



Responsible Investing in Defence, Security and Resilience

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Executive Summary

Defence and security are the foundation of our society, it protects our values, institutions and democracies, and provides deterrence to promote peace. Yet, in the past several decades of the post-Cold War era, European Allies significantly reduced their investment in defence. The industry has gained a negative perception, hindering Europe and the UK's ability to respond to the evolving geopolitical environment. Russia's invasion of Ukraine and China's rapid advancements in military technology have exposed our shortcomings in technological innovation, resilient industrial base for scaled production, and flexible procurement. Europe will continue to be further exposed to the impact of rising geopolitical tensions if it does not invest in its defence, security, and resilience.

Europe is in a position to lead when it comes to investing in defence, security and resilience, yet to be a leader, it must ensure that it focuses on three key challenges:



Create the conditions for greater private capital flows to defence and dual-use innovation.

This requires a revisiting of financial institutions' exclusion lists which currently hinder the sector's production, capacity and innovation.



Ensure European ministries of defence integrate emerging technologies in their defence and security infrastructure.

Deep tech dual-use technologies have an important role to play in securing the future of Europe in the next decades. However, adoption pathways of these technologies today are limited, and the process of procuring them can be lengthy and difficult to navigate.



Incorporate responsible use standards to ensure the industry is conducted with safety and ethical principals at its core.

Emerging technologies present ample opportunities and equal risks. Our approach to developing and deploying them must balance innovation with trust, accountability and responsible conduct.

Creating the financial conditions for defence, security investments in Europe

A significant barrier to increasing defence spending is that the sector is excluded from financial institutions' mandates. As a result, banks, investors, pension funds, and sovereign wealth funds have stopped providing services and access to defence companies. This exclusion is frequently driven by environmental, social, and governance (ESG) considerations, influenced by pressure from advocacy groups and concerns about reputational risks and public perception. In recent years, the industry has been categorised alongside so-called "sin stocks," such as alcohol, gambling, and tobacco, further contributing to the negative perception that undermines the sector's role in society.

An industry that protects European democracies and values should not be classified as unethical and excluded.

Cascading the problem, companies operating within the defence industry lack access to essential services such as banking, capital, and insurance. This not only limits defence production and capacity but also hinders innovation. The war in Ukraine has demonstrated rapid evolution of battlefield technology, such as sensor fusion software, jamming and spoofing systems, UAV and counter UAV systems. These solutions are coming from innovative startups, which face enough hurdles to scale as it is. They should not lack access to venture capital or be rejected from opening bank accounts simply because they serve defence markets.

One key action financial institutions can take is to revisit their exclusion lists and policies related defence and security in response to the evolving geopolitical situation and to support a secure Europe and the UK.

This would ensure financial institutions are aligned with NATO's Secretary General, Mark Rutte, who called on Allies to invest more in defence now to protect our nations 20 or 30 years from now. In the past year, many European sovereign wealth funds have taken



the initiative to update their exclusion lists and increase their defence spending. In March 2024, 14 European Prime Ministers sent a letter to the European Investment Bank Group (EIB) to encourage the group to reconsider their defence financing. As a first step, the EIB waived the requirement that dual-use companies must derive more than 50% of their expected revenues from civilian use, removing the requirement of a minimum percentage of anticipated revenues from civilian applications. This progress only addresses a small portion of the market. Even given the political pressure, the financial industry is still hesitant, given the negative perception and high-risk nature of the defence.

Certain limitations are necessary to ensure the risks associated with defence investing are understood and managed. However, making blanket exclusions that encompass all production, trade, or sales within the defence industry will not advance Europe's security goals. Instead, ESG and defence should be seen as complementary, requiring a more nuanced understanding of the sector's critical role in fostering long-term societal peace and stability.

By broadening the traditional view of defence beyond warfare, we can emphasise its contribution to the resilience of Europe and the UK. Rather than excluding the industry outright, we have an opportunity to ensure that its operations are conducted responsibly and sustainably.



Removing barriers to adopting emerging technologies for defence and security

The future of European defence is already observable in Ukraine, and lessons today will prepare our defence for the future. Unlocking the blockers to investment and financing defence technology is a key part of the puzzle.

Yet, to fully build a resilient and secure Europe, we need a fundamental reform of Europe's defence industrial base and the relationship between the industry and our defence departments.

The supply needs to be met with sufficient demand signals from NATO and the front lines and we need reformed processes in order to adopt new technologies. This is a system challenge, not a science problem. In any future conflict, exquisite platforms, such as manned fighter jets, tanks and aircraft carriers, will be vulnerable to attacks by cheaper and much less capable but much more numerous, uncrewed systems, such as drone swarms. The time required to produce and repair such platforms falls short of matching the pace of innovation on the battlefield. Today we cannot regenerate these exquisite platforms at the pace that we are likely to lose them.

We need to plan for the future, not the present, which means we must accept that large platforms are vulnerable and difficult to repair and replace. The future will include

large volumes of autonomous uncrewed capabilities such as drones, unmanned ground vehicles and unmanned maritime vessels. This will require a redesign of force structures, with a different balance between crewed and uncrewed systems, as well as between exquisite capabilities and scalable mass. It will also require that supply chains prioritise European components, scaling European manufacturing production and securing access to critical minerals.

Currently European and UK defence primes manage decades-long development programmes and set up complex, often single-use supply chains. This will not allow us to iterate at the speeds we are seeing in conflicts such as the war in Ukraine, where the feedback loops and iterations are a matter of days. First, governments should allocate substantial budget to rapid adoption allowing a portion of procurement dedicated to a 1-to-2-year cycle compared to a 10-year cycle. This rapid testing provides a test-bed to inform long-term strategic planning.

Second, we need a new industrial base that draws on the quality of the commercial technology sector, which works towards monthly or even weekly upgrade cycles. That means harnessing commercially derived technologies, becoming less reliant on government labs and

defence-specific research programmes and building strong public-private partnerships. These partnerships can enable foster interoperability. For example, open-sourced systems can enable seamless integration across platforms, foster collaboration, and drive innovation by allowing diverse stakeholders to build on shared standards and technologies.

In parallel, we must change how European defence departments interact with this new industrial base. This can be achieved by actively encouraging front-line military users to interact directly with those supplying them - passing on vulnerabilities that need patching in hours rather than months, this is critical during the development of new capabilities and once they are in service as end-users are the best testing and evaluation judges, which has been proven in the adoption of new capabilities in Ukraine.



Setting the foundation for responsible investment, development and deployment of emerging technologies

The geopolitical competition for technological innovation, also plays out in the principles and values that guide the technological development. Increased autonomous capabilities and the use of AI for military decision-making enables and enhances Allied capabilities. Yet, it also comes with increased risks, including questions about trust, safety, accountability, bias, and international law. Failing to address these risks or the risk of misusing technologies could have significant physical or social consequences.

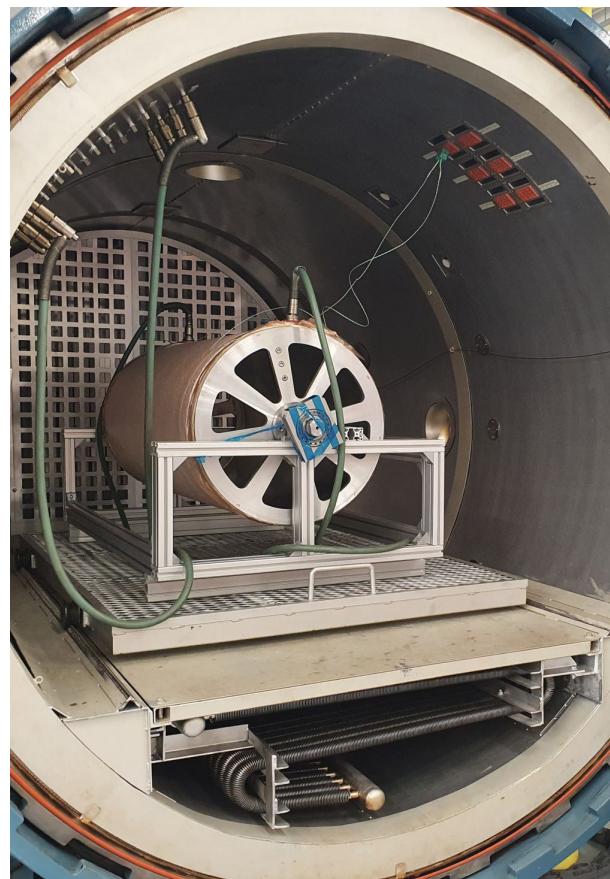
The rapid pace of innovation creates pressure to balance risks, responsible development, and technological advancements, requiring collective action from policymakers, startups,

corporations, and investors to ensure ethical principles and safety are upheld. Not only is it a challenge for founders and innovators to know how to design and build responsibly, but it is also equally challenging for investors to evaluate if a company is developing responsibly and to mitigate risks in the investment process.

At the NATO Innovation Fund (NIF), we have spent the past year building our approach to responsibly investing in technologies for defence, security, and resilience. This strategy builds on the foundations of ESG frameworks, integrating considerations such as climate-related risks, environmental impact, governance, risk management, and workplace

and labour practices. However, the rapid evolution of critical technologies demands ongoing risk analysis for safety and responsible design and deployment – an area where existing ESG frameworks fall short.

To address this, the NATO Innovation Fund has created a Responsible Use Framework aligned with NATO's Principles of Responsible Use (PRUs). The PRUs for AI, Autonomy and Biotechnology were created to ensure that the development and use of these technologies align with the common values and principles of the Alliance and are in accordance with international law. The NATO Innovation Fund's framework analyses **1)** if technologies are designed and deployed with the PRUs and can be trustworthy to both operators and the public, **2)** whether a company has adequate accountability and governance and **3)** mitigate risks through appropriate safeguards, **4)** monitor and guide companies as they scale and innovate to ensure continuity.



The framework places particular emphasis on assessing AI in military decision making, autonomous systems, biotechnology and quantum technologies, all sectors where the risk of potential harm is considerably higher. In such cases, an ESG checklist will not suffice. Instead, these technologies must be evaluated through risk assessments, understanding the impact on stakeholders, potential intended or unintended use cases and an analysis of how its development is aligned with the Principles of Responsible Use.

In the case of an autonomous drone, a key aspect of the analysis is a company's test, evaluation, validation and verification (**TEV&V**) process, the training data, and how operating in a conflict environment affects feedback loops and data availability. The implementation of responsible use is a constant evolution and will require collective action from all European investors. At NIF, we continue to test and refine how to assess a company's ability to design responsibility through our due diligence processes, support for companies, and consultations with international experts. Europe needs to build their technological defence capabilities, but responsible use must be at the core.



Conclusion

Europe's future depends on our ability to think differently. Defence, security, and resilience are the bedrock upon which our democracies, values, and prosperity rest. We must embrace a transformative approach: creating the financing environment for private capital to invest in the defence industry by revisiting exclusion lists, reforming outdated industrial and procurement systems, and prioritising the development of defence and dual-use technology with safety, security and ethics at the core. This is not just about adapting to the challenges of today but preparing for tomorrow.

The road ahead demands urgency, vision, and unity. A secure Europe is a strong Europe—capable of defending its people, values, and future in an increasingly uncertain world.

Photos courtesy of iCOMAT, ISAR Aerospace, SpaceForge, Tekever, ARX and Aquark



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