessed 25 March 2026, <https://www.subseacables.net/industry-news/taiwan-launches-undersea-cable-defense-plan/>.

would thus appear even more necessary for Taiwan's democratic partners in the Indo-Pacific to launch similar moves.

Second, pursuit of related progress in international law is crucial to bolster the legality and legitimacy of the proposed initiative above. The International Law Association, a globally leading professional organization in the sphere, has a dedicated Committee on Submarine Cables and Pipelines under International Law, which stated in its 2024 report that the current regime on this issue based on the 1982 United Nations Convention on the Law of the Sea (UNCLOS) may not adequately address the myriad challenges that states and cable actors face today.⁶⁰ Various stakeholders in the Indo-Pacific, including the U.S. and Australia, have taken unilateral measures such as the Undersea Cable Control Act and domestic "cable protection zones" to fend off the emerging threats to cable security. Yet there is a shortage of international initiatives.⁶¹ A journal article published in 2025 by the U.S. Naval War College argues that incidents of intentional damage to cables and pipelines in the Baltic and around Taiwan expose gaps in coastal-state enforcement authority beyond the territorial sea. It critiques existing proposals such as United Nations Security Council resolutions, EU action plan, and UNCLOS amendment as insufficient and suggests a new implementing agreement under UNCLOS.⁶² If this is a widely shared view on cable security in the U.S. policy community, an active steering role played by the U.S. for international legal change appears desirable. A reinvigorated international legal framework with greater authority over cable protection, once in place, brings about more legitimacy in responding to cable sabotage, and thus may induce orchestrated efforts among democratic allies more potently.

Third, under the minilateral scheme, member states could contribute resources to launch collaborative actions to undertake detection, surveillance, interception, and expelling or seizure of suspected or confirmed hostile vessels. For instance, NATO's Nordic Warden system, an advanced reaction system to track potential threats to undersea infrastructure and monitor the Russian shadow fleet, was activated in 2025 by the Joint Expeditionary Force (JEF), comprising ten NATO members around the Baltic. This AI-enabled system assesses potential threats before they result in damage, monitoring suspicious vessels in real time and immediately sharing warnings with JEF participating countries and NATO allies. Nordic Warden was subsequently handed over to NATO under the Baltic Sentry initiative. The JEF has been developing operational concepts under the system, including maritime domain awareness, intelligence sharing, and rapid deployment capabilities to deter and respond to threats against undersea assets, with a geographic extension of operation from the Baltic to the Atlantic and North Sea.⁶³

⁶⁰ Committee on Submarine Cables and Pipelines under International Law, *Third Interim Report 2024* (London: International Law Association, 2024).

⁶¹ Osman Keh Karama and Abraham Kazmir, "Enhancing International Legal Protections for Undersea Cables and Transoceanic Pipelines," *Federal Communications Law Journal*, 77(3), May 2025, 225-253.

⁶² Raul Pedrozo, "Implementing Agreement to Enhance Protection of Critical Undersea Infrastructure," *International Law Studies* (U.S. Naval War College), 106, 2025, 147-172.

⁶³ Craig Langford, "JEF Developing Capabilities to Protect Sea Infrastructure," *UK Defence Journal*, 25 April 2026, accessed 27 April 2026, <https://ukdefencejournal.org.uk/jef-developing-capabilities-to-protect-sea-infrastructure/>; Ministry of Defence et al., "Joint Expeditionary Force Activates UK-Led Reaction System to Track Threats to Undersea Infrastructure and Monitor Russian Shadow Fleet," *GOV.UK*, 6 January 2025, accessed 27 March 2026,

Fourth, a key component of deterrence is to impose costs, most likely through punishments, to any actors responsible for the sabotage. For example, the European Union presented an action plan in February 2025 to safeguard undersea cables, including proposed punishments for vessels causing damages and sanctions on any country accountable to the disruption.⁶⁴

It has to be pointed out that some components mentioned above, such as part of the concrete actions for protection and collaboration among allies, are already present in the Critical Undersea Infrastructure Resilience Initiative Act (S.2222/H.R.8177), now under review in the U.S. Congress. With reportedly adequate bipartisan support, it appears likely to be passed.⁶⁵ On the other hand, it is up to the executive branch to what degree and how soon the legislation would be turned into real action. In addition, to what degree East Asian democracies will participate in the collective action also hinges on the U.S. executive branch's intention and tactic to bring in its allies.

To mitigate Taiwan's vulnerability when cable sabotage occurs, at least three dimensions informed by the fifth-wave theory applicable to U.S. extended deterrence are worth considering as policy options. First, as has been shown in the Ukraine-Russian war since 2022, Starlink by SpaceX proved a potent substitute for terrestrial infrastructure over internet connectivity, while the war caused severe disruption of the latter. As a referent for Taiwan, Starlink in Ukraine underwent three stages: 1) SpaceX had already spent about six weeks before the Russian invasion, working to make Starlink technically usable over Ukraine, which was a corporate decision without formal U.S. government involvement. 2) The first batch of Starlink terminals arrived in Ukraine four days after the Russian invasion began, due to Ukraine government's direct contact with Starlink founder Elon Musk and the ensuing business deal, also without formal U.S. government involvement.⁶⁶ 3) As announced in April 2022, the U.S. Agency for International Development (USAID) stepped in to formalize and scale up support for Ukraine's purchase of the Starlink services and hardware through a public-private partnership with SpaceX.⁶⁷ The role of USAID was chiefly to provide financial

<https://www.gov.uk/government/news/joint-expeditionary-force-activates-uk-led-reaction-system-to-track-threats-to-undersea-infrastructure-and-monitor-russian-shadow-fleet>; and Shepard News Team, "Joint Expeditionary Force Launches AI Protection Net for Undersea Cables," *The Shepard Group*, 9 January 2025, accessed 27 March 2026, <https://www.shephardmedia.com/news/naval-warfare/joint-expeditionary-force-launches-ai-protection-net-for-undersea-cables/>.

⁶⁴ Simone De La Feld, "Drones, Spare Parts, and Sanctions: EU Unveils Action Plan for Submarine Cable Security," *EU News*, 21 February 2025, accessed 26 March 2026, <https://www.eunews.it/en/2025/02/21/drones-spare-parts-and-sanctions-eu-unveils-action-plan-for-submarine-cable-security/>.

⁶⁵ "S.2222 - Critical Undersea Infrastructure Resilience Initiative Act," *Congress.Gov*, n.d., accessed 25 March 2026, <https://www.congress.gov/bill/119th-congress/senate-bill/2222/text>; and Jonathan Chin, "US Bill Aims to Protect Taiwan Cables," *Taipei Times*, 4 April 2026, accessed 8 April 2026, <https://www.taipeitimes.com/News/front/archives/2026/04/04/2003855000>.

⁶⁶ Elizabeth Howell, "How SpaceX Got Starlink up and Running in Ukraine: Report," *Space.Com*, 10 March 2022, accessed 27 March 2026, <https://www.space.com/how-spacex-got-starlink-running-ukraine>.

⁶⁷ Amritha Jayanti, "Starlink and the Russia-Ukraine War: A Case of Commercial Technology and Public Purpose?," *Belfer Center for Science and International Affairs, Harvard Kennedy School*, 9 March 2023, accessed 27 March 2026, <https://www.belfercenter.org/publication/starlink-and-russia-ukraine-war-case-commercial-technology-and-public-purpose>.

support during a cash-strapped moment for Ukraine. Then in June 2023, the U.S. Department of Defense confirmed that it had taken over the USAID role, while converting the original ad-hoc arrangement into a more conventional defense-contract relationship with SpaceX.⁶⁸

Unlike Ukraine's short-term crisis management, Taiwan now has time to deliberate and plan well ahead whether and how to switch to Starlink once the need arises owing to serious cable disruption. In addition, Taiwan is self-reliant to raise funds and able to arrange payment mechanisms with SpaceX. On the other hand, the U.S. government's supporting role remains indispensable in at least two ways. Given possible uncertainty over the willingness of SpaceX to accept Taiwan's purchase bid because of Elon Musk's immense business interest in China—such as the Tesla Giga Shanghai—the U.S. executive branch's stance on the issue, such as playing a mediating role to facilitate the transaction, may be crucial to influence SpaceX's decision. Additionally, given the allegations of and congressional discussions about Musk's manipulation of the Starlink functionality in Ukraine at critical moments, which affected Ukraine's security enormously, the U.S. government's oversight of the stability of Starlink services will be critical for Taiwan.⁶⁹

The two types of uncertainty above bring us to the second policy alternative. As an alternative or supplement to undersea cables, Taiwan has been developing domestic low-earth-orbit (LEO) satellites to create backup communication systems. The Taiwan Space Agency (TASA) plans to launch six LEO satellites starting in 2026 as part of the government's Beyond 5G (B5G) LEO Satellite program, with a total budget of NT\$900 million for the first two launches. This domestic constellation would require at least 120 satellites to ensure uninterrupted coverage, though initial deployment will serve as emergency backup rather than full replacement.⁷⁰ A number of impediments have emerged, in financial, technological/industrial, spectrum/regulatory, human-capital, and political/strategic facets, during the pursuit.⁷¹ Consistent with the whole-of-society approach, a U.S. public-private partnership could help alleviate some of these difficulties by empowering Taiwan's society, government, and particularly related industries, thereby contributing to extended deterrence by rendering cable sabotage a much less worthy tactic.

A major obstacle lies in the large industrial scale required and the ensuing financial burden on the Taiwan government. Building and operating a large broadband LEO constellation is

⁶⁸ Andrew Jones, "Pentagon Confirms It's Buying SpaceX Starlink Services for Ukraine," *Space.Com*, 9 June 2023, accessed 27 March 2026, <https://www.space.com/pentagon-buying-spacex-starlink-services-ukraine>.

⁶⁹ Courtney Kube, "Shaheen, Warren and Duckworth Want to Know if Musk Limited Ukraine's Starlink Access at a Crucial point in War with Russia," *NBC News*, 15 September 2023, accessed 28 March 2026, <https://www.nbcnews.com/politics/national-security/warren-shaheen-duckworth-pentagon-musk-ukraine-starlink-russia-war-rcna105151>.

⁷⁰ Jane Rickards, "Wary of Cable Sabotage, Taiwan Looks to Satellites as Back-ups," *Australia Strategic Policy Institute*, 19 February 2025, accessed 29 March 2026, <https://www.aspistrategist.org.au/wary-of-cable-sabotage-taiwan-looks-to-satellites-as-back-ups/>; and Staff Writer, "TASA to Launch Six Satellites from 2026," *Taipei Times*, 15 May 2024, accessed 29 March 2026, <https://www.taipetimes.com/News/front/archives/2024/05/13/2003817776>.

⁷¹ Will Ting, *Overview of Space Developments in Taiwan* (Taipei: The Netherlands Innovation Network at the Netherlands Office Taipei, 2021); Fern Hinrix, "Building Resilience in Taiwan's Internet Infrastructure from Geopolitical Threats," *The Henry M. Jackson School of International Studies*, 21 May 2024, accessed 29 March 2026, <https://jsis.washington.edu/news/building-resilience-in-taiwans-internet-infrastructure-from-geopolitical-threats/>; and

capital-intensive and usually requires mega-constellation scale investment. There are high R&D and deployment costs, especially for inter-satellite links and constellation scaling. Taiwan's current efforts are fragmented across government programs and a young private sector, rather than a single Starlink-scale commercial entity. In addition, Taiwan's existing space program has focused on small numbers of scientific and remote sensing satellites (e.g., FORMOSAT series), not mass-produced communications constellations, so there is limited existing production capacity dedicated to LEO broadband. Also, satellite launch engenders recurring cost; Taiwan has no domestic orbital launch capability and relies on foreign launch providers.⁷² If Taiwan can partner with existing U.S. or allied constellations (Kuiper, possibly others), it will be far cheaper and faster than financing a purely indigenous mega-constellation. A facilitating role played by the U.S. government is likely to help accelerate such partnerships and launch tempo.⁷³ To help reduce deployment cost and schedule risk, U.S. firms encouraged by the government can continue to provide relatively reliable launch options (e.g., via SpaceX or other providers) as they have for Taiwan's FORMOSAT-5 and FORMOSAT-7/COSMIC-2, two satellites for remote sensing and global weather forecasting respectively.⁷⁴ This would be feasible if launch discounts or priority slots for a Taiwan-only broadband network would not cause prohibitively intense competition with U.S. domestic priorities.

In addition, Taiwan faces technological and supply-chain challenges. Taiwan excels in components (semiconductors, RF front-ends, some payloads) but has less experience in end-to-end constellation architecture, inter-satellite links (ISLs), and large-scale network operations for LEO broadband. Advanced ISL and high-throughput architectures are technically demanding and raise R&D costs and timelines. Taiwanese industry has strong manufacturing capacity but limited influence over key test standards and IP controlled by foreign firms, including in related 5G/LEO RF modules, and therefore must pay to access and certify against proprietary specifications. This reduces strategic autonomy and slows domestic ecosystem development.⁷⁵ To help cope with the technological problems, existing U.S.–Taiwan programs (e.g., FORMOSAT-7/COSMIC-2) show that the U.S. can credibly provide system-integration know-how, mission design cooperation, and access to advanced

⁷² “Taiwan Low Earth Orbit (LEO) Satellite Market Size, Share, Trends and Forecasts 2032,” *Mobility Foresights*, 23 February 2026, accessed 29 March 2026; and Diarra Molock, “A Plan B for PRC Cable-Cutting: Taiwan's Satellite Communications,” *Global Taiwan Institute*, 21 May 2025, accessed 29 March 2026, <https://globaltaiwan.org/2025/07/a-plan-b-for-prc-cable-cutting/>.

⁷³ Molock, *op. cit.*; and Daniel Byman and Seth G. Jones, “How to Toughen Up Taiwan: America Must Help the Island Deal With China's Gray-Zone Tactics,” *Foreign Affairs*, 13 March 2025, accessed 29 March 2026, <https://www.foreignaffairs.com/united-states/how-toughen-taiwan>.

⁷⁴ Erik M. Jacobs, “Taiwan-US Science and Technology Cooperation Continues with Satellite Program,” *Global Taiwan Institute*, 20 April 2022, accessed 30 March 2026, <https://globaltaiwan.org/2022/04/taiwan-us-science-and-technology-cooperation-continues-with-satellite-program/>.

⁷⁵ Ke-Ren Chen and Shyh-Fang Huang, “Evolution of LEO Satellite Communication and Taiwan's Strategy of Entry into the High-Margin Satellite Industry” (in Chinese), *Journal of Advanced Technology and Management*, 13(2), May 2025, 39–55; Su-Wei Chang, “Taiwan's Role and Opportunities in the Global Battle for Low Earth Orbit Satellite Communications,” *TMYTEK*, 11 August 2021, accessed 30 March 2026, <https://tmytek.com/company/news-events/31>; Taiwan Low Earth Orbit (LEO) Satellite Market Size, Share, Trends and Forecasts 2032”; and Harry Saunders, “Taiwan's Internet Cable Problems Run Deep,” *Domino Theory*, 20 August 2025, accessed 30 March 2026, <https://dominotheory.com/taiwans-internet-cable-problems-run-deep/>.

technologies under government-to-government frameworks.⁷⁶ Similar frameworks could be extended to communications constellations—e.g., joint R&D on resilient waveforms, ISL technologies, and space-domain awareness for satellite protection. However, anything that touches sensitive U.S. military communications tech will face strict export-control constraints. To tackle the supply chain problems, embedding Taiwanese firms in U.S. and allied LEO supply chains would be of use. The U.S. government could actively steer American primes and constellation operators to source subsystems and ground equipment from Taiwanese companies, strengthening Taiwan’s industrial base and giving it insider experience with modern LEO architectures.⁷⁷ To be sure, while this would alleviate some technological and supply-chain impediments, it still leaves Taiwan dependent on foreign system integrators for full-constellation design.

The third policy recommendation is for the U.S. to help Taiwan establish its own ability to repair damaged undersea cables. At present the building, maintenance, and repair of the global undersea communications cable system that carries most internet traffic are controlled by four major firms. They are Alcatel Submarine Networks (ASN, a French firm), SubCom LLC (a U.S. firm), NEC Corporation (a Japanese firm), and HMN Technologies (a Chinese firm, formerly Huawei Marine Networks). In many cases of previous cable damage, it took weeks for full repair, and repair costs typically ranged between US\$1.5 million to US\$2 million per incident. Currently, Taiwan’s cable repairs rely heavily on fleets stationed in Japan, Singapore, the Philippines, and Malaysia under the Asia Pacific Marine Maintenance Service Agreement. Over-the-top provider agreements and Indefeasible Right of Use contracts restrict the choice of repair contractors. This creates a structural dependency that could become extremely risky in the event of China’s deliberate cable sabotage. Even if the manufacturer of the cables affected is not the Chinese firm—which could scuttle the repair tasks easily if it is the manufacturer—Beijing is fully able to thwart any other manufacturer from repairing if it so wishes, especially when the sabotage is undertaken as a main tactic to coerce Taiwan into major political concessions.⁷⁸

Legally and bureaucratically, the U.S. government possesses several tools it could use to encourage or enable SubCom’s assistance to Taiwan’s domestic repair capability. The aforementioned legislative bill entitled “The Critical Undersea Infrastructure Resilience Initiative Act” on Taiwan’s undersea cables could authorize grants, loans, or cost-sharing for infrastructure resilience projects in which firms like SubCom are prime contractors or technical partners. In addition, because SubCom already works as the exclusive undersea cable contractor to the U.S. military, cooperation with Taiwan could be framed as part of wider Indo-Pacific undersea infrastructure resilience programs under the Pentagon or other security agencies.⁷⁹ Furthermore, Washington can steer Taiwan away

⁷⁶ Jacobs, *op. cit.*

⁷⁷ Ting, *op. cit.*; and Jacobs, *op. cit.*

⁷⁸ Chihwei Yu and S. Philip Hsu, “Caught in the Cables: How China’s Gray Zone Tactics in the Taiwan Strait Traps Middle Powers,” paper delivered at the International Conference of “Indo-Pacific Crossroads: Canada, Taiwan and Regional Partners in Dialogue on Security,” co-sponsored by the Center for China Studies at National Taiwan University, Asia-Pacific Foundation of Canada, University of Ottawa, Ministry of Foreign Affairs of R.O.C., and the Canadian Trade Office in Taipei, March 17, 2026, National Taiwan University, Taipei.

⁷⁹ Joe Brock, “Inside the Subsea Cable Firm Secretly Helping America Take on China,” *Reuters*, 6 July 2023, accessed 30 March 2026.

from PRC-linked providers through export controls and security vetting and then actively recommend or pre-clear trusted suppliers like SubCom in multilateral or commercial cable projects involving Taiwan.⁸⁰ Moreover, Washington is able to expand the bid into an alliance-based regional project. The legislative bill explicitly calls for working with allies to help Taiwan and partners recover from attacks on undersea infrastructure, which could translate into joint cable-repair initiatives where SubCom provides technical support and training, and Taiwan contributes ships and crews.⁸¹

Given the convergence of interests—U.S. desire to harden critical undersea infrastructure against PRC coercion, Taiwan’s move to treat cables as critical infrastructure, and SubCom’s existing regional footprint and U.S. security ties—the scenario of U.S.-facilitated SubCom assistance to Taiwan is highly plausible in policy and industry terms. The feasibility is not speculative but emerging: the policy logic, legislative basis, and industrial actors are already in motion, and the question is less *whether* Washington can facilitate SubCom’s assistance than *how far* it chooses to go—e.g., supporting a full Taiwan-flagged repair ship and logistics hub versus more limited use of SubCom’s existing regional assets out of places like Subic Bay.

4.3. Withstanding Chinese quarantine/blockade with greater energy resilience

In accordance with the foregoing analysis of all the obstacles to U.S. decisions to deter and to break a Chinese quarantine/blockade of Taiwan, this section proposes the role of U.S. extended deterrence to concentrate on boosting Taiwan’s resilience, particularly in terms of energy sufficiency, to withstand the impacts from Chinese operations. Two types of U.S. supportive actions can be considered.

First, seeking to remedy Taiwan’s energy vulnerability to a possible cutoff of supply, and the sharply rising energy demands from high-tech developments such as semiconductor production and artificial intelligence (AI) computation, President Lai Ching-te announced in March 2026 a government plan to restart Taiwan’s Nuclear Power Plants (NPP) No. 2 and No. 3, which were fully decommissioned in 2021 and 2025 respectively. The reembrace of nuclear power marks a major reversal of previous policy held by Lai’s Democratic Progressive Party (DPP). He suggested that the restart will rest on three preconditions: safe operations of NPPs No. 2 and No. 3 with their extended licenses, solutions for nuclear waste management, and adequate consensus among citizens through social dialogue.⁸² Along these three facets, myriad actions by the U.S. government and private sector can be undertaken to assist with Taiwan’s revival plan.

⁸⁰ Charles Mok and Kenny Huang, “The Most Critical Resilience Questions of Them All: Taiwan’s Undersea Cables,” *TechPolicy.Press*, 19 September 2024, accessed 30 March 2026, <https://techpolicy.press/the-most-critical-resilience-questions-of-them-all-taiwans-undersea-cables>.

⁸¹ “Taiwan Strengthens Security by Joining Global Cable Repair Regions,” *Subsea Cables*, 11 March 2026, accessed 30 March 2026, <https://www.subseacables.net/industry-news/taiwan-strengthens-security-by-joining-global-cable-repair-regions/>.

⁸² Chang Cheng-yun, “Lai Proposes Conditional Nuclear Restart to Meet Emerging Power Demand,” *Taiwan Current News*, 26 March 2026, accessed 2 April 2026, <https://www.tcn.tw/news/6799473>.

To help consolidate the safety of reactor operations, the U.S. government could restore the previous assistance applied to Taiwan's NPPs. Taiwan started participating in 2011 in the U.S. Nuclear Regulatory Commission's Thermal-Hydraulic Code Applications and Maintenance Program (CAMP) together with the U.S. and other regulators. CAMP focuses on sharing experience with safety-analysis computer codes (error identification, model deficiencies, code maintenance), granting Taiwan access to internationally recognized U.S. reactor-safety tools for operational safety assessments of its plants.⁸³ By reactivating Taiwan's participation, the program could cover ageing management for 40+-year reactors, license-renewal best practice, probabilistic risk assessment, and stress-test protocols, which are all central to the review by Taiwan's Nuclear Safety Council (NUSC) of restart applications. Notably, the U.S. assistance to Taiwan's civil nuclear power development rests on a longstanding legal foundation. Since the 1970s, the ROC and U.S. have had an "Agreement Concerning the Civil Uses of Atomic Energy," later renewed via an agreement reached between the Taipei Economic and Cultural Representative Office (TECRO) in the U.S. and the American Institute in Taiwan in 2014, which explicitly covers nuclear safety, security, safeguards, and civil applications. On the vendor side, the Taiwan Power Company (Taipower) has contracted Westinghouse Electric (U.S. original equipment manufacturer) to perform independent safety inspections at the NPP No. 3, tying U.S. technical expertise directly to the safety review for potential relicensing or restart.⁸⁴ Beyond inspections, U.S. vendors could also supply or refurbish reactor-core internals, control systems, turbines, and balance-of-plant upgrades tied to life-extension, which the U.S. International Trade Administration has identified as a multi-billion-dollar opportunity.⁸⁵

The management of nuclear waste has been at the heart of controversy over nuclear energy in the Taiwan society. Even before the announced revival in 2026, the American Institute in Taiwan (AIT) had stated a year ago that Washington was ready to introduce advanced nuclear technologies, including those on nuclear-waste storage.⁸⁶ A possible foundational task for the U.S. now would be to create a set of nuclear waste and backend fuel-cycle solutions, perhaps sponsored by the U.S. Department of Energy, which focused on: A) licensing and design support for expanded dry-cask storage at existing sites; B) options for centralized interim storage; and C) advanced cask technologies and monitoring. The U.S. government could also consider funding joint R&D on spent-fuel and high-level waste solutions via a bilateral consortium bringing together various stakeholders, such as the Clean Energy Research Center-style platform, but with a more specific focus on nuclear safety, waste, and grid resilience.⁸⁷ The actual transfer of know-how and hardware

⁸³ "International Cooperation: Taiwan-U.S.," *Nuclear Safety Council*, 18 July 2025, accessed 3 April, 2026, <https://www.nusc.gov.tw/english/Administration-Regulations/Taiwan-U.S.-79.html>.

⁸⁴ Feng Jianqi, "Taiwan Seeks U.S. Manufacturer Help to Restart Nuclear Plants No. 2 and No. 3," *The Storm Media*, 23 March 2026, accessed 3 April 2026, https://world.storm.mg/articles/1113722#google_vignette.

⁸⁵ "Market Intelligence: Taiwan Nuclear Energy," *International Trade Administration*, 28 September 2025, accessed 4 April 2026, <https://www.trade.gov/market-intelligence/taiwan-nuclear-energy>.

⁸⁶ Pei-Wei Benjamin Yang and M.V. Ramana, "Why the US Won't Be Able to Help Build Taiwan's Nuclear Future," *Taiwan Climate Action Network*, 26 May 2025, accessed 4 April 2026, <https://tcan2050.org.tw/en/why-the-us-wont-be-able-to-help-build-taiwans-nuclear-future/>.

⁸⁷ "Country Profiles: Nuclear Power in Taiwan," *World Nuclear Association*, 31 March 2026, accessed 4 April 2026, <https://world-nuclear.org/information-library/country-profiles/others/nuclear-power-in-taiwan?mobile->

by U.S. firms can be either through firm-level direct contacts or facilitated by government midwifery. U.S. firms specializing in dry-cask storage, cask design, and monitoring technologies can partner with Taipower to expand interim storage at both the NPPs, which is a politically sensitive but technically solvable issue.

Seeking social consensus on nuclear energy in Taiwan has been a thorny issue in recent years. According to the Formosa Electronic News Poll conducted right after President Lai's announcement, among all citizens in Taiwan, 63.2% saw more benefits than costs and 18.7% saw the other way around. Yet the distribution among DPP supporters reflected greater split; the ratio was 47.8% to 30.1%.⁸⁸ Some DPP supporters oppose nuclear power not just on technical grounds, but because anti-nuclearism is bound up with memories of KMT authoritarianism, environmental justice struggles, and the DPP's anti-nuclear party platform which turns the opposition into a core identity marker for the party and its base. Hence there may be limited space for the U.S. to exert direct influence on this issue. Yet U.S. government agencies, firms, private think tanks and consultancies can still generate credible, peer-reviewed cost and risk studies about various safety issues of nuclear power—especially over waste management and siting selection—in general, or against the specific background of Taiwan in particular. Washington could also highlight the security implications of restoring nuclear power for reducing Taiwan's overwhelming dependency on imported LNG and thus for resisting China's coercion. All the narrative support would be instrumental for the Taiwan government in domestic debates and persuasion.

The second type of U.S. actions pertain to small modular reactors (SMR), a new generation of nuclear power technologies. As a leader in this area, U.S. is the home of firms ready for partial technology transfer: some designs and supporting hardware are mature enough for serious overseas deployment planning and training. Nevertheless, large-scale commercial export is still constrained by licensing status, financing, supply-chain depth, and export-control/non-proliferation arrangements. From the viewpoint of extended deterrence, U.S. actions along this line entails a longer timeline than accelerating Taiwan's extension of pre-existing nuclear power facilities.

Several U.S. light-water SMR designs—NuScale, GE-Hitachi BWRX-300, Holtec SMR-160—have passed major R&D milestones and are being actively positioned for international markets. The U.S. DOE notes that its Advanced SMR R&D and earlier SMR Licensing Technical Support programs were explicitly created to accelerate “availability of U.S.-based SMR technologies into domestic and international markets,” implying export is a core design goal rather than an afterthought. Factory-manufacturable modules, transportable reactor vessels, and associated balance-of-plant components are central to these designs and are already being engineered for serial production, although very little has yet been built at industrial scale.⁸⁹ Hardware related to training and

[app=true&theme=dark](#); and Patrick Yu, “The United States Should Prioritize Energy Cooperation With Taiwan,” *Center for American Progress*, 19 January 2022, accessed 5 April 2026.

⁸⁸ “Public Opinion Poll on Taiwan's National Issues in March 2026,” *Formosa Electronic News*, April 1, 2026, accessed 6 April 2026, https://my-formosa.com.tw/DOC_224706.htm.

⁸⁹ Nuclear Energy Agency, *The NEA Small Modular Reactor Dashboard* (OECD, 2024); Slade Johnson and William Walsh, “Small Modular Reactors and Microreactors under Development in the United States,” *U.S. Energy Information Agency*, 27

operations is already being exported. There are U.S.-based SMR developers already operating projects in dozens of international markets, revealing that front-end services, feasibility work, and pre-deployment engineering are underway even where reactors are not yet built.⁹⁰

On the other hand, the degree to which a design can be exported from the U.S. hinges critically on licensing maturity. The International Atomic Energy Agency (IAEA) advises those states for the first attempt of SMRs to choose reactor designs that are finalized and have been licensed or at least subjected to rigorous scrutiny by another national regulator. This makes U.S. Nuclear Regulatory Commission (NRC) approval a *de facto* prerequisite for foreign buyers.⁹¹ While some U.S. SMR designs have achieved key NRC milestones, the broader picture is that no U.S. SMR has yet entered commercial operation, and the domestic licensing process remains lengthy and resource-intensive. In general, U.S. SMR projects span the full development spectrum: a few light-water designs are relatively advanced, but many sodium, molten-salt, and gas-cooled concepts remain in earlier demonstration or conceptual phases. This reality constrains near-term exportability of hardware beyond pilot or demonstration scale. Nonetheless, active regulatory coordination—both inside the NRC and via U.S. support for IAEA SMR safety standards—lays a foundation for eventual mutual recognition or at least regulatory learning that can facilitate transfers.⁹²

In addition, partly due to the potential for dual use, SMR technology and hardware are subject to U.S. nuclear export law and international non-proliferation norms. Exporting firms must conduct negotiations with government agencies under Section 123 of the U.S. Atomic Energy Act, which set the legal framework for nuclear trade with partner countries. There is also a need to make the current U.S. DOE and NRC export licensing procedures more transparent and time-efficient, to facilitate U.S. vendors' transfers of hardware and design information into foreign markets.⁹³

That said, there have been active U.S. government efforts to set up soft-transfer mechanisms and preparatory projects for exporting SMRs. The State Department's FIRST program in operation in partnership with Kazakhstan since 2022 provides technical support, vendor-specific design interfaces, training, and feasibility studies for U.S. SMR technology. Though at present full reactor-island exports are not yet happening at scale, a significant portion of the SMR technology

April 2026, accessed 9 April 2026, <https://www.eia.gov/todayinenergy/detail.php?id=67584>; and U.S. Department of Energy, "Advanced Small Modular Reactors (SMRs)," U.S. Department of Energy, n.d., accessed 11 April 2026, <https://www.energy.gov/ne/advanced-small-modular-reactors-smrs>.

⁹⁰ Brian Daigle, Samantha DeCarlo, Nathan Lotze, *Big Change Goes Small: Are Small Modular Reactors (SMRs) the Future of Nuclear Energy?* (Working Paper ICA-105) (Washington, D.C.: Office of Industry and Competitiveness Analysis, U.S. International Trade Commission, 2024).

⁹¹ M.V. Ramana et al., "Licensing Small Modular Reactors," *Energy*, 61, November 2013, 555-564; and International Atomic Energy Agency, *Advances in Small Modular Reactor Technology Developments*, 2020 edition (Vienna, Austria: IAEA, 2020).

⁹² Johnson and Walsh, *op. cit.*; International Atomic Energy Agency, *op. cit.*; and Ramana et al., *op. cit.*

⁹³ International Trade Administration, "The Commercial Outlook for U.S. Small Modular Reactors," *SCRIBD*, n.d., accessed 10 April 2026, <https://www.scribd.com/document/846025215/Commercial-Outlook-for-US-Small-Modular-Nukes>; International Atomic Energy Agency, *op. cit.*; and Robert Rosner and Stephen Goldberg, "Small Modular Reactors—Key to Future Nuclear Power Generation in the U.S.," U.S. Department of Energy, November 2011, accessed 9 April 2026, <https://www.energy.gov/ne/articles/small-modular-reactors-key-future-nuclear-power-generation-us>.

package—from design support and digital simulators to early-stage engineering—has been disseminated abroad. It is likely that hardware exports at increasing scale will occur incrementally over time.

Taiwan has just begun its incipient effort to explore SMR development. Taiwan's NARI launched a large-scale, four-year SMR research project in 2025 with a budget exceeding NT\$100 million (about US\$3.3 million), intended to provide a reference for industrial and national policies ahead of an expected global SMR “commercial debut” around 2030. In parallel, Taiwan's NSC under the Executive Yuan has initiated a broader four-year program, budgeted at roughly NT\$800 million with an initial NT\$100 million allocation, to develop SMR and micro-modular reactor technologies, establish a legal and regulatory framework for SMR construction, and build review capability for future project applications, with NARI designated to lead work on low-carbon, high-energy-density SMRs and to form a national SMR development team.⁹⁴

Considering the background above, there are several U.S. supporting actions on SMRs worth exploring that add to the U.S. role of extended deterrence of China's attempt to strangle Taiwan's energy supply through quarantine/blockade:

- (1) The U.S. State Department could consider bringing in Taiwan as a formal partner of FIRST, just like Kazakhstan. As mentioned above, the program aims to foster partner countries' readiness for SMRs and is tailored to each partner country's specific needs through joint training programs.
- (2) The U.S. could consider conducting detailed feasibility studies jointly with Taiwan's NARI or NSC, examining which U.S.-designed SMR technologies are technically and economically suitable for Taiwan's specific conditions. In Kazakhstan's case, the U.S. engineering firm Sargent & Lundy is conducting such a study. For Taiwan, the assessment would need to cover grid integration with Taiwan's existing power infrastructure, factors about siting such as Taiwan's seismic activity and limited land availability, and deployment timelines that align with Taiwan's need to expedite the consolidation of energy resilience.⁹⁵

⁹⁴ Simone Pelizza, “Taiwan: NARI Launches Large-Scale Small Modular Reactor Research Project,” *GAT-Report*, 12 May 2025, accessed 7 April 2026, <https://www.gat.report/29368/taiwan-nari-launches-large-scale-small-modular-reactor-research-project/>; “Taiwan Looks to SMRs,” *Nuclear Engineering International*, 14 May 2025, accessed 7 April 2026, <https://www.neimagazine.com/news/taiwan-looks-to-smrs/?cf-view>; and Carol Yang, “Taiwan to Begin Small Modular Reactor Research to Boost Future Energy Supply,” *Taiwan News*, 7 April 2026, accessed 8 April 2026, <https://www.taiwannews.com.tw/news/6335380>.

⁹⁵ “Nuclear at Heart of Kazakh Plans Says President,” *World Nuclear News*, 12 January 2026, accessed 8 April 2026, <https://www.world-nuclear-news.org/articles/nuclear-at-heart-of-kazakh-plans-says-president>; Bryan Chuang, “Taiwan to Embrace Advanced Nuclear Energy Tech to Secure Energy and Computing Edge,” *Digitimes Asia*, 11 February 2026, accessed 8 April 2026, <https://www.digitimes.com/news/a20260211PD212/taiwan-nuclear-government-policy-electricity.html>; and Yang, *op. cit.*

- (3) The U.S. could consider providing Taiwan with classroom-based SMR simulators, ideally in academic institutions or research units, to train specialists in reactor operations, safety systems, and emergency response procedures before any licensing or construction decisions are made.⁹⁶ This is critical to tackle Taiwan's specific problem of long-term workforce shortage, as Taiwan phased out its last commercial nuclear reactor in May 2025. The training infrastructure would help nurture a new generation of nuclear specialists while Taiwan still retains experienced personnel from its existing nuclear program who could serve as instructors.
- (4) The U.S. could consider assisting Taiwan in developing a modern regulatory framework specifically designed for SMR licensing. The assistance could include technical exchanges with the U.S. NRC on performance-based versus prescriptive regulatory approaches, workshops on SMR-specific safety assessment methodologies, and guidance on adapting international standards from the IAEA.⁹⁷ Given Taiwan's public safety concerns with safety issues that contributed to the nuclear phase-out decision, developing a transparent, rigorous regulatory framework with strong public participation mechanisms would be essential for domestic political acceptance of SMRs.
- (5) As expounded above, nuclear waste management lies at the center of Taiwan's public opinion toward nuclear power. A comparison between three major SMR concepts (water-, sodium-, and molten-salt-cooled) to a conventional 1,100 MWe pressurized water reactor displays that SMRs generate between about two and 30 times more waste volume per unit of electricity. In addition, SMR spent fuel and other waste tend to be more chemically reactive, have different fissile content, thereby entailing more complex requirements for storage, transport and disposal safety than that spent by conventional reactors.⁹⁸ Considering this factor, U.S. assistance with Taiwan's SMRs could include technical consultations on consolidated interim storage facilities, deep geological repository site characterization methodologies, dry cask storage technology transfer, and regulatory frameworks for waste management. To be sure, the U.S. support will co-evolve with the global progress on clear waste management, a key issue not yet adequately resolved for conventional reactors and SMRs alike.

⁹⁶ For a recent case of class-room based SMR simulators Flynn Espe, "New SMR Simulator Boosts Nuclear Education and Workforce Development in the Tri-Cities," *Washington State University, Tri-Cities*, 27 February 2026, accessed 11 April 2026, <https://tricitie.wsu.edu/new-smr-simulator-boosts-nuclear-education-and-workforce-development-in-the-tri-cities/>.

⁹⁷ Chao Yen-hsiang, "SMRs not Viable Short-term, Taiwan Must Plan Early: Expert," *Focus Taiwan*, 9 April 2026, accessed 11 April 2026, <https://focustaiwan.tw/business/202604090012>; and

⁹⁸ Lindsay M. Krall, et al., "Nuclear Waste from Small Modular Reactors," *Proceedings of the National Academy of Sciences*, 119(23) e2111833119, 31 May 2022, accessed 12 April 2026, <https://www.pnas.org/doi/10.1073/pnas.2111833119>.

5. Conclusion

For three reasons, China's attempt in approximately the next two years, to coerce Taiwan into unification is likely to prioritize the specific CGZTs of quarantine/blockade and sabotage of undersea communication cables that support internet connectivity, rather than an all-out invasion. First, all of China's large-scale military exercises against Taiwan in recent years have concentrated on simulated blockade or quarantine. Second, Taiwan's defense postures render the readiness to resist China's full invasion more robust than for the two CGZTs. Third, China's drastic purges of top military and civilian elites since the 20th Party Congress have impaired PLA's capability to conduct a kinetic war and thus have rendered the two CGZTs less risky and almost equally effective to attain Beijing's political goal.

Amidst the evolutions above, however, the conventional approach of U.S. extended deterrence that stresses the use of coercive powers to forestall the adversary's aggressive actions faces two broad challenges and does not seem adequately adaptative to the transforming circumstances. In deterring GZTs in general, timely actions are hampered by CGZTs' seemingly negligible impact of each incremental step, and by the preoccupation with preventing kinetic wars inherent in conventional U.S. strategic culture. In deterring CGZTs in particular, the traditional choice between strategic clarity and ambiguity central to U.S. extended deterrence in the Taiwan Strait is not helpful to shape strategic planning against CGZTs. In addition, the concern with unwanted escalation in conventional deterrence, a concern common to policymakers worldwide, may impede decisive U.S. actions to ensure extended deterrence of China's quarantines for fear of escalation to military clashes, while the quarantines engender no less harm to stifle Taiwan's lifeline from abroad. Furthermore, vast uncertainties loom large over whether U.S. intervention after a Chinese quarantine or blockade happens will succeed, because of possible U.S. hesitation to use force, U.S. allies' questionable will to join a collective economic sanction on China, and China's ability to withstand Western economic sanctions. In the event of cable sabotage, the U.S. has lagged markedly behind Europe in collaborating with regional partners to tackle possible cable sabotage in the Indo-Pacific.

Therefore, this report proposes an approach of U.S. extended deterrence of CGZTs against Taiwan, informed by the fifth-wave deterrence theory, which emphasizes the target country's resilience to hedge off hybrid threats, and a whole-of-society scope for comprehensive strategies. Derived from this approach is the notion of deterrence by denial rather than deterrence by punishment, considering all the background factors above.⁹⁹

Under this notion, policy recommendations for the U.S. to deter the two CGZTs are provided. To enhance Taiwan's resilience against undersea cable sabotage necessitates two types of actions: to deter the sabotage from happening, and to enable Taiwan to be fully prepared for fallback options

⁹⁹ Admittedly the policy recommendations about how to dispel the threat from cable sabotage include elements of punishment such as sanctioning the vessels and holding the country accountable. Yet the main thrust common to surviving quarantine/blockade and cable sabotage is about reinforcing Taiwan's resilience. In addition, the U.S. role of extended deterrence by denial is indispensable for both threats while the role in deterrence by punishment is not necessarily so.

to sustain internet connectivity. Concrete tasks to deter the sabotage include establishing a minilateral or multilateral scheme for cooperation, fostering related progress in international law, U.S. and partners' participation in detection, surveillance, interception, and expelling or seizure of hostile vessels, and imposing sanctions to any actors responsible for the sabotage. Three policy alternatives are recommended for the second type of action: arrangement *ex ante* for purchasing and utilizing SpaceX's Starlink under the U.S. government's support and oversight, U.S. assistance from the government and industries to Taiwan's development of domestic LEO satellites aimed at creating backup communication systems, and U.S. assistance for Taiwan to establish its own ability to repair damaged undersea cables.

To help boost Taiwan's resilience of energy sufficiency, it is recommended that the U.S. should assist with Taiwan's plan, disclosed in 2026, to revive NPP No. 2 and NPP No. 3. Preexisting government-to-government ties of Taiwan's participation in the CAMP and business-to-business transactions such as those between Taipower and Westinghouse Electric both underlie U.S. supporting role. Another recommended alternative is for the U.S. to undertake concrete steps to help introduce SMRs to Taiwan and make them commercially available; albeit this option is likely to be a long-term strategy before generating timely instrumentality to manage possible CGZT-driven crises in the next two years or so.