

THE ROLE OF INDUSTRY AND ACADEMIA IN IMPLEMENTING UNSCR 1540

© Paul Pastourmatzis - Industry can offer valuable insight for UNSCR 1540 implementation

ABSTRACT

This paper explores the essential roles of industry and academia in supporting the implementation of United Nations Security Council resolution 1540 (UNSCR 1540) through compliance, innovation, education, and research. Industry, with its practical experience and technological capabilities, ensures the secure handling and monitoring of sensitive materials, while academia provides critical training and generates research to inform policy and practice. The paper highlights the need for a collaborative, State-driven approach that leverages the strengths of industry and academia to enhance counter-proliferation efforts. Challenges such as differing priorities, lack of awareness, and communication barriers are discussed, along with recommendations for fostering a unified strategy through increased funding, diverse expert involvement, and regular stakeholder interaction. The paper concludes that a comprehensive, integrated approach involving State, industry, and academia is vital for the effective implementation of UNSCR 1540 and the advancement of global security.

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INTRODUCTION

In 2004, the United Nations Security Council adopted resolution 1540, which brought legally binding obligations to all UN Member States. For this reason, it is one of the key international agreements designed to prevent non-State actors from acquiring WMDs

and their means of delivery.¹ The resolution, essentially, calls on Member States to take the required actions to prevent the spread of chemical, biological, and nuclear weapons. In particular, operative paragraph 3 (c) and (d) emphasize the need to protect technology and sensitive materials and to ensure

that policies are in place to prevent illegal use and trafficking.²

Given the complexity and global nature of WMD threats and the evolving threat of terrorism, it is important to have a unified approach driven by State policy.³ Industry and academia, having a substantial

1 Muhammed Ali Alkis, "Threat of Nuclear Terrorism: The Developing Nuclear Security Regime," *International Journal of Nuclear Security* (2022), <https://dx.doi.org/10.7290/ijns07e3t1>.

2 UN Security Council, *UN Security Council Resolution 1540* (New York, NY: United Nations, 2004), <https://documents.un.org/doc/undoc/gen/n04/328/43/pdf/n0432843.pdf>.

3 George Foster (Amport Risk), interview by the Author, June 2024.

role in the implementation of requirements and education of current and next generations, bring diverse and specialized perspectives for integrated State-driven counter proliferation efforts. In this context, industry provides inputs from real-world experiences of day-to-day practicalities. At the same time, academia educates and trains students, professionals, and policymakers so that they are equipped with relevant knowledge and skills. All in all, this paper examines the value of State-industry-academia dialogue on counter-WMD proliferation priorities and issues. It offers how these stakeholders contribute to support compliance and the development of robust counter-proliferation measures.

UNSCR 1540 AND NON-STATE ACTORS

UNSCR 1540 targets non-State actors explicitly by calling for all nations to abstain from offering any assistance to non-State actors who seek to develop, obtain, produce, possess, transfer, or use nuclear, chemical, or biological weapons and their delivery

systems.⁴ It emphasizes the importance of preventing non-State actors—like terrorist groups or criminal organizations—from obtaining WMDs, in acknowledgement that even the possibility of such a scenario presents a serious risk to international security.⁵

However, it is misleading to assume all non-State actors pose a risk to international security; industry and academia, which could be categorized as non-State actors themselves, play crucial and positive roles in countering these threats. Their expertise and experience are important assets in the implementation of effective counter-proliferation measures, for which they are well positioned to complement Member States' efforts.

INDUSTRY'S ROLE IN IMPLEMENTING UNSCR 1540

Within a cohesive State-led strategy, industry, particularly the sectors engaged in the development, handling, and export of technology and sensitive materials, should be

at the forefront of the fight against the spread of WMDs. Industries in the nuclear, biological, chemical, and radiological domains have the cutting-edge skills and expertise required to create and carry out efficient policies.

Industry translates the responsibility imposed on Member States by the resolution into compliance with regulatory requirements.⁶ The industry's role includes innovation and deployment of technologies to detect, track, and secure materials to prevent any unauthorized or criminal activities within their scope of work. Nuclear power plants, chemical manufacturers, and biotech companies generally follow strict security protocols so that their goods and research do not fall into the wrong hands. This compliance not only satisfies legal obligations, but also preserves the financial and moral standing of the companies.

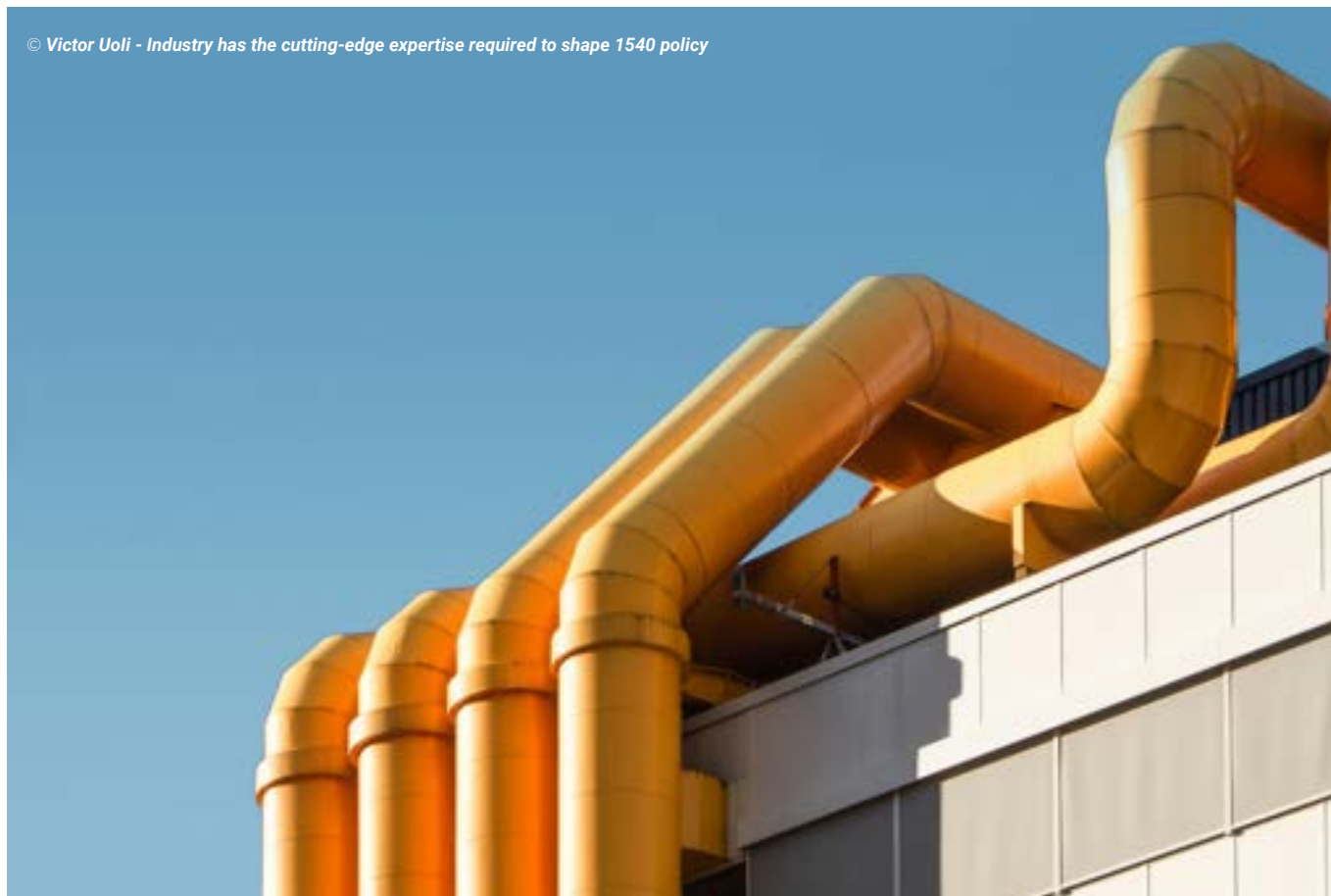
Moving beyond legal compliance, industry's practical experience offers valuable insights to policymakers and the wider international community, sup-

4 UN Security Council.

5 Mustafa Kibaroglu (MEF University), interview by the Author, June 2024.

6 Alex Barrow (Nuclear Transport Solutions), interview by the Author, May 2024, Online.

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porting decision-making and prioritization of efforts at the multilateral level. Industries have developed sophisticated systems for monitoring and controlling the use of dangerous substances, directly contributing to the objectives of UNSCR 1540. Furthermore, industries may have a significant influence on laws and policies related to countering the spread of WMDs. Their real-world, experience-based, practical insights and input on suggested solutions guarantee that the policies are workable and beneficial in the real world.

To continue this conversation, internal compliance initiatives and strong corporate leadership, such as employee training, frequent audits, and safe handling procedures for confidential data, are needed to comply with both national and international laws. Industries that have such programmes will be better equipped to handle potential security breaches and ensure regulatory compliance, as well as to develop a robust security culture. This bottom-up approach can also complement the top-down approaches that most States have, so that practical experi-

ences can fill in gaps appearing due to policy implementation challenges.

ACADEMIA'S ROLE IN IMPLEMENTING UNSCR 1540

Complementary to a comprehensive State-driven policy, academia plays an important role in training current and future generations about the dangers presented by non-State actors and the proliferation of WMD. Under this framework, academic institutions and research centres provide specialized

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courses on biological risk management, chemical safety, nuclear security, and security studies. In return, these provide students, professionals and policymakers with the information and abilities they need to combat proliferation efforts in their current or future employment.⁷

Academic institutions also cooperate with State agencies and international organizations to develop and deliver training programmes for professionals. These programmes range from

technical know-how to legal compliance and ethical considerations with an interdisciplinary approach, covering various aspects of WMD counter-proliferation.⁸ In addition, academia has the flexibility to update its programmes, so that professionals are well-prepared to address emerging threats and challenges.

In addition to the educational role of academia, academic research contributes to the body of knowledge on WMD counter-proliferation.

Scholars conduct various types of research, which will often lead to the exploration of new strategies. These strategies can reinforce the existing mechanisms for detecting and preventing the spread of sensitive materials, assessing the effectiveness of existing policies, and proposing innovative solutions to emerging challenges. In this way, research findings might provide a scientific basis for policy development and help identify areas needing additional efforts.

⁷ Mustafa Kibaroglu (MEF University), interview.

⁸ Mustafa Kibaroglu (MEF University), interview.

Based on their scientific research, academics might also engage in policy analysis and advocacy, possibly influencing the direction of national and international WMD counter-proliferation policies. With academic-scientific perspectives, they might help policymakers design robust and informed counter-proliferation strategies.⁹

THE IMPORTANCE OF OUTREACH

As the role that industry and academia can play is clear, it is possible to state that a strong dialogue among different stakeholders—in other words, State, industry, and academia—is important for the effective implementation of UNSCR 1540. However, it requires the political will, policies and pan-stakeholder structures to enable an integrated approach.¹⁰ Then, this collaboration can benefit from the unique strengths of each and foster an integrated approach to counter-proliferation. In this context, States benefit from the technical expertise and

practical insights of industry and academia, while industry and academia gain a better understanding of regulatory requirements and policy objectives.¹¹ These collaborations leverage the strengths of each sector, combining the industry's practical expertise with academia's research capabilities and the State's regulatory authority.

In reference to the benefits of this collaboration, knowledge exchange between academia and industry can foster innovation and drive progress in counter-proliferation technologies. Joint research projects might facilitate the sharing of expertise and resources. These engagements will create opportunities to identify gaps in existing measures and share best practices. Such findings open the doors for the development of innovative solutions to complex problems surrounding WMD proliferation risks.

While it is difficult to dispute the importance of this partnership, the conversation will not take place without political

willingness. To address this, States need to interact with industry and academia so that there is a higher chance of leveraging the most recent advancements in science and technology into counter-proliferation plans. These initiatives might take several forms, such as collaborative research projects, workshops, conferences, and monthly meetings. These will provide stakeholders the chance to talk about problems, exchange experiences, and come up with creative solutions.

CHALLENGES AND RECOMMENDATIONS

While outreach efforts have certain advantages, there exist challenges, too. In general, despite 20 years since its adoption, legislative, financial, border control, and other obligations stemming from the resolution are considered to be complex at the Member State level, and might not be translated into the understanding of different stakeholders easily.¹² In addition, top-down strategies and excessive

9 Mustafa Kibaroglu (MEF University), interview.

10 George Foster (Amport Risk), interview.

11 Alex Barrow (Nuclear Transport Solutions), interview.

12 Christina McAllister and Annie Trentham, "UNSCR 1540 at 20 Years," Stimson Center, 2024, <https://www.stimson.org/2024/unscr-1540-at-20-years/>.

secrecy can make collaboration difficult. Industry professionals and academic researchers are not always aware of, or do not always have a clear understanding of, non-State actors and proliferation concerns. This has a direct and negative impact on collaborative efforts.

There are different reasons for such challenges. One major hurdle is the differing priorities and languages of State, industry, and academia. States focus on security and compliance, industries on profitability and innovation, and academia on research and education. Furthermore, providing information might present difficulties for both parties. Certain information may make industry and academic organizations unwilling to cooperate because of proprietary or competitive concerns. At the same time, States can be less transparent due to the sensitivity of the information.

There are a few strategies that can help to address these problems. For example, a common framework and un-

derstanding can facilitate bridging the gaps with the overarching goal of counter-proliferation.¹³ In addition, securing increased funding for counter-proliferation research and training programmes will be a better way to foster innovative solutions and build capacity within industry and academia. Equally, diversifying the nomination of national experts to participate in influential decision-making bodies, advisory committees, working groups, and consultative meetings is a game changer.¹⁴ This does not necessarily imply depending less on conventional State and regulatory officials, but rather on increasing the number of industry and academic professionals.

Including industry entities and academia in the planning and delivery of conference side-events and routine capacity-building initiatives is equally important, as their involvement can bring in operational perspectives, elucidate the real-world impact of new technologies, identify gaps in the existing legal and regulatory framework, and highlight emergent security

issues. In a similar vein, regular forums, seminars, and information-sharing platforms will improve coordination and dialogue. Consequently, these will address common problems and encourage a unified strategy for counter-proliferation. Regular interaction among stakeholders will ensure a more unified and effective strategy to better navigate the complexities of counter-proliferation efforts.

While each group –industry, academia, and State– has its distinct role, the way forward to success lies in their ability to work together rather than in isolation. These different stakeholders can develop integrated plans by not only playing to their strengths, but also looking to others with vested interests.¹⁵ This approach strengthens one another as they work towards the common goal of a more secure world. Only when each speciality incorporates methodologies from other stakeholders is it possible to talk about effective counter-proliferation strategies.

13 Geoff McCabe (Energie NB Power), interview by the author, June 2024.

14 Alex Barrow (Nuclear Transport Solutions), interview.

15 Geoff McCabe (Energie NB Power), interview.

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CONCLUSION

In conclusion, for the successful implementation of UNSCR 1540, it is imperative to establish a deliberate and integrated State-driven policy that actively involves every relevant stakeholder, particularly industry and academia. States should prioritize creating frameworks that facilitate collaboration

and knowledge exchange between these sectors. States must benefit from the expertise and experience of academia and industry to develop and maintain counter-proliferation technologies and strategies through public-private cooperation and joint research initiatives. Additionally, it is highly recommended that States focus on increasing the alignment

of national policies with required legislation, having sufficient funding for counter-proliferation research, and promoting continuous education and training programmes. Such a comprehensive and State-led approach will ensure robust and effective counter-proliferation efforts are in place, which will contribute to more secure global environment.