Implementing ESG in dual-use technology

Findings from a workshop of UK corporate leaders, venture capital investors, academics, and policy makers.

VentureESG

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Contents

Background

In the last few years, there has been a surge in interest in investing in technology ventures with defence and dual use purposes. In 2024, nearly €1 billion was invested in defense tech in Europe, four times higher than in 2019, with investment growing faster than in any other category in venture capital.[1] [2] The increased investor interest in the defence sector has been due a variety of factors including growing awareness of the importance of defence due to the war in Ukraine, geopolitical competition with China, the need to secure a technological advantage over adversaries,[3] and to improve sovereignty through creating a defence industrial base inside the UK and Europe.[4]

Yet the UK and Europe have faced challenges in raising capital for defence and dual use ventures. One barrier to expanded investing in defence technology ventures in Europe has been ESG (environment, social, governance) requirements of UK and European investors.[5] [6] Historically, many of Europe's large allocators of capital (i.e., limited partners, LPs) to the venture capital ecosystem have had policies not to invest in arms and munitions and/or to serve military customers. Similarly, ESG ratings agencies and ESG indices for publicly-listed companies have also assessed defence companies as higher risk due to potential for controversies, thereby limiting their access to and cost of capital.

The concerns surrounding the ESG investment ecosystem's approach to the defence sector has attracted attention from Europe and UK's senior defence leaders. Some leaders have expressed concern there is a fundamental tradeoff of ESG and sustainability and national defence including the European Defence Agency (EDA) Steering Board, which stated: "ongoing efforts to increase the sustainability of Europe's economy and industry cannot come at the expense the resilience and competitiveness of the 'European Defence Technological and Industrial Base' (EDTIB) as well as the overall security of the EU and its citizens."7 Others have sought to reconcile the goals of sustainability and defence, including UK Secretary of State for Defence Grant Shapps, who stated in his 2023 address to UK Parliament: "There is nothing contradictory between the principles within ESG and the defence industry. On the contrary, a strong national defence, including our nuclear deterrent, is a prerequisite for the freedoms (including social liberties) which we often take for granted, and the aspirations that investors and financial services companies seek to address using ESG considerations."[8]

1 The State of Defence Investment 2024: Resilience builders in NATO & Europe. Dealroom. 2024. (Available here)
2 According to Pitchbook, in 2023, there was $US 34.9 billion invested in defence tech and dual use ventures across 627 deals, mostly in the U.S.
3 The global race for technological superiority. Brookings Institution. 2020. (Available here)
4 First-ever European Defence Industrial Strategy (EDIS) to enhance Europe's readiness and security. Defence Industry Europe. 2024. (Available here)
5 Mainstreaming defence industrial readiness culture throughout all policy areas at EU and national levels. pg. 2 EU Commission. (Available here)
6 ESG is a threat to UK defence industry, says Grant Shapps. *Sunday Times*. 2023. (Available here)
7 ESG firmly in defence sector's sights. *Investment Magazine*. 2024. (Available here)

Current Actions ESG in the UK Defence Sector

Recognizing the need to improve ESG performance in the defence sector, the UK government has already taken several steps including:

- Establishing a Climate Change & Sustainability steering group in the Defense Suppliers Forum [9] to tackle environmental management and GHG emissions reduction in the defence supply chain
- Applying the Social Value Model in Ministry of Defence (MOD) procurement[10]
- Proposing draft legislation by HM Treasury for addressing transparency in ESG ratings agencies

The industry-led UK Defence ESG Charter is also driving voluntary action on a range of sustainability issues among large UK defence companies including the clean energy climate transition, resilience in the critical minerals supply chain, DEI, STEM job skills, and improving corporate governance for cybersecurity and export controls.

ESG in Dual Use & DefenceTech Venture Capital

Despite momentum among the large publicly-listed defence companies, the conversation around the need for ESG in the venture capital ecosystem – including the largest LPs, VC funds and ventures building dual use and defence technologies-- is still in a nascent stage. In 2023 VentureESG, a London-based non-profit working with a global network of more than 500 VCs and 100 LPs, conducted a baseline study and needs assessment with VC fund managers on ESG, in collaboration with British Business Bank's National Security Strategic Investment Fund (NSSIF). The study found that most VCs investing in dual use ventures were still not adopting ESG in their investment decisions and management. This was due to a variety of reasons including staff capacity constraints in terms of time and technological expertise, lack

8 The Defence Industry and Environmental, Social and Governance Considerations Statement made on 12 September 2023. Statement UIN HLWS997. UK Parliament. 2023. (Available here)
9 Defence: Sustainability as a Competitive Advantage. UK Government. Updated October 11, 2024. (Available here.)
10 Social Value 101: A Guide to Social Value in Defence. ADS Group & Defence Suppliers Forum. (Available here)

of ESG and impact frameworks for defence, and unclear expectations from investors, governments, and other stakeholders defining what good practice means.[11]

Workshop Objectives

The purpose of this workshop was to gather a diverse group of stakeholders to share experiences and ideas for solutions on several questions, including:

1. How can we draw on lessons learned from companies and investors to progress the ESG agenda in dual-use technologies? How could investors and policy makers better connect on the ESG agenda?
2. What could a policy framework on ESG in dual-use technologies look like?
3. How could investors collaborate to standardize the language and build a register of technologies?
4. What steps could be taken by decision-makers to ensure the ESG agenda applies across the board, including in investments and procurement processes? What mechanisms and structures could be put in place?

Workshop Participants

The workshop convened UK stakeholders including ESG leaders from the corporate sector, venture capital investors, academics, and UK policy makers. The workshop was conducted under Chatham House Rules.

Contents of Brief

This brief provides background context as well as observations and ideas for potential solutions shared by the workshop participants across six domains:

1. Clarifying terms used when discussing dual use and ESG
2. Developing ESG policies and exclusion criteria for investments
3. Complying with ESG regulations
4. Addressing ESG ratings methodologies
5. Bridging governance gaps in international frameworks
6. Measuring social and environmental outcomes of dual use investments

11 Dual Use and Defence Tech Guidance. VentureESG. 2024. (Available here.)

Summary of Findings

1. Clarifying Definitions:
What is Dual Use? What is ESG? Why does ESG matter?

Context: The concepts of dual use and ESG both have complex definitions and several related but distinct terms that have led to confusion in policy discussions. Among some of the key concepts and their definitions are:

- **Dual Use** The EU defines dual use as: “Dual-use items are goods, software and technology that can be used for both civilian and military applications.” Many dual-use items are subject to export controls regulations, which are set by various countries. In the UK, dual use items that are subject to export controls are listed in the UK Strategic Export Control List. Investors use the term “dual use” more broadly to include any situation where a military or intelligence agency is a user of a company’s product.[12] This can lead to confusion in situations where companies are selling a product to a military customer that is not a national security concern and therefore not subject to export controls.[13] Other terms that are frequently used that are not clearly defined include “weapon” “arms and munitions” “offensive vs. defensive capability of weapons”[14] and “critical components of weapons.” Other concepts such as “weaponization potential” are used to describe items that could be used by civilians and non-state actors as weapons, which are not manufactured or sold with that intent. The lack of clear definitions can block or slow investment decision making processes and increase time needed for staff to evaluate special situations for current investees.
- **ESG** The UN Principles for Responsible Investment (PRI) defines responsible investment as: “considering environmental, social and governance (ESG) issues when making investment decisions and influencing companies or assets (known as active ownership or stewardship).”[15] **ESG issues** cover a wide range of topics (see Figure 1). ESG is not a one-size-fits-all approach. **Materiality Assessment** is the process of prioritizing which ESG issues a company needs to address by identifying which issues have the greatest impact to a company’s business outcomes (**financial materiality**) and to its stakeholders, the

12 Dealroom, a VC industry data provider, defines a dual use venture as: ”companies that develop products and services with applications in both civilian and military sectors.” The State of Defence Investment 2024 – Resilience builders in NATO & Europe. Dealroom. (Available here)
13 Defence, dual use and deeptech: Blurry definitions are creating a schism among VCs. *Sifted*. 2024. (Available here)
14 VCs and LPs should stop kidding themselves about ‘dual use’ defence tech. *Sifted*. 2024. (Available here)
15 UN PRI. What is Responsible Investment? (Available here)

environment and broader society **(impact materiality**) - a process that results in a customized strategy that fits each company's unique industry, geography, products, business models, customers, and stage of development. [16]

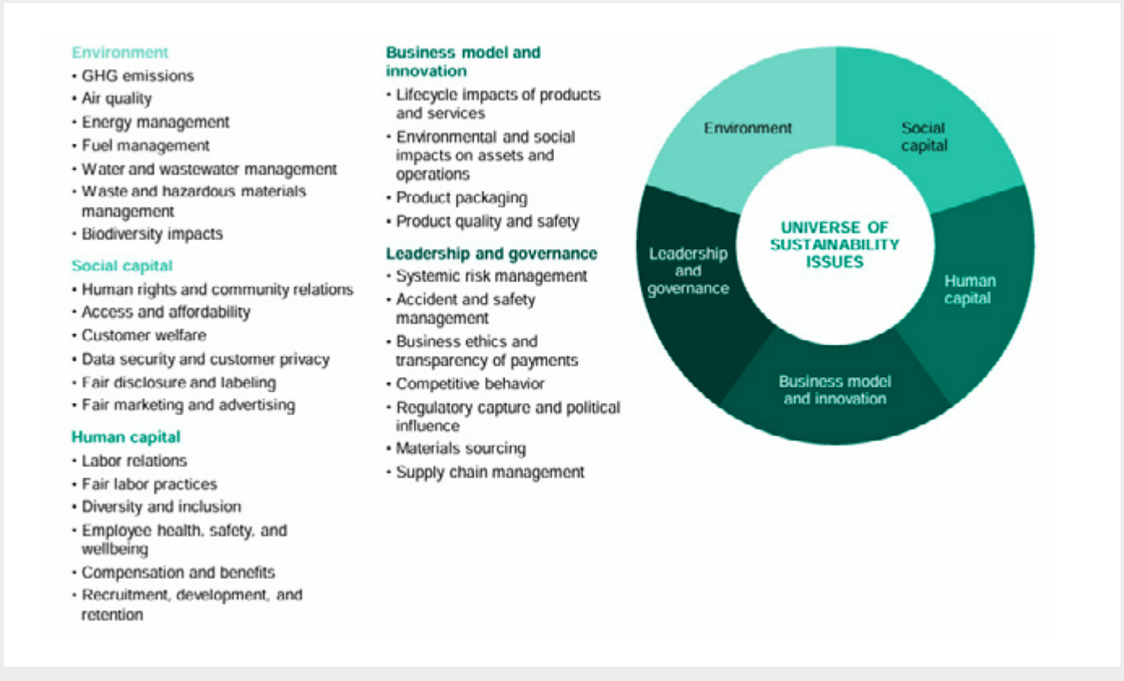

Figure 1. Universe of ESG Issues

Source: SASB Universe of Sustainability Issues. 2017. IFRS. (Available here.)

ESG integration and management is closely related to a few similar, but distinct concepts.[17] **Thematic investing** (or impact investing) is seeking investments that contribute to social and environmental solutions such as clean energy, circular economy, universal health care, etc. **Ethical investing** (or values-based investing) is investing using screens (or **exclusion lists**) to avoid certain sectors, products or business practices that an individual or institution deems unethical (i.e., pornography, weapons, pork, alcohol, etc.)

16 VentureESG's materiality tools for ventures are available at: https://www.ventureesg.com/research/
17 UN PRI. What is Responsible Investment? (Available here.)

Participant Observations & Potential Solutions:

Several participants discussed how ESG should not be understood as a separate, stand-alone process, but rather embedded in current investment and company processes and decision making including:

- ESG needs to be thought of in the broader context of risk management. Dual use technologies have many kinds of risk exposures including geopolitical, procurement risk, and political risk of government customers changing priorities with successive administrations and agency leadership
- ESG can play different roles that complement the existing due diligence process and risk management process inside companies including:
  1. supply chain risks (i.e. critical minerals, supply chain disruptions due to geopolitical tensions or climate disasters, etc.),
  2. operational effectiveness of products (i.e. Will the product perform as stated or necessary? Will issues related to climate change impact performance capabilities of products?) and
  3. responsible use (will the product cause harm to operators, civilians, society or the environment?)
- ESG should also be embedded in the product development process by looking at materials, product lifecycle, and energy efficiency as core parts of innovation.
- Investor requests for companies to do ESG management need to be considered in the context of the overall capacity constraints that small businesses /ventures face when doing business with defence agencies. Other issues that constrain staff capacity of dual use ventures include complex procurement procedures, long time frames for decision-making and government customers pivoting in their requirements and technology performance needs. Larger companies can absorb the costs needed to manage these issues, while small businesses/ ventures often cannot.

- Participants also mentioned the need for a few specific solutions that could help clarify the concepts of dual use and ESG including:
  - » Creating standardized definitions of what constitutes a "weapon" and "arms and munitions", accounting for types of weapons delivery systems and emerging forms of warfare and defence technologies (i.e. non-kinetic warfare, hybrid warfare, information warfare, etc.)
  - » Standardizing language used in policies and contracts (i.e. terms sheets) for limited partners and general partners
  - » Moving beyond technology-level frameworks to applications: "fundamentally the issue isn't the technology-it is about ethical use."
  - » Moving beyond high-level frameworks for ESG and "drilling down into very specific use cases and industries" to define what the risks are
  - » Case studies and specific performance criteria that define "What does good look like?"

2. ESG & Investment Decision Making:

How do values and ethics influence decisions in dual use investing?

Context: In addition to commercial potential and strategic goals, investors also incorporate their personal ethics and values into investment decisions. Two types of concerns generally drive investor decisions on sectors and products in which they will not invest, both of which are common in the defence sector:

- **Legal and Regulatory Risks** Defence and dual use companies have high exposures to a variety of regulatory requirements including compliance with export controls and national security and secrecy laws. Companies also have risks that their products may be used in banned and controversial weapons,[18] become components of weapons and other military and surveillance equipment against their knowledge, be used in warfare contexts where there is a likelihood of causing significant harm to civilians in violation of the Geneva conventions or other international human rights norms.
- **Reputational Risks** Investors also have reputational risk exposure from investments in the defence sector. Large institutional investors who are asset owners (pension funds, university endowments, etc.) have to be accountable to their stakeholders and incorporate their preferences into investment management. A recent wave of protests and activism surrounding Russia-Ukraine and Israel-Gaza has brought renewed attention to the role investors and companies play in shaping geopolitical conflicts.[19] The polarizing responses among stakeholders, the media, and politicians to armed conflicts can further solidify their hesitancy to invest in defence and dual use companies.

Investors control their exposures to ethical issues through a variety of policy mechanisms including:

- **Exclusion Lists** Many large institutional investors have a Responsible Investment Policy (also called ESG Policy) that include formal exclusion lists[20] that prohibit investment in a range of sectors and products considered ethically controversial or environmentally harmful. In the case of defence, many investor exclusion lists include language prohibiting their capital be used to produce 'arms and munitions'. However, they do allow for other types of military-funded technologies that may serve a dual use purpose with civilian applications.

18 For example, Chemical Weapons Convention (CWC) (1997), Biological Weapons Convention (BWC) (1972), Convention on the Prohibition of Anti-Personnel Mines (Ottawa Treaty) (1997), Convention on Cluster Munitions (2008) The Convention on Certain Conventional Weapons (CCW) (1983)

19 For example, in 2022, several civil society campaigns were effective in advocating for investors and companies to withdraw investments and operations in Russia in response to the invasion of Ukraine (i.e., Boycott Russia campaign). In 2024, students and faculty at over 100 U.S. universities held encampment protests demanding that their endowments divest from weapons and arms manufacturers generally and/or certain businesses selling to or based in Israel in response to growing civilian casualties in the ongoing Israel-Gaza conflict.

20 For a list of exclusion policies see Annex D, p. 34: ESG and Dual Use. VentureESG. 2024. (Available here)

Yet the difference between what is a 'defence' vs. a 'dual use' investment can become blurry when technologies that have civilian purposes are also deployed inside weapons systems or in certain warfighting and intelligence operations.[21] Additionally, non-kinetic warfare applications are not captured under current 'arms and munitions' exclusions including psychological warfare (disinformation, influence operations), election interference, economic warfare, cyber warfare, hybrid warfare, among others.

- **Position Statements** Sometimes investors issue position statements in response to armed conflicts and other controversial situations and take actions to address their investment exposures to companies involved in the situation. These actions can range from dialogue with company leadership on minimizing exposure to the conflict, mitigating harms of the conflict to outright divestment from companies.
- **Term Sheet Clauses and Side Letters** Investors enforce their policies using contractually binding provisions and post-investment monitoring and compliance. In the case of dual use ventures term sheet clauses might include not to build use cases for military customers or to inform investors before pursuing a military contract.

Participant Observations & Potential Solutions:

- Participants shared that it can be challenging to develop their ESG policies and exclusion lists - which can sometimes result in requirements that are confusing and/or seem arbitrary: "fundamentally it comes down to your own personal ethical position on your relationship with how you interact with the world."
- Investors also acknowledged they can have significant influence over how technology is developed through the application of ESG policies (or lack thereof).
- One participant shared their fund's analysis for potential dual use investments, which looks at a spectrum from: Is the product a weapon? Is it intended to be a critical component of a weapon? Does it have potential to be used as a weapon ("weaponization")? Does it have potential for offensive capabilities (vs. defensive only)? Could it have human rights impacts, such as activities stemming from its surveillance capabilities potentially being used on civilians?
- Participants observed that different funds will draw the line of what is permissible in different places on these questions. These differences in policies can be challenging for ventures to navigate when they are trying to raise money and when trying to develop and sell their products. It is also challenging to the national security organizations seeking to acquire certain capabilities, as companies may have contractual restrictions from investors not to sell to military organizations. This may lead to gaps in needed defence capabilities, because certain types of products may not be able to be funded or sold to defence customers.

21 Defence, dual use and deeptech: Blurry definitions are creating a schism among VCs. *Sifted*. 2024. (Available here)

- Some investors and company representatives noted they face challenges of having to deal with waves of public support and backlash related to shifting public support towards conflicts, which can be difficult to manage – as they do not have control over political decisions as to which conflicts and operations are undertaken with the defence products they finance or produce.
- Participants noted that reputational risk also manifests for them in terms of changes of public appreciation towards the armed services. They noted there are "peaks and troughs" in public appreciation, regarding specific conflicts and specific operations that are undertaken. Yet they noted that governments have to "be resilient" to public opinions, as they have a responsibility to do things for "long term deterrence" that will prevent conflicts from escalating, even if those actions may not be fully understood by the public or are not popular in the short term.

3. ESG Regulations:

What are the benefits and drawbacks of regulations? What are the challenges for compliance?

Context: Investors are currently working to comply with a growing set of EU regulations on ESG due diligence and reporting including: Sustainable Finance and Disclosure Regulation (SFDR), EU Taxonomy Minimum Safeguards, Corporate Sustainability Due Diligence Directive (CS3D) and Corporate Sustainability Reporting Directive (CSRD). These regulations have various requirements for investors and companies to comply with other frameworks including:

- **UN Guiding Principles on Business and Human Rights** (UNGPs) which require companies to protect, respect and remedy human rights
- **OECD Guidelines for Multinational Enterprises on Responsible Business Conduct** (OECD MNE Guidelines) which have requirements to adopt a human rights policy and human rights due diligence as well as conduct environmental due diligence and technology risk due diligence

This has raised questions on what responsible business conduct in the context of defence and dual use companies means and how it should best be measured.[22]

Participant Observations & Potential Solutions:

- Participants noted regarding the sustainable finance regulations that there still needs to be clarification on exact due diligence and reporting standards with which they are expected to comply. (However, this challenge is not unique to the defence industry, as these regulations lack industry-specific frameworks.)
- One participant commented that they view export control regulations to be beneficial in that they de-risk the defence industry by restricting sales to certain foreign state actors who would likely abuse technologies.

22 For a discussion of challenges of reconciling EU sustainable finance regulations to EU defence polices see: Mainstreaming defence industrial readiness culture throughout all policy areas at EU and national levels. EU Commission. (Available here)

4. International Frameworks:

How do international frameworks need to adapt to technological advancements in dual use and defence?

Context: Investors reference several frameworks when looking to identify potential material ESG risks of investments. Some ESG frameworks such as the Sustainability Accounting Standards Board (SASB) and Global Reporting Initiative (GRI) provide guidance on material issues of the defence[23] industry related to environmental footprint management, GHG emissions reduction, aerospace safety and accident prevention, and preventing bribery and corruption in defence contracting . However, current ESG frameworks have two key gaps:

- **Human Rights in Dual Use Technologies** The UN Office for the High Commissioner on Human Rights (OHCHR) has noted that despite the progress that the defence sector has made in addressing human rights concerns regarding its workers and supply chains, it is still failing to address human rights concerns that arise from its products being deployed in various contexts of warfighting and intelligence operations.[24] Recognizing these gaps, states and international bodies have begun taking action on safeguarding human rights**.** In 2021, the Summit for Democracy launched the Export Controls and Human Rights Initiative, which includes a voluntary ~~Code of Conduct~~[25], followed by the Guiding Principles on Government Use of Surveillance in 2023 and the Joint Statement on Efforts to Counter the Proliferation and Misuse of Commercial Spyware in 2024. (The UK is a signatory to all.) In 2023 the UN Human Rights Council established an Advisory Committee to study Resolution 51/22: Human Rights Implications of New and Emerging Technologies in the Military Domain (NTMD). Among the human rights implications being studied are: use of artificial intelligence and automated decision-making systems for remote warfare,[26] technologies for human enhancement, technologies with applications for law enforcement and border patrols, and technologies for mitigating civilian casualties.

23 For an example of a defence industry materiality assessment see: S&P Global. ESG Materiality Map: Aerospace & Defense. July 2022. (Available here)

24 OHCHR has noted: "While some companies may conduct due diligence in terms of risks of forced labor and other human rights concerns in their supply chains and workplaces, identification of risks of negative impacts by virtue of the use of their products or services in different places and conflicts is still largely absent." Responsible business conduct in the arms sector: Ensuring business practice in line with the UN Guiding Principles on Business and Human Rights. OHCHR. 2022. (Available here)

25 The code of conduct includes, among other items that states will "Consult with industry and promote non-state actors' implementation of human rights due diligence policies and procedures in line with the UN Guiding Principles on Business and Human Rights or other complementing international instruments, and share information consistent with national law with industry to facilitate due diligence practices when implementing export control measures."

26 See: UN Resolution 78/241: Lethal autonomous weapons. Adopted on 22 December 2023 (Available here)

- **Environmental Protection in Dual Use Technologies** Similarly, while current ESG frameworks address the environmental footprint of aerospace company operations and products, they do not capture the full scope of potential environmental harms that may result from emerging military technologies. Recognizing the potential of environmental destruction as a deliberate tactic of warfare, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) was adopted in 1978 that stipulates that "state parties undertake not to engage in military or any other hostile use of environmental modification techniques[27] having widespread, long-lasting or severe effects as the means of destruction, damage or injury to another State party." Among the emerging dual use technologies that could pose catastrophic environmental damage either by accident or if weaponized by a state or non-state actor include: bioengineering and agroterrorism, planetary geoengineering, various space technologies, directed energy and sonic weapons, and potentially some techniques of frontier physics research. Frameworks to address the risks of these technologies are in various stages in academic research and in policy dialogue and drafting.

Participant Observations & Potential Solutions:
Participants noted that it can be challenging to have the technological expertise and foresight necessary to anticipate and mitigate challenges new technologies may face when deployed in military and civilian/commercial contexts:

- Investing in deep technology sectors often requires technological expertise to effectively evaluate and monitor companies. Many investors do not have sufficient expertise to evaluate frontier technologies, and the potential uses cases for military applications, which has the effect of making these investments too high risk.
- Some risks of dual use technologies arise from convergence of multiple new technologies concurrently (i.e. remote sensors that can be mounted on commercially available drones)-thus a framework that looks at one technology in isolation may be missing the full scope of potential uses and risks. Anticipatory governance[28] approaches can be used to help governments get ahead of emerging risks.
- The relative lack of attention given to frontier environmental modification technologies by ESG regulations and standard setting organizations is largely due to the fact that most of these technologies are still in R&D stage-and they have not yet been implicated in any major warfare operations, terrorism, or company controversies that would be the impetus to drive policy change. Yet investors still have a responsibility to try to anticipate future uses and manage risks.

27 Environmental Modification Techniques are defined as: "Any technique for changing – through the deliberate manipulation of natural processes – the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space (article II)."
28 OECD. Anticipatory Governance. Accessed January 6, 2024 at: https://www.oecd.org/en/topics/anticipatory-governance.html

5. ESG Ratings:
What is a meaningful approach to measuring ESG performance of defence and dual use companies?

Context: ESG ratings provide insights to investors on a company's overall risk exposure and management on social and environmental issues relative to its industry peers.[29] ESG ratings are conducted by several different ratings agencies, each with their unique methodologies.[30] ESG ratings can have significant financial implications for companies including access to banking services, credit risk, cost of capital and company valuations. ESG ratings also provide feedback for companies on how they are performing relative to peers and what ESG action items are most important to investors. However, ESG ratings have been criticized for having low correlation in scores given to companies among different ratings agencies – a challenge called "aggregate confusion." To address the growing confusion, the UK government issued draft legislation in 2024 that would place ESG ratings agencies under the supervision of the Financial Conduct Authority (FCA) with the aim to improve transparency in ESG ratings methodologies.[31]

Participant Observations & Potential Solutions:
Participants shared several challenges they have faced with ESG ratings agencies including:

- Some participants shared experiences regarding the "aggregate confusion" of the ratings systems, including challenges of interpreting inconsistent ratings being given to them from different agencies. They noted that the conflicting feedback makes it difficult to know what steps investors expect them to take to improve ESG performance.
- Some participants voiced concerns that ratings agencies may have given them lower ESG ratings relative to ratings given for similar ESG improvement efforts made by companies in other industries due to defence customers and use cases being higher risk (i.e. net zero commitments, circular economy, supply chain management, etc.)
- Participants highlighted the need to improve dialogue between the defence companies and the ratings agencies. The goal of this dialogue would be to clarify: 1. the precise nature of the material ESG risks in the defence industry ("risk identification") 2. how to assess whether or not a defence company is adequately managing its ESG risks ("risk management"), and 3. how to measure meaningful contributions defence companies make to the transition to net zero through development of lower-emission energy and propulsion systems in aircraft and other vehicles.

29 For an example of a sector level ESG ratings report see: Sustainalytics. Defense and Aerospace: Ready for Takeoff? (Available here)
30 Ratings agencies include ISS, MSCI, LSEG, Bloomberg, Sustainalytics, among others. A comparison of ESG ratings methodologies is available here: https://www.knowesg.com/featured-article/esg-ratings-a-benchmark-for-performance
31 UK Launches Proposed Law to Regulate ESG Ratings Providers. ESG Today. November 18, 2024 (Available here)

6. Impact Management & Measurement:
How can environmental and social good of dual use innovations be measured?

Context: Impact investing is defined as "investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return." Impact investments can target both market and below-market rate returns. Impact investments are also characterized by "intentionality" to achieve a positive social or environmental outcome and "accountability' to measure and report the social and environmental outcomes of the investments.[32]

Impact management and measurement frameworks define the methodologies to measure outcomes of specific sectors and goals. Impact measurement can be particularly useful in situations where private companies are providing public goods that need to be evaluated for outcomes to users and fiscal accountability to taxpayers - such as health, education, public transport and social services. Impact frameworks can also contribute to ESG risk management efforts by more precisely defining the parameters of a responsible product through measuring its performance characteristics, and its direct and indirect outcomes to users, the environment and society. The primary impact frameworks include:

- **Country Frameworks** The UN Sustainable Development Goals (SDGs) is the internationally recognized framework for countries to measure progress towards social and environmental goals. SDG 16 Peace, Justice and Strong Institutions covers a range of goals that are promoted by defence and dual use companies including reduction of: violence, homicides, armed conflicts, conflict-related displacements, terrorism, illicit financial flows, and human trafficking.
- **Investor Frameworks** Investors use frameworks to measure impact of investments that are intended to advance SDGs. The primary impact framework used is the Global Impact Investing Network's (GIIN) IRIS+ metrics which are used by investors to measure a company's positive social and environmental outcomes. The IRIS+ metrics currently do not provide a framework to evaluate whether defence and dual use companies are delivering on product claims of contributing to global peace and security.
- Similarly, these frameworks do not capture the full scope of risk and resilience activities of dual use technologies in protecting digital infrastructure, communications, energy, food security, biosecurity and satellite and planetary defence in the space domain. Improving impact frameworks could contribute to assuring integrity in product claims of dual use companies as well as to avoid accusations of impact-washing and green-washing. [33]

Participant Observations & Potential Solutions:
Various participants noted limitations to current impact frameworks including:

- Frameworks tend to cover many different metrics which can make them very difficult for emerging companies in the technology space to complete due to lack of resource and ESG expertise.
- The SDGs are not an adequate framework for measuring and monitoring impacts of companies and investments in defence. An impact framework that looks at defence more broadly may be needed to capture the full scope of activities that defence agencies undertake. This includes frameworks to measure effectiveness of products meant to support conflict deterrence and prevention of terrorism and crime.
- Defence and dual use companies contribute to climate adaptation by providing solutions to address the increase in climate-related crises involving "natural disasters, humanitarian issues, and migration of people." Impact frameworks need to better account for dual use companies making contributions to climate adaptation.

32 GIIN. What You Need to Know about Impact Investing, accessed January 3, 2025 at: https://thegiin.org/publication/post/about-impact-investing/

33 Notably, a few investor initiatives have been formed to address peace and security issues. Yet this conversation has not expanded to include defence technology and dual use companies broadly. For example, EIRIS Foundation's Conflict Risk Network is a collaboration of large institutional asset owners on improving risk management for companies operating in areas affected by conflicts (mining, agricultural commodities, etc.). A new initiative launched by Interpeace in November 2024, the Finance for Peace initiative, is convening stakeholders to develop standards for 'Peace Bonds' which are investments that promote peacebuilding.

Next Steps

Action Steps

The workshop participants suggested several ideas which could be next steps to advance ESG in defence and dual use including:

1. **Standardized Approaches and Contractual Language:** Create standardized language on dual use and military use cases that can be used in investor exclusions and term sheet clauses
2. **ESG Management Guides:** Create detailed guides on dual use technologies, potential use cases, converging technologies, risks, and case studies on what good practice in ESG looks like
3. **ESG Rating Agency Engagement:** Engage ratings agencies to discuss how to better evaluate risk exposures and management in the defence sector
4. **ESG Regulatory Engagement:** Engage EU regulators on clarifying how to implement sustainability due diligence and reporting requirements in the context of weapons and military use cases
5. **ESG Standards:** Engage ESG standard setting boards and international institutions to update frameworks to cover risks of frontier military technologies, human rights to end users and catastrophic environmental destruction
6. **Impact Management and Measurement Framework:** Engage impact standards setting boards on how to measure outcomes of companies building solutions to conflict deterrence, counterterrorism, law enforcement, support to humanitarian and peacekeeping missions, and resilience to conflicts and natural disasters

Future Dialogues

The discussions at this workshop highlighted several potential areas for future dialogues and collaborations.
For **financial institutions** allocating capital to fund managers and companies building dual use technologies, future discussion and collaboration could include:

- What **policies** should financial institutions adopt regarding defence and dual use? How should they decide in which technologies and applications they should or should not invest? How can the language used in policies be standardized and harmonized across institutions? Does there need to be a standardized risk register[34] of specific dual use applications and use cases?
- How can financial institutions best implement **due diligence and safeguards** on dual use technologies with unknown applications and use cases?
- How can financial institutions monitor compliance with policies and engage in **stewardship** with dual use companies selling to military and intelligence customers where the technology or use cases are undisclosed or classified?
- How can financial institutions best engage in **collaboration** to support dual use fund managers and company leadership teams in knowledge sharing for evaluating technological risk and integrating principles of responsible innovation into their products, business models and processes?

For **defence agencies,** future dialogues could explore:

- What **policies, safeguards and oversight mechanisms** are currently in place to ensure there is ethical use of emerging technologies in agency operations and by their contractors? On which issues or technologies are policies currently missing or unclear?
- Should agencies have a **'Responsible Technology Officer'** to oversee policy development and compliance for ethical uses of technology? How would this role integrate into overall processes in an agency?
- How can agencies ensure issues related to ESG, sustainability and responsible technology is considered in **procurement** and in **government funding** decisions (i.e. defence innovation grants) for dual use ventures?
- How can agencies best improve **transparency and communication** with investor, company, and other stakeholder requests regarding concerns of ethical use of technology?

If you would like to collaborate to support solutions for dual use investors aes startups please reach out to hello@ventureesg.com. If you would like to discuss ideas for academia-to-policy engagement in this space, please reach out to policyworkshops@csap.cam.ac.uk.

34 For an example of a Risk Categorisation List see: EBRD Environmental and Social Risk Categorisation List. (Available here)

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