

OUTLOOK

Nuclear NATO: how to make it credible and efficient

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Nuclear weapons and the necessity of nuclear deterrence are back on the political agenda. Russia's war in Ukraine has shattered the illusion of a world free of nuclear weapons, and the popular idea that nuclear weapons are primarily for disarmament no longer holds. Instead, nuclear weapons are once again a currency of power used by authoritarian and aggressive regimes such as Russia, North Korea and China. NATO sees itself as a "nuclear alliance"¹ and defines deterrence based on nuclear weapons as the core of its security. But it is questionable whether the Alliance's nuclear strategy and posture are sufficient for the new security requirements. Four questions are paramount: what does NATO's

Summary

NATO's nuclear deterrence is not sufficiently prepared for the evolving strategic environment in Europe and beyond.

The current Strategic Concept does not define which steps are needed to maintain nuclear deterrence's effectiveness and credibility.

To adapt nuclear deterrence to today's requirements, NATO must first and foremost agree on a new nuclear strategy document.

¹ This term was mentioned for the first time in NATO's Strategic Concept of 2010 and can be found in all Summit declarations since then. See *NATO Strategic Concept*, adopted at the Lisbon Summit 19-20 November 2010, p. 5, https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf

nuclear deterrent consist of? What are NATO's current weaknesses? What will be the impact of President Donald Trump? What needs to be done to maintain a credible and effective deterrent?

NATO's nuclear deterrence capabilities

When referring to the nuclear capabilities of the North Atlantic Alliance, one refers primarily to the U.S. nuclear weapons stationed in Europe. While more than 7,000 American nuclear weapons of various types (bombs, missiles, artillery pieces, nuclear mines) were deployed in Europe in the mid-1970s, this stockpile was reduced to a minimum after the end of the Cold War as a result of assorted arms control agreements and unilateral disarmament steps. Today, NATO's nuclear deterrent capability consists of an estimated 100 U.S. B-61 nuclear bombs stationed in some European NATO countries.² However, this information is classified and should only be understood as a rough guide. Although the governments of the host countries (Germany, Belgium, the Netherlands, Italy and potentially Türkiye) are regularly informed by the U.S. on the numbers of weapons stored, this information cannot be verified. American nuclear weapons depots are closed areas within the military bases of host countries, to which only U.S. personnel have access. It is therefore ultimately impossible to verify whether the individual weapons bunkers, known as "vaults," contain operational bombs or dummies used for training purposes. It is also disputed whether any American nuclear weapons remain at the Turkish base at Incirlik.

These weapons are at the heart of NATO's so-called "nuclear sharing," in which the stationing countries provide the carrier aircraft – in future, uniformly the F-35 fighter aircraft – while the U.S. controls the nuclear weapons. In the event of a mission, the bombs would be delivered to the target area by pilots from the host countries, with the approval of the U.S. President. The details of these agreements are set out in the so-called Programs of Cooperation (PoC).³ The B-61 bombs are currently undergoing a technical revision and modernisation, and will gradually be stationed in Europe as B-61/12.

The nuclear weapons of France and the United Kingdom are not part of these "nuclear sharing" agreements. In 1974, in Ottawa, Canada, NATO defined their role for the first time stating that they have a "... deterrent role of their own, contributing to the overall strengthening of the deterrence of the Alliance..."⁴ because they are subject to two independent decision-making centres, thus increas-

ing the uncertainties for an attacker. This wording from the Ottawa Declaration can still be found today in most NATO documents dealing with nuclear deterrence.

The purpose of nuclear sharing in NATO is highly political. The stationing of American nuclear weapons in Europe has always been symbolised by the U.S. nuclear commitment to its NATO Allies. Conversely, there has been a sign of Europe's willingness to share nuclear risks, since American nuclear weapons stockpiles in Europe would presumably be a preferred target for nuclear strikes by an attacker. They therefore reinforce the idea of U.S. "extended deterrence" for its non-nuclear allies. However, the physical presence of American nuclear weapons is not necessarily essential for extended deterrence. The U.S. nuclear umbrella also extends to countries such as Japan or South Korea even if there are no American nuclear weapons stationed there.

In addition, the bombs are the subject of nuclear consultations within NATO's Nuclear Planning Group (NPG), in which all NATO members – with the exception of France – discuss nuclear capabilities, strategies or targeting. The stationing countries are always given special weight in the NPG's deliberations.

In addition to these political functions, the American nuclear bombs also have concrete tasks in the context of so-called "nuclear messaging." By increasing the readiness of the bombs in storage or by temporarily relocating the stockpile, concrete deterrent threats can be communicated. The fact that then NATO Secretary General spoke in an interview in June 2024 about the possibility of putting more B-61 bombs on standby should be understood as a clear signal of deterrence to Russia.⁵

Another role attributed to the American nuclear bombs in Europe, especially in the early years after the end of the Cold War, was that of a "placeholder" in the event that nuclear weapons became more important again due to a deterioration of the threat situation in Europe. The argument was that a complete withdrawal of American nuclear weapons from Europe would make it politically and militarily much more difficult to return nuclear weapons to Europe. On the other hand, a small nuclear presence, with operational weapons, storage facilities and the existing expertise on all sides, would be easier to expand, if necessary, and would presumably encounter less political resistance. However, this motive weakened more and more NATO member countries who believed in a prosperous cooperation with Russia.

² Hans Kristensen et al., "Nuclear Weapons Sharing 2023," *Bulletin of the Atomic Scientists*, 8 November 2023, <https://thebulletin.org/premium/2023-11/nuclear-weapons-sharing-2023/>

³ See Ashton B. Carter, *Managing Nuclear Operations*, Brookings Inst. Pr., 1987.

⁴ North Atlantic Council, Declaration of Atlantic Relations (The Ottawa Declaration), Ottawa, 19 June 1974, https://www.nato.int/cps/en/natohq/official_texts_26901.htm

⁵ Joe Barnes, "Exclusive: NATO in Talks to Deploy More Nuclear Weapons," *The Telegraph*, June 16, 2024, <https://www.telegraph.co.uk/world-news/2024/06/16/nato-jens-stoltenberg-nuclear-weapons-deploy-russia-china/>

Estimated Global Nuclear Warhead Inventories 2024

The nine nuclear-armed states hold over 12,121 nuclear warheads, with around 9,585 ready for delivery. Russia and the US hold about 90% of all warheads, though this may decrease as other countries expand their arsenals.

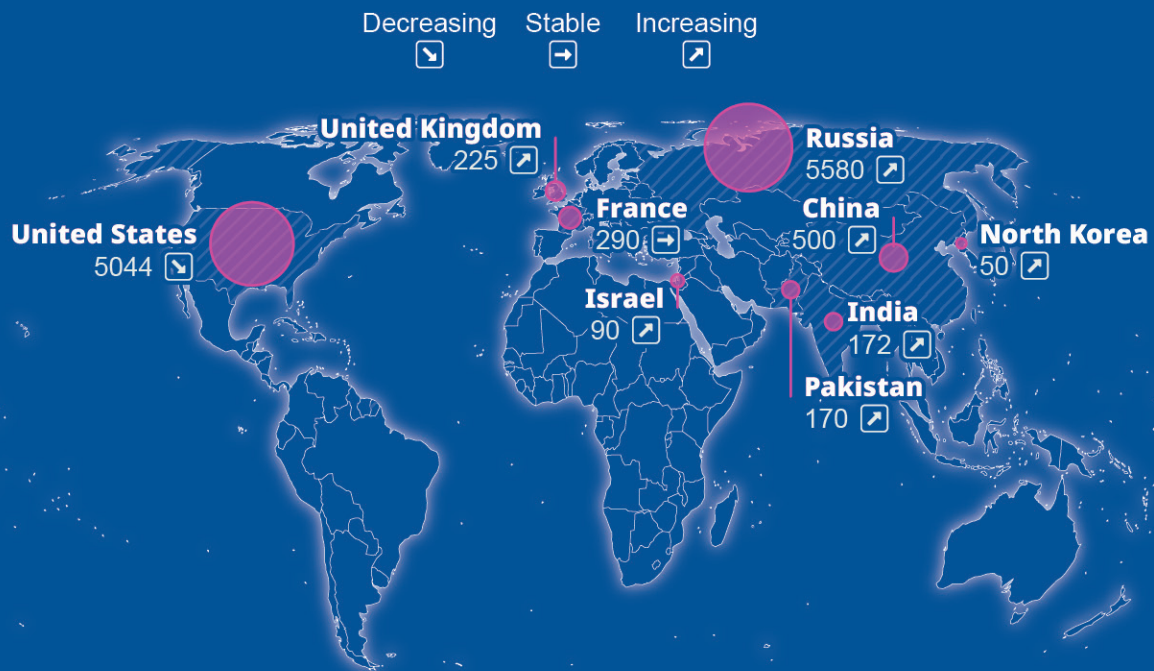


Figure 1. Sources: Federation of American Scientists, 2024; European Commission, GISC0, 2024.

NATO's nuclear problems

NATO's deterrence posture has long been characterised by contradictions and strategic inconsistencies that affect both the weapons arsenal itself and its strategic justification in relevant NATO documents. For a long time, these could be ignored because Russia did not appear to pose an acute threat to most NATO members.

As far as the arsenal is concerned, the problem lies primarily in the fact that the current presence of American B61 bombs as the core of NATO's deterrent was not the result of rational nuclear strategic considerations. Rather, they were weapons that were not included in any of the disarmament rounds of the 1990s and that remained stationed in order not to de-nuclearize the whole of NATO-Europe (and to follow the aforementioned “placeholder” idea). Their strategic logic stemmed from the Cold War, when they were part of a broadly diversified weapons potential and were primarily intended for targets in the Warsaw Pact states. Russian territory was not on the target list for these weapons because of the limited range of carrier aircraft at the time. In order to threaten the Russian heartland, NATO had decided to acquire medium-range

nuclear weapons as part of the NATO “Dual Track Decision” of 1979.

Today, most countries of the former Warsaw Pact are members of NATO and the threat in Europe comes exclusively from Russia. If NATO were today able to fundamentally redesign its nuclear potential without any preconditions, it would hardly opt for free-falling bombs to be transported to Russia by aircraft. If used, these would be exposed to enemy air defences and thus, unlike missiles or cruise missiles, extremely vulnerable. At best, one argument in favour of their existence is that aircraft – unlike missiles – can be recalled from a mission if it turns out to be a mistake. None of this is particularly convincing. In the event of a limited use of nuclear weapons, it would be far more plausible to rely on American Trident submarine-launched missiles, some of which carry warheads with very low explosive power.

These inconsistencies played no particular role in the first decades after the end of the East-West conflict, as Russia was seen as a partner and the use of nuclear weapons was seen as a purely theoretical option. The bombs were retained primarily for political and symbolic reasons. But their number continued to be reduced, and was largely unnoticed. The fact that the U.S. completely dismantled one of the two nuclear bases in Germany in 2007 and re-

located all 130 of the nuclear bombs at the U.S. airbase in Ramstein back to the U.S. was hardly noticed.⁶ A year later, the approximately 110 bombs from the British airbase at Lakenheath were also returned to the U.S. This meant that no more U.S.-controlled nuclear weapons were stored in the U.K.⁷

In 2009, the German government demanded the withdrawal of all U.S. nuclear weapons from Germany. NATO struggled to contain the resulting denuclearization debate by commissioning a committee to report on the Alliance's nuclear deterrence capabilities, as is customary in the Alliance's practice in serious disputes. In 2012, these conclusions were published as the "Deterrence and Defence Posture Review" (DDPR) and was adopted at the NATO summit in Chicago as a basic nuclear document.⁸

Contrary to the hopes of those in favour of withdrawal, the report reaffirmed that NATO would remain a "nuclear alliance" and therefore must maintain a mix of conventional and nuclear weapons. Paragraph 8 of the report states that NATO's nuclear weapons currently meet the requirements of effective deterrence and defence. The document later assures that the mix of military capabilities and the corresponding military planning are "sound" in the circumstances.

In terms of strategic justification, NATO's nuclear problem lies in the fact that Moscow's illegal annexation of Crimea in 2014 has fundamentally changed the security environment. A deterrence capability that was described as "sound" in 2012 – at the time of the partnership with Russia – may no longer suffice in times when Russia has emerged as an aggressive and revanchist power. It is true that NATO has made a number of changes to its nuclear potential by improving nuclear readiness or increasing the number of nuclear exercises and providing realistic exercise scenarios. Moreover, there has been an increase in the number of NATO nations that would support a possible nuclear weapons deployment by NATO with conventional means (aerial refuelling of nuclear carrier aircraft, missions against enemy air defences, etc.).⁹ However, the DDPR remained untouched at the 2012 level. In 2016 however, NATO approved two new nuclear documents: "The Principles and Key Tenets of Credible Deterrence and Defence" and "The Alliance's Strengthened Deterrence and Defence Posture." Even if both documents enhance NATO's nuclear strategy, they are both classified and therefore cannot replace the public DDPR. (Especially since the DDPR has never been declared outdated).

After the unjust and unprovoked large-scale invasion of Ukraine in 2022, further changes were made. For example, NATO's Supreme Allied Commander Europe (SACEUR) was again authorised to draw up concrete nuclear plans in

peacetime. Nevertheless, NATO's basic nuclear document remained unchanged.

In sum, NATO has made some improvements to its nuclear "hardware" and procedures in recent years. What is still missing, however, is the nuclear strategic "software," i.e. a basic political and strategic document that establishes a consensus within NATO on the purpose of nuclear deterrence in the post-2022 world and one that places the existing weapons potential in relation to that purpose. Only with such a consensus, NATO could determine the size and composition of the required nuclear arsenal.

The current Strategic Concept, which NATO adopted at the Madrid Summit in June 2022, does not fill this gap in nuclear strategy. It takes a detailed stance on nuclear deterrence, stating that "NATO will take all necessary steps to ensure the credibility, effectiveness, safety and security of the nuclear deterrent mission."¹⁰ However, the Strategic Concept does not define what steps were needed to keep nuclear deterrence effective and credible. At the 75th anniversary summit in Washington in July 2024, NATO went one step further and explicitly declared – for the first time since the end of the Cold War 35 years ago – that a modernisation of its nuclear potential is also conceivable.¹¹ Here, again, it remains unclear what such a modernisation might look like and to which parts of the posture it refers to.

Donald Trump and nuclear deterrence

The re-election of Donald Trump's as President of the United States has raised questions about the reliability of U.S. security commitments.

It is, however, fundamentally difficult to draw conclusions about actual U.S. policy from the campaign trail statements of the President-elect. But there are at least three arguments that should allay fears that Trump could end the nuclear protection for Allies in Europe or Asia.

First, Trump's frequent criticism is not of alliances per se, but of Allies who refuse to share the burden fairly and continue to rely on the U.S. to subsidise their security. In this justified criticism, Trump differs from the complaints of previous U.S. presidents only in the sharpness of his tone and choice of words, but not in substance. Second, Trump has maintained and even expanded the nuclear deterrent during his first term of office. The Nuclear Posture Review adopted under Trump in 2018 clearly commits the

⁶ Hans Kristensen, "United States Removes Nuclear Weapons From German Base, Documents Indicate," *Federation of American Scientists*, 7 September 2007, https://fas.org/publication/united_states_removes_nuclear/

⁷ Julian Borger, "U.S. Removes Its Nuclear Arms From Britain," *The Guardian*, 26 June 2008, <https://www.theguardian.com/world/2008/jun/26/usforeignpolicy.nuclear>.

⁸ North Atlantic Treaty Organization, Deterrence and Defence Posture Review, Chicago, 20 May 2012, https://www.nato.int/cps/en/natohq/official_texts_87597.htm

⁹ In NATO jargon, these countries were referred to as SNOWCAT countries (Support for Nuclear Operation With Conventional Air Tactics). For some time now, the acronym CSNO (Conventional Support for Nuclear Operations) has been used.

¹⁰ North Atlantic Treaty Organization, NATO 2022 Strategic Concept, Madrid, 29 June 2022, paragraph 30, https://www.nato.int/nato_static_fl2014/assets/pdf/2022/6/pdf/290622-strategic-concept.pdf.

¹¹ North Atlantic Treaty Organization, Washington Summit Declaration, 10 July 2024, Paragraph 9, https://www.nato.int/cps/en/natohq/official_texts_227678.htm

U.S. to a nuclear alliance pledge and announces – against the criticism of the Democrats at the time – the procurement of new types of nuclear weapons in order to increase the flexibility of nuclear employment options.¹² Third and finally, there is still a broad bipartisan consensus in the U.S. on the need for nuclear weapons and an extended nuclear deterrent. In October 2023, the bipartisan “Congressional Commission on the Strategic Posture of the United States” issued its final report, in which it unanimously reaffirmed its commitment to nuclear deterrence and called for new nuclear capabilities to provide a credible deterrent in Europe and the Indo-Pacific.¹³

Maintaining an effective NATO deterrent therefore depends first and foremost on the willingness of the Allies to make their fair contribution to their common defence and to provide some military relief to the United States. This should give pause for thought, especially for those Allies who continue to fall far short of the two percent defence spending target, and tend to pay lip service to Alliance solidarity.

What is to be done? Elements of credible nuclear deterrence

If NATO is to move beyond its general declarations of intent towards a sustainable deterrence consensus, it must address controversial and politically sensitive issues within the Alliance. These include the question of whether NATO’s current nuclear potential – i.e. the nuclear bombs stationed in Europe – is sufficient to ensure a credible deterrent. It is also unclear whether NATO can continue to rely on a nuclear arsenal consisting of only one type of weapon. Thirdly, and finally, it is unclear whether it is strategically coherent to store American nuclear weapons in the countries they are currently deployed, or whether they should be stationed closer to the borders with Russia. This question will become all the more relevant if Ukraine were to join NATO in the future.

None of these questions can be answered in advance, as the politico-military perspectives and legitimate security interests of the alliance members vary widely. This is not surprising, given their different strategic cultures and geostrategic realities. Only a thorough and systematic nuclear debate that goes beyond the current occasional and cursory nuclear conversations among Allies can lead to a new basic nuclear strategy document.

The current DDPR can serve as a basis for the discussion, but its content must be expanded. In the 2012 document, NATO was primarily concerned with the justification of the existing nuclear potential, the possible influence of a functioning missile defence on the deterrence logic, as well as the prospects for arms control and disarmament. A new deterrence review should not only consider the immediate threat posed by Russia, but also nuclear-related developments in the Asia-Pacific region; the option of a nuclear Iran (and the consequences for the proliferation of nuclear weapons in the region); and the possibility of Ukraine joining NATO. The implications of new technological developments such as artificial intelligence and quantum computing must also be examined, as they may have an impact on nuclear security and nuclear deployment procedures.¹⁴

Three basic options, that are not mutually exclusive, are conceivable for a fundamental improvement in NATO’s deterrence capability:

- An increase in the number of weapons stored in Europe;
- a technical modernization of the nuclear potential;
- a relocation of weapons closer to the eastern borders of the Alliance.

Option I: an increase in the number of U.S. nuclear weapons in Europe

The number of American nuclear weapons deployed in European countries had been significantly reduced over the past three decades to the 100 nuclear bombs mentioned above. This was largely due to the assumption of a cooperative Russia, and therefore a diminishing “need” for nuclear deterrence.

To strengthen NATO’s nuclear potential, the U.S. could transfer some of its stockpile of B61 bombs back to Europe. With a total of around 480 modernised B61/12 bombs planned,¹⁵ there is a sufficiently large arsenal for redeployment. The storage sites for the withdrawn weapons appear to have remained operational and could be restocked. The NATO Secretary General confirmed at the NATO summit in Washington in July 2024 that NATO was considering this.¹⁶ In response to Russian aggression, the U.S. is also planning to re-equip the British base at Lakenheath with the modernised version of the B61 bombs.¹⁷ The same could happen in Ramstein, for example, where the vaults could also be reactivated.

The advantages of such action would primarily be political and symbolic. A clear message of deterrence would be sent to Russia, while the NATO Allies would

¹² U.S. Department of Defense, Nuclear Posture Review 2018 (NPR), Washington D.C., February 2018, <https://media.defense.gov/2018/feb/02/2001872886/-1/-1/1/2018-nuclear-posture-review-final-report.pdf>

¹³ See Brad Roberts, “The Next Chapter In US Nuclear Policy,” *Washington Quarterly*, Vol. 47, No. 2, Summer 2024, p. 15.

¹⁴ See Michal Depp, Paul Scharre, “Artificial Intelligence and Nuclear Stability,” *War on the Rocks*, 16 January 2024, <https://warontherocks.com/2024/01/artificial-intelligence-and-nuclear-stability/>

¹⁵ Some of these 480 bombs will be of the further improved B61/13 type with significantly greater explosive power than the B61/12. U.S. Department of Defense, Department of Defense Announces Pursuit of B61 Gravity Bomb Variant, 27 October 2023, <https://www.defense.gov/News/Releases/Release/Article/3571660/>

¹⁶ Joe Barnes, “Exclusive: NATO in Talks to Deploy More Nuclear Weapons,” *The Telegraph*, 16 June 2024, <https://www.telegraph.co.uk/world-news/2024/06/16/nato-jens-stoltenberg-nuclear-weapons-deploy-russia-china/>

¹⁷ Joe Saballa, “U.S. to Station Nuclear Weapons in U.K. Amid Growing Russian Threats: Reports,” *The Defense Post*, 30 January 2024, https://www.thedefensepost.com/2024/01/30/us-nuclear-weapons-uk/?utm_content=cmp-true

see this as a sign of U.S. nuclear commitment. The Allies, in turn, would signal their willingness to share the burden. An increase in the number of weapons already deployed would also be easier to push through politically, and would probably go largely unnoticed by the public.

However, the disadvantages weigh just as heavily. NATO would continue to cling to a nuclear potential consisting of a single type of weapon, the strategic logic of which derives from the political and geographical realities of the Cold War. Despite the improved penetration capability of the F-35 fighter aircraft, Russian territory could only be reached at great risk.

Option II: a change in the nuclear arsenal

The fundamentally changed security situation in Europe requires an equally fundamental strengthening of NATO's nuclear deterrent. In the face of the conventional and nuclear threat posed by Russia, flexible nuclear response options are needed to signal a credible deterrent capability at all stages of escalation of a potential conflict. This can only be achieved with a broader range of non-strategic nuclear weapons.

The U.S. has already initiated such a broadening of the weapons spectrum. In 2018, the Trump administration announced the development of a Sea Launched Cruise Missile (SLCM-N) and a smaller low-yield nuclear warhead (W67-2) intended for submarine-launched ballistic missiles. The subsequent Biden administration cut funding for the cruise missile (without terminating the programme), but continued development of the W67-2 warhead.

To diversify NATO's nuclear deterrent, the U.S. would have to deploy additional types of nuclear weapons in Europe in coordination with its allies, in addition to the stored bombs. Land-based missiles are out of the question because the Pershing II missiles once deployed in Europe have been destroyed under supervision in accordance with the 1987 Intermediate Nuclear Forces Treaty (INF). Nuclear air launched cruise missiles (ALCMS-N) would be an option, but they would first have to be developed for the F-35 fighter aircraft,¹⁸ which could take up to 10 years.

Ground-launched Tomahawk cruise missiles with a range of 1600 kilometres would be most likely. At the NATO summit in Washington in July 2024, Germany and the U.S. decided to station the conventional version of these weapons in Germany. A nuclear version of this cruise missile also exists and is equipped with the W80 nuclear warhead. Assuming a consensus within NATO, these weapons could be deployed in Europe relatively quickly.

The advantages of such a move could be that the Tomahawks have mobile launch pads and do not offer fixed targets. The penetration capability of cruise missiles is also higher than that of aircraft. This would provide

NATO with a less vulnerable and more reliable nuclear response option. It would also send a clear signal to Russia that NATO will not be intimidated by Moscow's nuclear threats.

The disadvantages would mainly be political, as such a decision could lead to public protests in the countries where the weapons are deployed. It is worth noting, however, that the German decision to deploy conventional Tomahawks triggered hardly any public reaction.

Option III: a change of stationing locations

Whatever the size and configuration of NATO's nuclear potential, the question is where in Europe should these weapons be stationed. Like the B61 bombs themselves, their geographical distribution is still based on the logic of the Cold War, which was characterized by the division of Europe along the inner-German border. Although this became obsolete with the fall of the Berlin Wall, NATO committed itself in the "NATO Russia Founding Act" of 1997 not to station nuclear weapons on the territory of the new member countries in Eastern Europe.¹⁹ The bombs were therefore left in the existing storage facilities in Germany, Belgium, the Netherlands, Italy, the U.K. (until 2008) and (possibly) Turkey.

Following Russia's illegal annexation of Crimea in 2014, some Eastern European NATO members called for the Founding Act to be dissolved. Russia's war in Ukraine has now removed any basis for the agreement. Even if the agreement still formally exists, most NATO members no longer feel bound by it. This would, in principle, allow the deployment of nuclear weapons in Eastern Europe.

Poland was the first NATO member to speak out in favour of such an option. As early as 2014, voices in the Polish Ministry of Defence declared Poland's willingness to host American nuclear weapons on its own soil. This discussion also gained momentum at the same time as the debate in Germany over the withdrawal of American nuclear bombs continued to smoulder. In June 2023, Polish Prime Minister Mateusz Morawiecki officially declared his country's interest in participating in the nuclear sharing process with nuclear weapons on Polish soil.²⁰ Such a deployment of B61 bombs would not only meet the new threat from Russia, but would also be in line with NATO's declared intention to put nuclear sharing on as broad a basis as possible.²¹ Another military advantage would be that Polish warplanes would not need aerial refuelling in order to reach Russia.

The U.S. reaction was more reserved, apparently because of the costs of such a deployment. Germany rejected this outright because the German government had recognized that as a nuclear stationing country, it carried special

¹⁸ Nuclear cruise missiles currently only exist for the B52 Stratofortress strategic bomber.

¹⁹ The so-called "Three No's" state that "The member states of NATO reiterate that they have no intention, no plan and no reason to deploy nuclear weapons on the territory of new members, nor any need to change any aspect of NATO's nuclear posture or nuclear policy - and do not foresee any future need to do so." See NATO-Russia Founding Act, 27 May 1997, Chapter IV, https://www.nato.int/cps/en/natolive/official_texts_25468.htm

²⁰ See: "Poland's bid to participate in NATO nuclear sharing," *Strategic Comments* Vol.29, Comment 26, International Institute for Strategic Studies (IISS), September 2023, <https://www.iiss.org/publications/strategic-comments/2023/polands-bid-to-participate-in-nato-nuclear-sharing/>

²¹ To "...ensure the broadest possible participation by Allies concerned in NATO's nuclear burden-sharing arrangements...." See NATO Vilnius Summit Communiqué, para. 45, 11 July 2023, https://www.nato.int/cps/en/natohq/official_texts_217320.htm

weight in NATO. As a result, the realisation of this option is currently unlikely.

A much more realistic option would be to certify the F-35 fighter jets that Poland will receive from 2025 as nuclear-capable, enabling them to transport American nuclear bombs. Polish pilots would have to be trained accordingly. This would allow American nuclear weapons to be relocated to and from Polish airports in the event of a crisis or conflict. Conversely, Polish F-35 aircraft could be transferred to existing NATO nuclear depots as a back-up in a crisis to increase the number of carrier aircraft there.²²

The advantages of extending nuclear sharing geographically to Eastern Europe would be that it would be a visible NATO response to the new threat posed by Russia. It would also be consistent with the Alliance's own efforts to place the nuclear deterrent in Europe on as broad a basis as possible – which could include stationing in other member states. A larger number of nuclear weapons stockpiles – whether permanent or temporary – would also complicate Russia's attack planning, as it would be more difficult to disable all these targets at an early stage.

The main drawback would be the high cost of building new nuclear weapons storage facilities in Poland or another Eastern European NATO member. NATO consensus and U.S. acceptance for such a step is also uncertain at present. If Ukraine were to join NATO after the war, the question would also arise as to whether nuclear weapons would have to be stationed on Ukrainian territory. However, preparing Polish F-35 planes and pilots for nuclear missions would not have major disadvantages.

Conclusions

Since the tidal change in security policy in 2022, the importance of nuclear deterrence has increased considerably. To make NATO's nuclear deterrent credible and efficient, the Alliance must initiate a systematic nuclear strategy discussion process that goes beyond the cursory nuclear conversations currently held among NATO Allies, and that leads to a new nuclear review.

Furthermore, NATO's nuclear posture needs to be adapted in line with the results of the review. This could be done by increasing the number of American B61 bombs currently stored in Europe. A second option would be broadening the weapons spectrum to obtain more flexible nuclear response options, for example, by deploying nuclear Tomahawk cruise missiles in Europe. Thirdly, NATO could station nuclear weapons – either the existing B61 bombs or new nuclear systems – in Poland and other Eastern European NATO Allies.

Each of these options comes with specific advantages and disadvantages, which might lead to painful debates among NATO members. But leaving NATO's deterrent as it is in order to avoid tough choices may no longer be an option.²³

²² Artur Kacprzyk, "NATO Nuclear Adaptation," *PISM Report*, Warsaw, November 2023, pp 18.

²³ Michael Cohen, "The U.S. and NATO at a Nuclear Crossroads," *NDC Policy Brief 02*, NATO Defense College, January 2023.

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