REPORT

International nuclear disarmament and policy options for Belgium and Flanders.

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Colophon

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List of Abbreviations

CANPAN	Commission d'Avis pour la Non-Prolifération des Armes Nucléaires
COCOM	Coordinating Committee for Multilateral Export Controls
CSP	Conference of State Parties
CTBT	Comprehensive Test Ban Treaty
CTBTO	Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization
DCA	Dual-capable aircraft
DPRK	Democratic People's Republic of Korea
Euratom	European Atomic Energy Community
HCoC	The Hague Code of Conduct against Ballistic Missile Proliferation
HLG	High Level Group
IAEA	International Atomic Energy Agency
ICAN	International Campaign to Abolish Nuclear Weapons
MECR	Multilateral export control regime
MTCR	Missile Technology Control Regime
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organization
NPG	Nuclear Planning Group
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NNWSs	Non-nuclear-weapon states
NWSs	Nuclear-weapon states
PSI	Proliferation Security Initiative
PTBT	Partial Nuclear Test Ban Treaty
TPNW	Treaty on the Prohibition of Nuclear Weapons
WA	Wassenaar Arrangement
WMDs	Weapons of mass destruction

Introduction

The proliferation of nuclear weapons can nowadays be perceived as a "classic" threat to international security from different perspectives. It is an "old" threat, inherited from the beginning of the Cold War. Its actors have, so far, remained states, *i.e.* the most classical and identifiable players in international relations. No nuclear weapon has been used as a conflict weapon since the Second World War. However, as "classic" the threat may be for the states, the societies, and the expert communities, it has always been considered as one of the most important ones in consideration of the potential direct – *e.g.* humanitarian and environmental – or indirect – *e.g.* geopolitical – consequences of a nuclear explosion.

The "classic" responses to this threat, notably consisting in combining non-proliferation efforts and mutual deterrence, can still be perceived as efficient in the sense that the world has, so far, avoided an open nuclear conflict. Notwithstanding, the acceptability of these responses is now challenged. By states themselves, first, as many of them engage for universal disarmament and confront nuclear-weapons-possessing states, at the risk of "polarising" the international community between "haves" and "haves-not". The acceptability of classic responses to the nuclear threat is challenged also by civil societies as populations upraise their voices and managed to give concrete impetus to international actions against the proliferation and the use – at war or in deterrence – of nuclear weapons and in favour of effective disarmament. The risk is that the governments and their populations pursue diverging objectives.

As "classic" as it may be, besides, it is undoubtedly a contemporary threat. Within just one year of time, between September 2020 and October 2021, the developments in the area have been important, even if looking only at the implications for a country like Belgium. In September 2020, the Government Agreement, which presents the general policy the federal government intends to pursue during the mandate, not only provided that the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), remains the "cornerstone"" of the international efforts of non-proliferation of nuclear weapons but also that "(Belgium) will investigate how to reinforce the multilateral non-proliferation framework and how the Treaty on the Prohibition of Nuclear Weapons (TPNW) can give a new impetus to multilateral nuclear disarmament"[1]. In January 2021 as well, the International

Campaign to Abolish Nuclear Weapons (ICAN), published a survey that concluded that, despite the fact that the national strategic policies are strongly relying on a deterrence provided by a "nuclear alliance", the Belgian population in its majority seems to aspire to disarmament[2]. In January 2021, the TPNW entered into force, consequently to deposit of its ratification instrument by the 50th state party. In the same year, the international context experienced multiple signs of confidence in the nuclear weapons for ensuring one's own security. The Democratic People's Republic of Korea (DPRK) has regularly tested – or pretended it tested – new means of delivery – e.g. hypersonic missiles[3] or submarine-launched missiles[4] – for deploying its nuclear arsenal. China is believed to have notably tested hypersonic missiles capable of carrying nuclear warheads, too[5]. Since the election of President Biden, the US administration has initiated a Nuclear Posture Review[6], which is expected to reduce the importance of the role of the nuclear weapons in the US strategic policies. It has also shown repeatedly signs that it will pursue the progressive disengagement of its forces from Europe in a switch of its attention to the security the Pacific region, be it at the detriment of the strategic interests of its European allies. The strategic dialogue with Russia, at the same time, has worsened and recently ended in Russia stopping its formal relationship with the North Atlantic Treaty Organisation[7].

This international context, where positive and negative trends of non-proliferation and disarmament of nuclear weapons grow in parallel, feeds a sense of urgency for defining strategic reactions and orientations by each of the actors of the international security scene. It is with this sense of urgency and the objective of identifying options for the Flemish Region to impulse and take actions towards nuclear disarmament at its level that the Flemish Peace Institute initiated the present study, titled "Analysis of the international context regarding nuclear disarmament and the different options for Belgium (and Flanders) in this context".

Specifically, the study is expected to answer the following questions and sub-questions:

1) What is the current context with regard to the number of nuclear weapons and nuclear-weapons-possessing states in the world? What evolutions have taken place in this area in recent years?

2) What are the relevant international regimes regarding the development, production, testing, trade, possession – storage -, use, and disarmament of nuclear weapons?

- What evolutions have taken place in recent years in the international regulatory framework for nuclear weapons?
- How do these international regimes relate to each other?

3) What are the legal, geopolitical, security-related, and humanitarian implications of the changed international context in the field of nuclear weapons (armament/disarmament) for the Belgian government?

- What would be the impact of Belgium's accession to the Nuclear Prohibition Treaty on Belgium's international commitments and obligations in this area and on the global nuclear disarmament regime?

- How would this accession affect Belgium's existing international commitments in the context of NATO commitments and practices?
- What impact would this entry have on Belgian companies and financial institutions?
- What policy options does the Belgian government have regarding nuclear disarmament?
- What are the advantages and disadvantages of each of these options?

4) What can Flanders do in the context of nuclear disarmament?

- What impact would accession to the Nuclear Prohibition Treaty have on the nuclear industry and nuclear research in Flanders and on the Flemish dual-use export control system?
- What options does the Flemish government have to contribute to nuclear disarmament?

The research team conducted this study along three methodological axes.

First it performed an in-depth legal and policy analysis in the form of a desk review of the management of the nuclear weapons. The norms and the political actions work in symbiosis as_the legal norms frame the political action which, in return, can consist in proposing and setting new norms. The goal of this specific analysis was, therefore, to identify the international and national contexts of non-proliferation and disarmament in which Belgium and Flanders evolve. It appeared necessary, to this end, to investigate the nuclear weapons-related policies in accounting for the history of the nuclear weapons, the evolution of their numbers and the choices operated by different sovereign actors vis-à-vis theirs and the international security. In parallel, an analysis of the relevant international sources of norms and regimes that formally frame the management of the nuclear weapons was performed. While dividing the "management" into pillars – from the development to the disarmament of nuclear weapons -, it allowed for taking stock and comparing the relevance of 19 international, including European, sources of rights and obligations for framing the choices offered to Belgium and Flanders for enhancing the management of nuclear weapons globally. Along the present study, three main legal provisions are referred to, as they crystallise the complexity of the choices on non-proliferation and/or disarmament that can be made by international actors in general: the Article VI of the NPT, the Article 1 of the TPNW and the Article 8 of the Washington Treaty, establishing the North Atlantic Treaty Organisation (NATO).

Treaty on the Non-Proliferation of Nuclear Weapons (NPT), Article VI:

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

Treaty on the Prohibition of Nuclear Weapons (TPNW), Article 1:

Each State Party undertakes never under any circumstances to:

(a) Develop, test, produce, manufacture, otherwise acquire, possess or stockpile nuclear weapons or other nuclear explosive devices;

(b) Transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly;

(c) Receive the transfer of or control over nuclear weapons or other nuclear explosive devices directly or indirectly;

(d) Use or threaten to use nuclear weapons or other nuclear explosive devices;

(e) Assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty;

(f) Seek or receive any assistance, in any way, from anyone to engage in any activity prohibited to a State Party under this Treaty;

(g) Allow any stationing, installation or deployment of any nuclear weapons or other nuclear explosive devices in its territory or at any place under its jurisdiction or control.

The North Atlantic Treaty, or Washington Treaty, Article 8:

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third State is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

The review of the existing was conducted along four key thematic areas that can be positively or negatively affected by nuclear weapons-related policies: the legal area – *i.e.* what is allowed or prohibited by the international, European and Belgian law –, the defence strategic area – *i.e.* what is possible or preferable for ensuring the security of Belgium –, the economic area, *i.e.* how can the economic interests of the national stakeholders be preserved while fighting the proliferation of nuclear weapons – and the societal area – *i.e.* how can the counter-proliferation and disarmament policies meet the demands of the Belgian and Flemish populations. For all these key areas, the respective competence of Belgium and Flanders were highlighted.

The second methodological axis consisted in a quantitative and qualitative interview-based research on the assessment of the existing instruments and policies of management of the nuclear weapons, in general and for Belgium and Flanders in particular. The research was also aimed at identifying prospective views on the possible enhancement of the existing instruments. 18 interviews were conducted with international and Belgian high-level thinkers and representatives of stakeholder institutions. Their views on the current situation and possible futures were then used for identifying "families" of scenarios of – positive or negative – evolutions in the non-proliferation and/or the disarmament of nuclear weapons.

The third methodological axis consisted in the prospective elaboration of options – six, eventually – for Belgium and Flanders to initiate actions for either mitigating or realising the scenarios deduced from both the analysis and the quantitative and qualitative research. All options, as prescribed by the terms of reference of the study, tend to strengthen the non-proliferation and/or disarmament policies and exploit the leeway offered by the symbiosis – *i.e.* causes and effects relationship – that exist between the policies and the legal instruments in the area. The details of these policy options were elaborated while paying explicit attention to degree of probability of the realisation of the scenario, the feasibility or the advantages and disadvantages of each option and the respective competences of the Belgian federal and Flemish regional governments for acting in this direction. The options, although completed with propositions of actions for concretely implementing them, were designed as a simple support for political decision-making but not as recommendations to the decision-makers. They provide for scientifically-based possible actions that the Belgian federal government and Flemish government can chose to take, within the scope of its competences, for supporting global efforts towards nuclear disarmament at its level.

The present Analyse reports on the findings of the analysis, the outputs of the interviews and the prospective elaboration of options performed by the research team.

The first chapter presents the outcomes of the in-depth policy analysis. It is a situational analysis of the nuclear weapons as instruments of international (in)security. In a first section, it provides for the current estimates of numbers of nuclear weapons in the world, including in Belgium. In a second section, the evolution of these numbers in time, since 1945 up to date, is presented. Then, the concrete impacts of the non-proliferation policies is commented on, while highlighting their limitations. Beyond the facts and figures, this chapter also presents the main doctrines that lead the nuclear-weapons-possessing states to make use or not of the nuclear weapons as instruments of international security. In this respect, it particularly highlights the concepts of the "no-first-use policy" and of the "negative security assurance" which states may voice as statements vis-à-vis the other international stakeholders. Finally, it identifies possible futures for the role of these weapons as they are suspected or hoped for by the experts. Indeed, in a context of international tensions between the so-called "great powers" – *i.e.* the United States, Russia and China, mainly –, of renewed reliance on nuclear weapons for ensuring one's own security and of insistingly growing claims from the populations for taking into account the possible humanitarian impacts of these weapons, deterrence and disarmament are – too – often opposed. This last section, therefore, will help decoding all these trends

that influence and will most likely continue influencing the course of the events in the near future.

The second chapter presents the outcomes of both the legal and policy analysis of the importance of the nuclear weapons and cross references them with the outputs of the interviews for the four – *i.e.* legal, strategic, economic and societal – key areas for Belgium and Flanders. The first section is dedicated to the analysis of the legal framework that provides for the rights and prohibitions related to the management – from development to disarmament – of nuclear weapons. It concentrates on the international, European and national conventions and other sources of norms that are already applicable in and by Belgium and Flanders. The second section presents the bearings of the nuclear weapons-related policies on the economic activity and the needs of the economic sector. The third section develops the potential of the nuclear weapons or their absence on the defence strategic policies of the country. The fourth section highlights the opinions and expectations of the Belgian population vis-à-vis the non-proliferation or disarmament of nuclear weapons. The fifth section is an important one in the sense that it deduces from the analysis and interviews some prospective views on the role and place of the nuclear weapons in the policies of a country like Belgium. In this section, several subsections comment on the interactions and interconnections of the different arguments developed in consideration of the four thematic areas covered, on the potential of the TPNW – which is not a part of the applicable framework of norms to Belgium yet -, on the views expressed by other countries on actions to be taken for enhancing non-proliferation and disarmament policies, on the leeway Flanders can use for leveraging these policies at its level and, finally, on the "possible futures" on which options for actions can prospectively be constructed.

The final chapter identifies, on the basis of the situational analysis, the policies' analysis and the six – alternative "possible futures" – scenarios defined in the second chapter, options for policies and actions by Belgium and Flanders for enhancing the non-proliferation and/or disarmament of the nuclear weapons at national, regional or international scales. For each of the six options defined, one per scenario, its rationale vis-à-vis the scenario, its objectives, the set of concrete actions that could be engaged at the federal and regional levels for realising the option, the assets and drawbacks of selecting the option and its acceptability and feasibility are thoroughly described.

1 Situational analysis of nuclear weapons worldwide

While the number of nuclear weapons worldwide is at a historical low, the pace of the decline is slowing[8]. Indeed, the observable decrease in the world's nuclear arsenal has mostly been due to the dismantling of retired warheads. Some of the nuclear-weapons-possessing states are currently modernising[9] and even increasing their nuclear stockpiles, or have plans to do so[10]. Estimating the number of nuclear weapons worldwide is in itself a challenge, due to the lack of transparency of nuclear-weapons-possessing states.

This chapter presents the outcomes of a desk review of the existing sources of information on nuclear weapons themselves, and also of the management policies relating to these weapons. It provides answers to the following research questions:

- What is the current context with regard to the number of nuclear weapons and nuclear-weapons-possessing states in the world?
- What evolutions have taken place in this area in recent years?

1.1 Nuclear weapons arsenals and nuclear weapons-possessing states

This section presents the results of a desk review of the literature – including political statements and experts' views – on the numbers of nuclear weapons and their evolution to date. It considers the importance given or to be given to nuclear weapons as instruments of international security and, relatedly, examines the challenge of fostering non-proliferation and disarmament policies in this environment.

1.1.1 Estimates of the numbers of nuclear weapons in the world, in Belgium and in Flanders today

When the first atomic bombs were dropped on Hiroshima and Nagasaki in August 1945, the United States hoped to remain the only state to possess this new weapon. However, technology and knowledge about how to build these bombs soon spread, and countries fought to acquire them.

The United States was quickly joined by Russia (1949), the United Kingdom (1952), France (1960) and China (1964). These five states are recognised by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as the nuclear-weapon states (NWSs). With the objective of limiting further expansion of nuclear weapons, the Partial Nuclear Test Ban Treaty (PTBT, 1963) and the NPT (1968) were negotiated. A more detailed description of these treaties is provided in section 2.1. These multilateral treaties are complemented by several bilateral agreements between the United States and Russia that aim to limit their respective nuclear arsenals[I].

Additionally, several states (potentially) possess nuclear weapons but are not party to the NPT: the Democratic People's Republic of Korea (DPRK)[II], India, Pakistan and Israel. Based on information available to the international community, possession has been confirmed for the first three. Israel has never confirmed or denied possession. Other states have, at some point in their history, initiated or engaged in preparatory actions towards a nuclear weapons programme but subsequently dismantled or stopped it. Most of these countries have joined the NPT[III].

The exact numbers of nuclear weapons in the world and in each possessing country are difficult to estimate due to the secrecy each country maintains around its arsenal. Hence, the figures presented in this report are estimates and may differ from other sources. The estimates are based on publicly available information, analysis of historical records and the occasional leaks that have taken place.

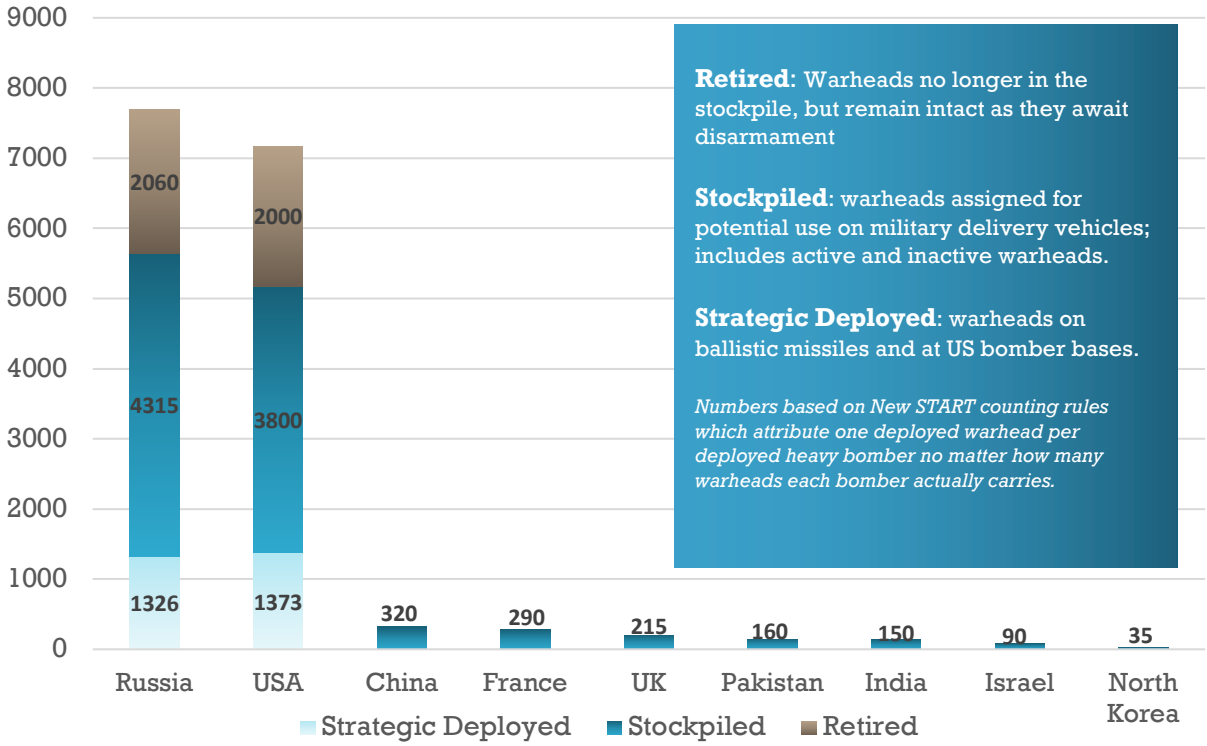
In 2020, the global nuclear arsenal was estimated at approximatively 13,100 warheads. Of these, nearly 9,600 were in military stockpiles. More specifically, 3,800 were deployed with operational forces, and there were up to 2,000 US, Russian, British and French warheads on high alert, ready for use on short notice[11]. Figure 1 gives a picture of the estimated global nuclear warheads inventories in 2020, including the numbers of retired, stockpiled and strategically deployed warheads.

I These include the Partial Test Ban Treaty (PTBT, 1963), the Anti-Ballistic Missile Treaty (ABM Treaty, 1972), the Strategic Arms Limitation Talks I (SALT I, 1972), the Intermediate-Range Nuclear Forces Treaty (INF Treaty, 1987), the Strategic Arms Reduction Treaty I (START I, 1991), the Strategic Arms Reduction Treaty II (START II, 1993) and the New Strategic Arms Reduction Treaty (New START, 2010).

II The DPRK withdrew from the NPT in 2003.

III See section 1.1.2.

Figure 1: Estimated global nuclear warheads inventories, 2020[12]



Some of the stockpiled warheads are tactical nuclear weapons. In 2019, their number was estimated to be approximately 2,500[13]. The United States, Russia and Pakistan have nuclear weapons that they classify as "tactical". However, there is no universally accepted definition of "tactical" – also referred to as "nonstrategic" or "theatre" – nuclear weapons[I].

A further 150 US tactical nuclear warheads are deployed in Europe for delivery by US and other NATO countries' aircraft. These tactical warheads are thought to be deployed in Belgium, Germany, Italy, the Netherlands and Turkey[II].

Although the Belgian federal government has never either confirmed or denied the presence of US tactical weapons within its territory, it is assumed that 20 of them (of type B61) are deployed at Kleine Brogel Air Base[14]. The Belgian air force's F-16A aircraft – and future F-35A aircraft – are dual-capable fighters, meaning that they are able to carry out nuclear missions. NATO is working on an update to its nuclear position in Europe, including modernisation of the current B61 nuclear weapon. The modernised version (B61-12) will have the same nuclear charge as the current version (B61-4) but with higher accuracy, allowing a lower yield for the same effect on the target[15]. Additionally, the

I Tactical (nonstrategic) nuclear weapons (TNWs) are typically deemed to be short-range weapons, including land-based missiles with a range of less than 500 km (about 300 miles) and air- and sea-launched weapons with a range of less than 600 km (about 400 miles). See Nuclear Threat Initiative, Tactical nuclear weapons (TNW) (30 April 2002), https://www.nti.org/analysis/articles/tactical-nuclear-weapons.

II The estimated 50 tactical nuclear warheads deployed at Incirlik Air Base in Turkey have supposedly been withdrawn. See Nuclear Threat Initiative, Turkey (s.d.), https://www.nti.org/learn/countries/turkey.

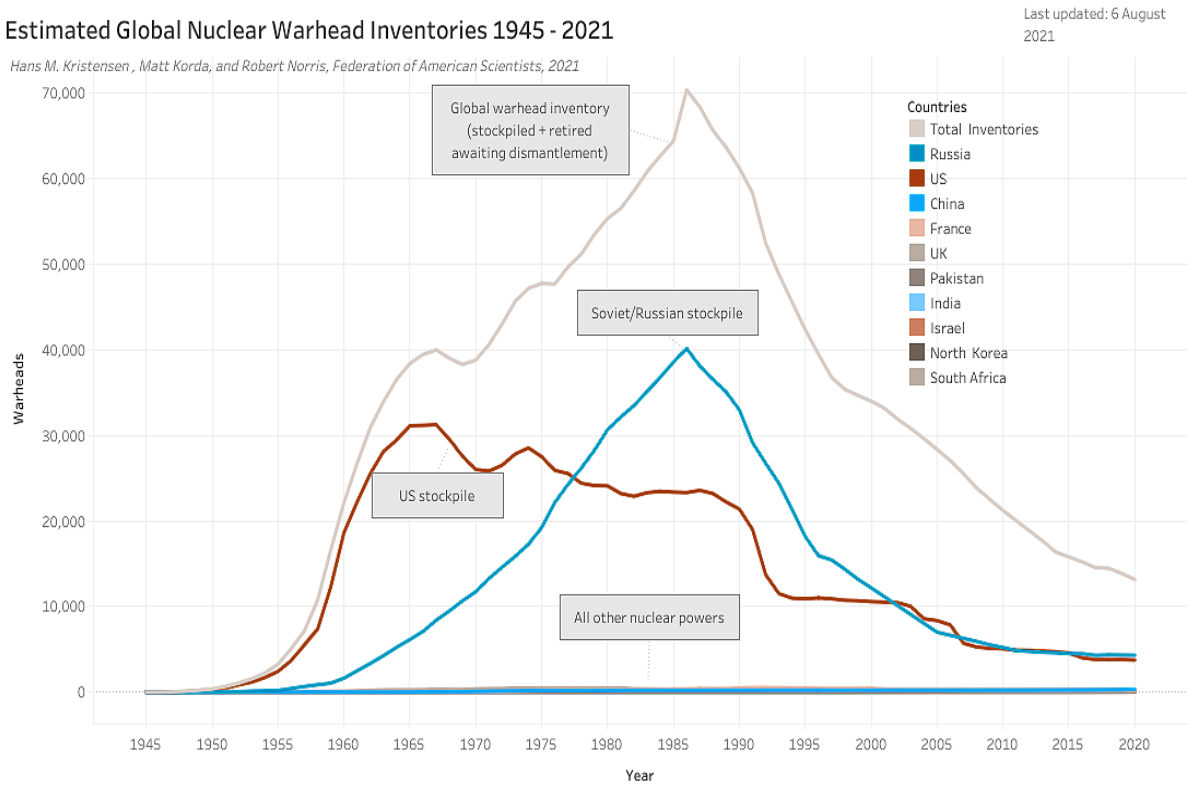
weapons storage security system will receive a life extension in the coming years. This will include a modernisation of the command, control and security capabilities at Kleine Brogel Air Base.

1.1.2 Evolution over time

It is clear that nuclear arsenals worldwide have been dominated by those of the United States and Russia. It is estimated that those countries currently own 91% of all nuclear warheads[16]. Other nuclear-weapons-possessing states – whether in compliance with the NPT or not – account for only a minor portion compared to those two states.

After a period of stagnation in the 1960s, the estimated number of nuclear warheads worldwide reached a peak of about 70,000 in the 1980s. Following the end of the Cold War, the number was significantly reduced, reaching around 13,000 in 2021. Despite an overall decrease in the estimated number of nuclear warheads, mainly due to the dismantling of retired weapons, military stockpiles (i.e. operational nuclear weapons) are tending to increase today[17]. This can be observed in Figure 2, which shows the difference between the estimated number of stockpiled nuclear warheads and the total estimated number of warheads, including those waiting to be dismantled.

Figure 2: Estimated global nuclear warhead inventories, 1945–2021[18]



In Figure 2, the estimated numbers of nuclear warheads of countries other than the United States and Russia are barely visible. These numbers have remained relatively stable over time. The current estimates are 350 warheads for China, 290 for France, 225 for the United Kingdom, 165 for India, 165 for Pakistan, 90 for Israel and 45 for the DPRK[19]. Finally, it is important to note that these estimates deal with the numbers of warheads but not their respective destructive powers, which may vary considerably from one type to another.

As indicated above, while the NPT legally acknowledged the right of possession of the five NWSs, it proved unable to limit the possession of nuclear weapons to those five states. Indeed, four other states allegedly set up nuclear weapons arsenals outside the treaty and one, the DPRK, simply withdrew from the NPT evading its obligations.

However, stating that the NPT globally failed in pursuing its non-proliferation objectives would be a bridge too far. Belarus, Kazakhstan and Ukraine had Soviet Union nuclear warheads on their territories, but they decided as sovereign state to return them to Russia after the Soviet Union collapsed in 1991, and they joined the NPT as non-nuclear-weapon states (NNWSs). South Africa also joined the NPT after developing and subsequently dismantling a small number of warheads. Both Iraq and Libya were, as states parties, in breach of their NPT obligations. However, Iraq stopped its nuclear weapons programme under international pressure after its defeat in Operation Desert Storm in 1991, and Libya renounced its secret nuclear weapons programme in 2003[20]. Argentina, Brazil, South Korea and Taiwan have reached the technological threshold that could allow them to initiate domestic nuclear weapons programmes but decided to join and abide by the NPT[21].

Iran and Syria remain of concern regarding potential proliferation. Prior to the Joint Comprehensive Plan of Action of July 2015, the former pursued a uranium-enrichment programme and other projects that provided it with the ability to develop nuclear weapons in the medium term. The JCPOA is an agreement established between Iran and the P5+1 countries (China, France, Germany, Russia, the United Kingdom and the United States) whereby significant restrictions are placed on Iran's nuclear programme and verification is provided by the International Atomic Energy Agency (IAEA).[22] In exchange, Iran receives international sanctions relief. While it took steps to breach the limits of the JCPOA after the United States' withdrawal in May 2018, Iran maintained that it did not intend to create a nuclear weapons arsenal[23]. As for Syria, in 2007 Israel bombed a site that was suspected to be a nuclear reactor constructed with assistance from the DPRK. Syria has not cooperated with the IAEA to clarify the nature of the destroyed facility[24].

At various points, several terrorist groups have declared a desire to acquire nuclear material in order to build a nuclear bomb. This led US President Barack Obama to state in 2016 that the risk of the Islamic State of Iraq and Syria (ISIS) or other extremist groups acquiring nuclear weapons remained "one of the greatest threats to global security"[25]. However, there is currently no evidence that terrorist groups have acquired the capacity to build or have successfully built a nuclear weapon[26]. To prevent non-state actors from acquiring weapons of mass destruction (WMDs), their means of delivery or related materials, the UN Security Council adopted Resolution 1540 in 2004[27]. This resolution requires all countries to adopt national counterterrorism laws and imposes legally binding obligations on all states to adopt measures to prevent the proliferation of WMDs to non-

state actors. The resolution fills a gap in international law by addressing the risk that terrorists might obtain or use WMDs[28].

1.1.3 Effects of counter-proliferation efforts

Since the adoption of the NPT, several other disarmament and non-proliferation initiatives have come into existence. Most of these initiatives were bilateral agreements between the United States and Russia, which (as mentioned) own more than 90% of the world's nuclear arsenal. A summary of the most important bilateral agreements is shown in Figure 3.

Figure 3: Strategic nuclear arms control agreements[29]

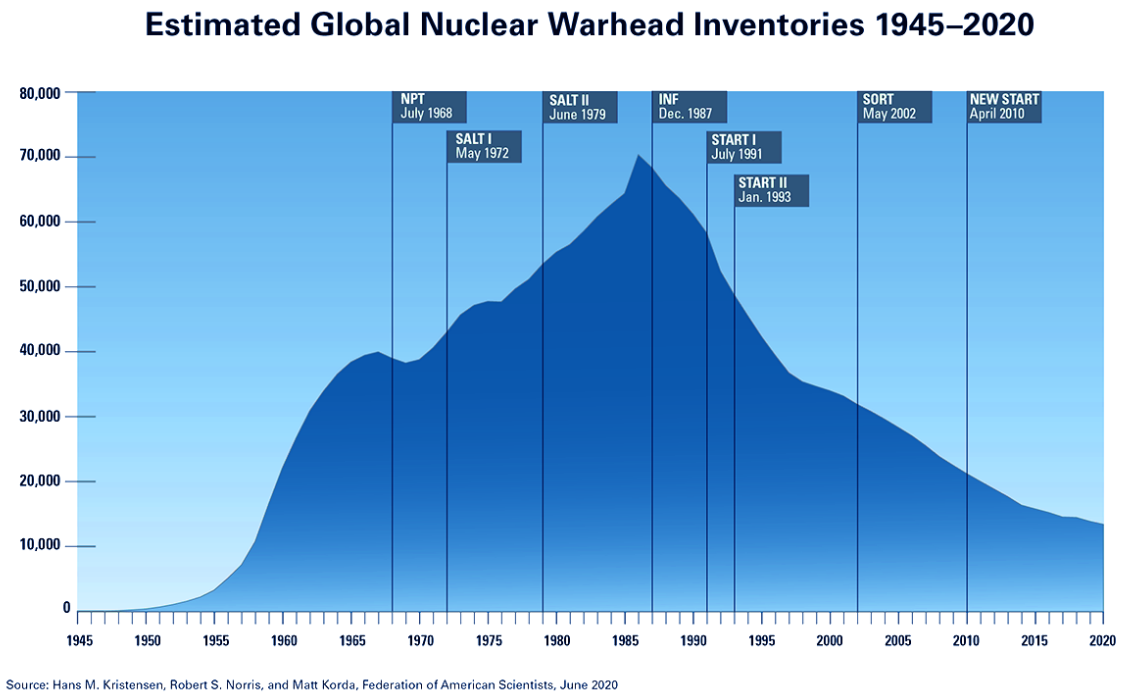
Strategic Nuclear Arms Control Agreements

	SALT I	SALT II	INF Treaty	START I	START II	START III	SORT	New START
Status	Expired	Never entered into force	Terminated	Expired	Never entered into force	Never negotiated	Replaced by New START	In force
Deployed Warhead Limit	N/A	N/A	N/A	6,000	3,000-3,500	2,00-2,500	1,700-2,200	1,550
Deployed Delivery Vehicle Limit	US: 1,710 ICBMs & SLBMs USSR: 2,347	2,250	Prohibits ground-based missiles of 500-5,500km range	1,600	N/A	N/A	N/A	700
Date Signed	May 26, 1972	June 18, 1979	Dec. 8, 1987	July 31, 1991	Jan. 3, 1993	N/A	May 24, 2002	April 8, 2010
Date Ratified, U.S.	Aug. 3, 1972	N/A	May 28, 1988	Oct. 1, 1992	Jan. 26, 1996	N/A	March 6, 2003	Dec. 22, 2010
Ratification Vote, U.S.	88-2	N/A	93-6	93-6	87-4	N/A	95-0	71-26
Date Entered into Force	Oct. 3, 1972	N/A	June 1, 1988	Dec. 5, 1994	N/A	N/A	June 1, 2003	Feb. 5, 2011
Implementation Deadline	N/A	N/A	June 1, 1991	Dec. 5, 2001	N/A	N/A	N/A	Feb. 5, 2018
Expiration Date	Oct. 3, 1977	N/A	Aug. 2, 2019	Dec. 5, 2009	N/A	N/A	Feb. 5, 2011	Feb. 5, 2026

It might be assumed that these initiatives would have had a significant impact on the number of nuclear warheads in the world. However, Figure 4 shows a more nuanced picture. Within the two decades after the NPT came into force, the number of nuclear warheads almost doubled, despite the Strategic Arms Limitation Talks (SALT I and SALT II) agreements between the United States and Russia, which aimed to limit both states' arsenals.

The real decline in the world nuclear arsenal occurred after the end of the Cold War, in 1991. This movement was reinforced by presidential nuclear initiatives[I] and the various START (Strategic Arms Reduction Treaty) agreements, which aimed to reduce the US and Russian arsenals. The world nuclear arsenal declined from just over 70,000 warheads in 1986 to around 13,000 in 2020.

Figure 4: Impact of strategic nuclear arms control agreements on the evolution of nuclear warhead inventories, 1945–2020[30]



Source: Hans M. Kristensen, Robert S. Norris, and Matt Korda, Federation of American Scientists, June 2020

I At the end of the Cold War, the presidents of the United States and the Soviet Union made reciprocal unilateral pledges to substantially limit and reduce their nuclear weaponry, most notably their tactical or "battlefield" nuclear weapons, such as nuclear artillery shells.

1.2 Doctrinal interpretations and prospective views on the importance of nuclear weapons

This section presents the outcomes of a desk review of the literature on the doctrines that have guided or are still guiding the recourse to nuclear weapons as instruments of international security. It also outlines the perceptions of experts on the possible futures and factors in the role and importance of nuclear weapons as such instruments in the international community.

These perceptions will subsequently be used in the context of this study to form scenarios for the evolution of the proliferation or non-proliferation of these weapons. These scenarios will include the several related options and actions that Belgium and Flanders could undertake in this regard.

1.2.1 Interpretations of the role of the nuclear weapons

The following subsections present an overview and commentary on the nuclear doctrines of nuclear-weapons-possessing states, with particular attention given to "(no-)first-use" policies and "negative security" assurances. The NWSs have each, with varying degrees of specificity, declared when and under which circumstances they reserve for themselves the right to use their nuclear weapons and whether they maintain the option to use them first in a conflict: "first-use" versus "no-first-use" policies. They have also declared whether or not they exclude the right to use them against NNWSs under certain circumstances: "negative" versus "positive" security assurances.

Nuclear doctrines

Several definitions of the term "nuclear doctrine" can be found, but it is generally accepted that it "*encompasses the goals and missions that guide the deployment and use of nuclear weapons, that determine each [NWS's] force structure, declaratory policy and diplomacy*"[31].

Deterrence is at the heart of the nuclear doctrines of all NWSs, although to different degrees. During the Cold War, nuclear weapons were deployed for deterrence purposes and it was generally believed that fighting to win a nuclear war was unthinkable and could lead only to mutual destruction. However, the strategic relationships between the NWSs have since deteriorated and there seems to be a greater willingness to actively threaten to use nuclear weapons. The result has been an observable modernisation of nuclear arsenals, the development and deployment of tactical nuclear weapons by additional NWSs (see section 1.1.1), and the reference in nuclear doctrines to the use of nuclear force in reaction to conventional attacks. Although arsenals are quantitatively or qualitatively stagnating or even increasing, calls for nuclear disarmament are being voiced louder than ever, and the humanitarian impact of the use of nuclear weapons – driven by civil society – is taking a more and more prominent place in forums related to nuclear disarmament.

With regard to the *United States*, "for more than six decades, [it] has emphasized the need for a nuclear force that credibly deters adversaries, assures allies and partners, achieves U.S. objectives should deterrence fail, and hedges against uncertain threats. Since the 1960s, these objectives have been met by the U.S. nuclear Triad through forces operating at sea, on land, and in the air"[32]. This country's nuclear doctrine has shifted from "simple deterrence" (i.e. a limited number of nuclear weapons able to destroy a certain number of enemy cities) towards a "complex nuclear" approach (i.e. nuclear deterrence with various possible scenarios). The United States pays close attention to nuclear balance and to ensuring the survivability of nuclear forces that can threaten the enemy[33]. It also aims for its nuclear forces to assure its allies and partners. This is reflected in the security guarantee the United States provides to its allies and partners under its "nuclear umbrella", according to which it would respond with force if the state in question were attacked[34]. This nuclear umbrella is part of NATO's collective nuclear security strategy.

In June 2020, President Putin approved an update of the "Basic Principles of State Policy of the *Russian Federation* on Nuclear Deterrence", which mentions that "the Russian Federation considers nuclear weapons exclusively as a means of deterrence"[35]. However, the Russian military doctrine, most recently updated in 2014, states that Russia "reserves the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and (or) its allies, as well as in response to aggression against the Russian Federation that utilizes conventional weapons that threatens [*sic*] the very existence of the state"[36] . In recent years, Western analysts have discussed whether Russia is adhering to a sort of "escalate to de-escalate" approach in its nuclear posture. "Escalate to de-escalate" describes a supposedly new Russian plan to use limited nuclear strikes in a local or regional conflict, the rationale being that such an escalation from conventional to nuclear conflict would shock an adversary into suing for peace[37]. Although it has been mentioned by Russian officials on several occasions, this has never been formally confirmed by Russian nuclear strategic documents or statements.

Since its first nuclear test in 1964, *China* has always maintained a doctrine of minimum deterrence. It considers that a credible second-strike capability is sufficient to deter an attack against China (i.e. a no-first-use policy). Therefore, the People's Liberation Army has maintained a "low alert level" for its nuclear forces, having its warheads stored at a central facility separate from its launchers and missiles[38].

The *United Kingdom* and *France* adhere to doctrines of minimum nuclear deterrence. The United Kingdom is the only NWS that has a posture characterised by a single deterrence system with one nuclear platform: Vanguard-class nuclear-powered ballistic missile submarines, with submarine-launched ballistic missiles operating in a continuous at-sea deterrent posture. France's deterrence strategy is strictly defensive; "the use of nuclear weapons would only be conceivable in extreme circumstances of legitimate self-defence" and nuclear deterrence "protects France from any State-led aggression against its vital interests, of whatever origin and in whatever form"[39].

India and *Pakistan* have regional deterrence policies that are primarily targeted at each other. However, the modernisation of India's arsenal indicates that it is progressively putting more emphasis on its strategic relationship with China. Additionally, the question remains whether Pakistan will consider its strategic deterrence against India sufficient or

whether it will go for "full spectrum" deterrence against targets both near and far. In order to avoid a mutually destructive nuclear conflict with Pakistan, India has developed the Cold Start doctrine. This doctrine is "intended to allow it to mobilise quickly and undertake limited retaliatory attacks on its neighbour, without crossing Pakistan's nuclear threshold"[40]. However, in 2018, Pakistan responded to this doctrine by threatening to use short-range nuclear weapons[41]. Hence, it remains unclear whether this doctrine could have a preventative effect on a potential nuclear confrontation between India and Pakistan.

Israel has never confirmed or denied its possession of nuclear weapons. Hence, there exists no statement about the country's willingness to use or threaten to use nuclear weapons. In the case of the *DPRK*, it is unknown whether it has managed to develop fully functional warheads that can be delivered with a ballistic missile. It has stated that it will act as a "responsible nuclear weapons state" and "will [not] be the first to use nuclear weapons … as long as the hostile forces for aggression do not encroach upon its sovereignty"[42].

Although *NATO* is not a NWS, its nuclear policy is of relevance in the debate about nuclear disarmament. Nuclear deterrence has been at the core of NATO's mutual security guarantee and collective defence approach since its creation in 1949[43]. The first NATO Strategic Concept (1949) does not mention nuclear deterrence specifically; it only mentions the requirement to "ensure the ability to deliver the atomic bomb promptly"[44]. At that time, before the Soviet Union conducted its first nuclear test, this concept was considered a nuclear guarantee for the Alliance[I]. In the 1950s, facing political pressure to reduce its defence budget, the United States reinforced its policy of threatening to use nuclear weapons on a large scale and early in the event of a conflict in Europe. This "New Look" policy offered greater military effectiveness without the need to spend more on defence[45]. In 1954 NATO agreed to integrate tactical weapons into its defence strategy, and by the end of 1960 there were 2,500 US tactical weapons deployed in Western Europe.

At that time, NATO adopted the concept of "massive retaliation"[II]. Following criticism, in the 1960s it shifted to a nuclear strategy known as "flexible response". It "committed the alliance to respond to any aggression, short of general nuclear attack, at the level of force – conventional or nuclear – at which it was initiated. The alliance retained the option, however, to use nuclear weapons first if its initial response to a conventional attack did not prove adequate to containing the aggressor, and to deliberately escalate to general nuclear war, if necessary"[46]. This concept did not prevent NATO from heavily relying on the first use of nuclear weapons to deter a major conventional assault and, in the 1970s, around 7,400 nuclear weapons were deployed in Europe[47]. By the end of the Cold War, NATO had engaged to reduce its reliance on nuclear weapons, and US tactical nuclear weapons were withdrawn from Europe on a massive scale.

The events of 9/11 and the military build-up of Russia in the first decade of the 21st century required an update to NATO's Strategic Concept. The 2010 Strategic Concept[48] and the 2012 Deterrence and Posture Review[49] confirmed the reduction of the numbers of nuclear

I Article 5 of the North Atlantic Treaty commits the Allies to come to the defence of all members in the event of an attack.

II "Massive retaliation", also known as "massive response" or "massive deterrence", is a military doctrine and nuclear strategy in which a state commits itself to retaliate with much greater force than the aggressor in the event of an attack.

weapons stationed in Europe. However, they also served as a reminder of the Alliance's reliance on nuclear weapons and formally recognised NATO as a "nuclear alliance".

No-first-use policy

China is the only NWS that has declared a no-first-use policy, which it reiterated in February 2018. At the 2018 Munich Security Conference, the chair of the Foreign Affairs Committee of the National People's Congress said that "China is … committed to the principle of non-first-use of nuclear weapons"[50], thus confirming the country's 2015 military strategy[51].

While the other NWSs have defensive deterrence embedded in their nuclear doctrines, several statements and parts of their nuclear policies make their positions on no first use ambiguous. The *United States* does not maintain a no-first-use policy in order to guarantee flexibility in deterring nuclear and non-nuclear attacks. In 2018, its policy changed allowing consideration the use of nuclear weapons under "extreme circumstances" relating to non-nuclear attacks. This was a major change and means a potential first-use policy[52].

President Putin has stated that "[the *Russian*] nuclear weapons doctrine does not provide for a pre-emptive strike" and that "our concept is based on a reciprocal counter strike …. This means that we are prepared and will use nuclear weapons only when we know for certain that some potential aggressor is attacking Russia, our territory"[53]. However, this cannot be seen as a no-first-use policy as it would allow the use of nuclear weapons in response to a conventional attack if the existence of the state were under threat.

The *United Kingdom* has never excluded the first use of nuclear weapons but has stated that it would only employ such arms in self-defence and "even then only in extreme circumstances"[54]. The *French* nuclear policy is strictly defensive but is calculatedly ambiguous regarding the possible first use of nuclear weapons. The country keeps for itself the right to conduct a "final warning" limited nuclear strike "in an effort to signal to an adversary that they have crossed a line – or to signal the French resolve to conduct further nuclear strikes if necessary – in an attempt to restore deterrence"[55].

Although *India* stated in its 1999 Draft Nuclear Doctrine that it "will not be the first to initiate a nuclear strike but will respond with punitive retaliation should deterrence fail", it does not have a true no-first-use policy. Indeed, this position was challenged by India's 2003 declaration that it could use nuclear weapons in response to chemical or biological attacks, which is de facto a nuclear first use[56]. *Pakistan*'s no-first-use policy, particularly against India, is vague. Foreign Secretary Chaudry stated in 2015 that Pakistan's nuclear arsenal is "not for starting a war"[57]. The country has indicated that the circumstances surrounding its no-first-use policy must remain deliberately imprecise, as demarcating so-called red lines could allow provocations by the Indian military just below any threshold for use[58].

While "the circumstances in which *NATO* might contemplate the use of [nuclear weapons] are extremely remote"[59], the Alliance has never excluded the first use of nuclear weapons.

It remains ambiguous about the possibility in declaring that "if the fundamental security of any Ally were to be threatened, NATO has the capabilities and resolve to defend itself – including with nuclear weapons"[60]. This does not specify whether the threat would need to have come from nuclear or conventional weapons, however.

Negative security assurance

In 1995, all five NWSs recognised by the NPT pledged to provide "a set of negative security assurances" as recognised by UN Security Council Resolution 984[61]. The term "negative security assurances" refers to declarations as to the circumstances under which the NWSs rule out the use of nuclear weapons. They aim to assure NNWSs and allies that they will not be subject to a direct nuclear attack on their territory[62]. However, these pledges are non-binding, and some states reserve the right to use nuclear weapons against NNWSs under certain circumstances.

The *United States*' 2018 Nuclear Posture Review (NPR) contains some caveats that allow "the right to make any adjustment in the assurance that may be warranted by the evolution and proliferation of non-nuclear strategic attack technologies and U.S. capabilities to counter that threat"[63]. In the case of *Russia*, until 1995 the country issued unilateral security assurances not to attack NNWSs but stated then that those pledges would not apply "in the case of an invasion or any other attack on the Russian Federation, its territory, its armed forces or other troops, its allies or on a state toward which it has a security commitment, carried out or sustained by such a non-nuclear-weapon State in association or alliance with a nuclear-weapon state"[64].

In its 2015 military strategy, *China* stated that it "will unconditionally not use or threaten to use nuclear weapons and use or threat of use of nuclear weapons against non-nuclear-weapon states or in nuclear-weapon-free zones and will never enter into a nuclear arms race with any country."[65] Additionally, in a call at the 2010 NPT Review Conference, the country called for a legally binding instrument to prohibit the use or threat of use of nuclear weapons against NNWSs and nuclear-weapon-free zones[66].

The *United Kingdom* reserves the right to use nuclear weapons against non-nuclear-weapons States if a state party is in breach of its NPT obligations. It also reserves the right "to review this assurance if the future threat of WMDs, such as chemical and biological capabilities, or emerging technologies that could have a comparable impact, makes it necessary"[67]. In 2015, *France* reaffirmed its negative security assurance not to use nuclear weapons against NNWSs of the NPT "except in the case of invasion or any other attack on France, its territory, its armed forces or other troops, or against its allies or a State toward which it has a security commitment, carried out or sustained by such a State in alliance or association with a nuclear-weapon State"[68].

India remains ambiguous on the subject. In 2014, at the Second Conference on the Humanitarian Impact of Nuclear Weapons, it stated that "we have espoused the policy of no first use and no use against non-nuclear weapons states, and are prepared to convert these undertakings into multilateral legal arrangements"[69]. *Pakistan* has only issued

negative nuclear security guarantees to the states that are not armed with nuclear weapons[70].

1.2.2 Prospective views: non-proliferation and/or disarmament?

Drawing upon the previous sections' outline of the current status of nuclear weapons in the world and the nuclear policies of the NWSs, this section identifies possible evolutions and dynamics in the field of nuclear non-proliferation and disarmament, examining the factors that are currently influencing these evolutions and how they relate to each other. This section also aims to help decode the various trends that influence and will most likely continue to influence the course of events in the near future.

The prospective views in this section will form the basis for identifying possible scenarios and subsequent options in chapter 3 of this study. These views highlight the opposition between, on the one hand, a more complex geopolitical situation and a renewed focus on nuclear deterrence and weapons, and, on the other hand, an insistent call for global nuclear disarmament from both NNWSs and civil society.

Return of competition between the great power

In 2018, the World Economic Forum highlighted that the intensification of nationalistic politics had affected relations between the world's major power[71]. After the Cold War, the United States experienced a moment of unchallenged power in what could be considered a "unipolar" world. However, two decades later, the re-emergence of Russia and China, with their willingness and readiness to reshape geopolitical balances, has brought rivalries between the great powers back into the foreground.

The return of competition between the great powers was foreseen by the Obama administration's 2015 national military strategy[72]. The Trump administration's 2018 US NPR required the United States to recognise the reality of a return to competition between the great powers and position itself accordingly[73]. The Biden administration's 2021 *Interim National Security Strategy Guidance* states that "we face a world of rising nationalism, receding democracy, growing rivalry with China, Russia, and other authoritarian states, and a technological revolution that is reshaping every aspect of our lives"[74]. It is acknowledged that the renewal of competition between the great powers is contributing to a concomitant renewal of interest in nuclear weapons and nuclear deterrence in US defence discussions. This is one of the reasons why the United States withdrew from the Intermediate-Range Nuclear Forces Treaty (1987) in 2019[I]. Russian officials, for their part, currently refer to Russia's nuclear weapons capabilities to claim Russia's status as a major world power[75]. China's nuclear weapons arsenal, though it is far more modest than Russia's, is currently being modernised and increasing in size[76].

[I] For additional information, see Amy F. Woolf, U.S. withdrawal from the INF Treaty, CRS Insight IN10985 (1 February 2019), https://sgp.fas.org/crs/nuke/IN10985.pdf.

Renewed focus on nuclear weapons

Since their inception, nuclear weapons have always had a deterrent role in preventing armed conflicts. After the Cold War, the main nuclear threat was perceived as deriving from concerns that "loose nukes" would fall into the hands of non-state actors[77]. However, over the past couple of years, the nuclear-weapons-possessing states have begun to develop new weapons and modernise their delivery systems[I]. Additionally, the development of tactical nuclear weapons by some states has contributed to lowering the nuclear threshold.

The *United States*' 2018 NPR recommended increasing the types and roles of the country's nuclear weapons. This was a major shift to a confrontational tone and an assertive posture within the competition among the great powers. The United States plans to spend up to USD 1.5 trillion in the coming three decades to modernise its nuclear arsenal in each leg of its nuclear triad. These changes will include, but are not limited to, a new class of ballistic missile submarine, new nuclear cruise missiles and modified gravity bombs[78]. The Biden administration is currently reviewing the United States' nuclear weapons policy with the desire "to reduce the role of nuclear weapons in U.S. strategy and put the emphasis on a more holistic approach of deterrence"[79]. However, it remains to be seen whether President Biden will adjust the policies adopted by the previous administration[II]. Although the Biden administration faces budgetary constraints, it will have to respond to its allies' concerns about the country's commitment to collective security[80].

The modernisation of the *Russian* nuclear arsenal has been in progress for more than a decade. In December 2020, President Putin stated that modern weapons and equipment made up 86% of Russia's nuclear triad (compared to 82% in 2019). This is expected to increase to 88.3% in 2021.[81]

China continues to modernise its nuclear arsenal as part of a programme that started in the 1980s and was further developed in the 1990s and 2000s. It includes fielding more types and greater numbers of nuclear weapons than ever before. These modernisation efforts aim at maintaining assured retaliation in the shifting security environment. With the United States modernising the three legs of its nuclear triad and Russia in the process of replacing its ageing intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs), China fears that its deterrence strategy will be weakened as its ability to deliver a retaliatory nuclear attack will be diminished[82]. The modernisation programme comprises an increase in the number of weapons and enhancements to the sophistication of the country's delivery systems.

In 2010, the *UK* government stated "an intent to reduce [its] overall nuclear warhead stockpile ceiling from not more than 225 to not more than 180 by the mid-2020s".

I Modernisation of delivery systems can take the form, for instance, of research on hypersonic vehicles, as is currently being conducted by China, the DPRK and Russia.

II The first budget request from the Biden administration continued the policy of sustaining and modernising the United States' expensive nuclear weapons.

However, in 2021, "in recognition of … technological and doctrinal threats", the country amended this intention, saying that it would increase its stockpile to no more than 260 warheads[83]. This is a major shift in its policy and not in line with commitments made within the NPT on nuclear disarmament.

France, *India* and *Pakistan* also plan to modernise their existing arsenals. India is operationalising its nuclear triad and Pakistan is expanding its nuclear arsenal with more warheads, more delivery systems and growing production of fissile materials.

The total lack of transparency about *Israel*'s and the *DPRK*'s nuclear programmes makes it extremely challenging to estimate the evolutions of their respective nuclear arsenals.

Deterrence versus disarmament

While deterrence doctrines are being re-evaluated, there is strong support for the disarmament agenda. The NWSs lack of progress in implementing the commitments – as opposed to formal and enforceable obligations – contained in Article VI of the NPT is creating frustration among NNWSs and leading to strong polarisation and hardening of each side's position.

The failure to reach a consensus on a final document at the 2015 NPT Review Conference only fed this polarisation. There is objectively a need to convene dialogues between the divided groups, although that will not be easy with the entry into force of the Treaty on the Prohibition of Nuclear Weapons (TPNW) (2021) and the strong contradictory declarations from both sides about the relevance and desirability of this treaty.

The results of a survey conducted at the end of 2020 in six NATO member countries revealed that large majorities of the populations were in favour of the accession by their countries to the TPNW: Belgium (77%), Denmark and the Netherlands (78%), Iceland (86%), Italy (87%) and Spain (89%)[84]. In Belgium, only 11% of the population reportedly supported the government's decision not to join the treaty and 66% considered that Belgium should be among the first NATO states to join. It is also worth noting that 57% of Belgians wanted the United States' nuclear weapons to be removed from Belgian territory. Even though the survey's methodology can be questioned, the numbers are sufficiently high to illustrate a societal appetite for effective nuclear disarmament.

Humanitarian impact

Building on the successes of other humanitarian disarmament treaties that have banned weapons considered "inhumane"[I], civil society has for decades warned in the disarmament debate forums of the humanitarian catastrophe nuclear weapons could cause. Although

I The Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (1999) and the Convention on Cluster Munitions (2010) are considered the main humanitarian disarmament treaties adopted under the impetus of a global campaign of non-governmental organisations.

the humanitarian aspect has always been present in arms control and disarmament, the main motivation for states adopting rules has principally been the preservation or enhancement of their national security[85]. The purpose of these rules was to contain, control, or prevent developments in and deployments of weaponry that could have destabilising effects on the balance of power among states or give any one of them incentives to perpetrate aggression without suffering severe consequences. In particular, this approach was seen as the basis for the doctrine of nuclear deterrence[86].

Since the inception of nuclear weapons, they have raised humanitarian concerns. However, these concerns long remained at the level of references in the preambles of treaties[87]. For example, the NPT (adopted in 1968) was motivated by "the devastation that would be visited upon all mankind by a nuclear war"[88] and the 2010 NPT Review Conference resulted in a warning about "the catastrophic humanitarian consequences that would result from the use of nuclear weapons"[89].

After the Cold War, two major developments created new momentum in the humanitarian approach to nuclear disarmament. First, on 8 July 1996, the International Court of Justice (ICJ) stated that "the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of international humanitarian law"[90,I]. Subsequently, scientific research stressed the devastating effects of the use of nuclear weapons on climate change and people's daily lives. Both developments created favourable conditions for the mobilisation of civil society on humanitarian approaches to nuclear weapons, which resulted in the launch of the International Campaign to Abolish Nuclear Weapons (ICAN), in 2007. The global coalition of non-governmental organisations calls on states, international organisations, civil society organisations and other actors to acknowledge that "any use of nuclear weapons would cause catastrophic humanitarian and environmental harm" and thus to "take immediate action to support a multilateral process of negotiations for a treaty banning nuclear weapons".[91] ICAN's action finally led to the negotiation and adoption of the TPNW within the United Nations. It entered into force on 22 January 2021. There are currently 86 signatories and 56 states parties. NATO officially opposes the TPNW "as it does not reflect the increasingly challenging international security environment and is at odds with the existing non-proliferation and disarmament architecture"[92].

1.3 Conclusion

To conclude on the state of nuclear weapons in the international context, it must be acknowledged that the pace of the reduction of the global nuclear arsenal is slowing, and the nuclear-weapons-possessing states are modernising their arsenals and, in some cases, increasing them. The nuclear deterrence discourse is high on the agenda for the first time since the end of the Cold War but, at the same time, the call for nuclear

I However, the ICJ could not conclude whether "the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defense, in which the very survival of a State would be at stake". See International Court of Justice, Advisory Opinion of 8 July 1996, Legality of the threat or use of nuclear weapons, https://www.icj-cij.org/en/case/95.

disarmament is louder than ever. On the instigation of civil society, the humanitarian impact of a possible use of nuclear weapons has become a major argument for nuclear disarmament and, eventually, banning nuclear weapons.

2 Belgium and Flanders in nuclear weapons proliferation, control and disarmament: stakeholders, complicance and prospective views

This section discusses the importance of nuclear weapons as objects of policy for Belgium and Flanders in the four key areas in which proliferation, non-proliferation and disarmament produce notable effects: the legal area, the economic area, the defence strategic area and the societal area. For each of these areas, dealt with in individual subsections, the search for connections was performed in two successive phases.

First, a desk review of the literature – understood as all texts related to the topic, including (legal) primary sources, the scientific literature, relevant policy statements and media reports – was conducted. This established the context of the challenges related to nuclear weapons in relation to the concerned area.

Second, quantitative and qualitative research was carried out in the form of interviews with high-level thinkers and representatives of organisations active in the definition of policies in relation to nuclear weapons. Overall, 18 interviews were conducted with representatives of academia, international governmental and non-governmental organisations, Belgian national or Flemish regional institutions and ministries, and think tanks and associations active in these key areas. The interviews aimed to elicit the viewpoints of experts on the current state of play of the non-proliferation and disarmament of nuclear weapons and related policies worldwide, in Europe, and in Belgium and Flanders. It was then possible to examine whether these views supported or challenged the findings from the desk review. The interviewees were also invited to express their views on possible scenarios for the future of the non-proliferation and disarmament of nuclear weapons.

2.1 Nuclear weapons from the legal point of view

This subsection provides answers to the following research questions:

- What are the relevant international regimes regarding the development, production, testing, trade, possession and use of nuclear weapons?
- What evolutions have occurred in recent years with regard to international regulatory framework for nuclear weapons?
- How do these international regimes relate to each other?

Subsequently, on the basis of the findings in this subsection, subsection 2.5.2 answers the following research question: "What would be the impact of Belgium's accession to the Treaty on the Prohibition of Nuclear Weapons (TPNW) on its international engagements and obligations and on the global nuclear disarmament process?"

2.1.1 Findings from the literature analysis

The non-proliferation and disarmament of nuclear weapons are governed by different norms at the international, supranational, national and regional levels (the last two levels referring here to Belgium and Flanders). For the purpose of this study, the comprehensive analysis that follows focuses on the instruments that regulate nuclear weapons with regard to non-proliferation and disarmament that are already applicable to Belgium and Flanders, although the TPNW is also briefly discussed in this section. The analysis identifies and comments not only on the international nuclear-weapons-relevant instruments and corresponding provisions but also on the national and regional (European) instruments that implement the former. Drawing on that extensive legal analysis, this section provides answers to the above-mentioned questions.

At the international level, two sets of instruments will be considered in relation to the management of nuclear non-proliferation and disarmament: conventional and non-conventional instruments. Conventional instruments are legally binding because they are based on a convention – treaty, agreement etc. – that is legally enforceable, while non-conventional instruments are primarily solely politically binding as they have no legal basis and are often informal agreements among groups of like-minded states.

The conventional and non-conventional instruments that will be explored here are those relevant to nuclear disarmament and non-proliferation. Thus, they contain obligations relating to the following thematic areas: disarmament, development, production, testing, possession, storage and use of nuclear weapons, as well as international transfers of nuclear weapons and nuclear-weapons-related items and material.

This literature review sheds light on (1) the international normative framework's past processes and perspectives on its development, (2) the actual level of compliance of Belgium and Flanders with the existing instruments that regulate this field, (3) the compatibilities and incompatibilities among the various instruments, and (4) the compatibilities and incompatibilities with the future decisions and directions that actors may take in the specific context of nuclear weapons disarmament and non-proliferation.

Interconnections and evolutions of the conventional and non-conventional instruments

The following subsections investigate the obligations contained in the relevant instruments, and Belgian and Flemish compliance with them. The present subsection provides a chronological overview of these instruments in order to outline their origins, their evolutions, the relations between them and their relevance to global nuclear weapons non-proliferation and disarmament.

In the aftermath of the Second World War, NATO was founded, among other reasons to deter Soviet expansionism and prevent the revival of nationalistic militarism in Europe through a strong North American military presence on the European continent[93]. At the same time, the United States – which, following the war, had a monopoly on nuclear weapons and thus was concerned not to share this technology – decided to adopt a "full prohibition" policy with regard to the transfer of nuclear technology[I]. However, since the full prohibition of any transaction related to nuclear material or equipment proved to be inefficient in curbing the development of such military technology by other countries[II], the United States decided to change its policy[III]. It opted for a policy of cooperation with those states that agreed to be subjected to safeguards. Accordingly, it established various nuclear cooperation agreements with other countries, including with the European Atomic Energy Community (Euratom), which was created in 1957 to regulate the EU civil nuclear industry. This new policy paved the way for the creation of the International Atomic Energy Agency (IAEA) in 1957.

It was in this context that the necessity of having neutral and/or international watchdogs arose, such as the IAEA and Euratom. These bodies were able to guarantee and allow the peaceful development of nuclear energy applications and transfers of nuclear items.

The first export control regime – the Coordinating Committee for Multilateral Export Controls (COCOM)[IV] – was established in this spirit. It was aimed at controlling and limiting the acquisition of (mostly US) technologies by "sensitive" countries by creating a system of prior authorisation to export certain items. More specifically, it was an agreement between the United States and its NATO Allies[V], together with Australia and Japan, to control exports to the Warsaw Treaty countries and to China[94].

Throughout the late 1950s and early 1960s, numerous nuclear weapons tests were conducted. In response to these and in order to fill the gaps in the international law on the subject, the Partial Test Ban Treaty (PTBT) was signed in 1963[VI]. Only five years later, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) – a landmark treaty – was adopted. The treaty aimed at preventing the spread of nuclear weapons, allowing cooperation in the peaceful uses of nuclear energy and achieving nuclear disarmament

I By means of the well-known Atomic Energy Act (1946), also called the McMahon Act.

II The first Soviet fusion bomb, tested in 1953, was based on indigenous technology.

III The United States reversed its policy in 1953 by initiating the Atoms for Peace Plan.

IV A predecessor of the Wassenaar Arrangement.

V Except Iceland.

VI The PTBT was made redundant by the signing of the Comprehensive Test Ban Treaty (CTBT) in September 1996.

while creating differentiated statuses, rights and obligations for the different states parties.

The Zangger Committee was set up in 1971 as a new dedicated export control regime on nuclear materials and equipment. Its objective was to clarify the meaning of Article III.2 of the NPT and to harmonise the states parties' export control policies. This too set up a system of prior authorisation, to be issued by the participating states at the national level, for exporting items contained in a list.

Nevertheless, these efforts to limit the spread of nuclear weapons proved to be inefficient when India succeeded in testing a nuclear bomb in 1974, reputedly followed by Israel and South Africa in 1979. Since the failure was partly due to the fact that some supplier states were not members of the NPT – and consequently of the Zangger Committee – at that time, an additional regime of nuclear supplier states, this time including non-NPT states[I], was established in 1974: the Nuclear Suppliers Group. This new multilateral export control regime (MECR) adopted its own list of items to be controlled and to be subjected to authorisation. A decade later, an MECR regime dedicated to the means of delivery of weapons of mass destruction (WMDs) in general – mostly missiles – was established: the Missile Technology Control Regime (MTCR).

The nuclear proliferation landscape was further shaken in 1992 by a "dual shock"[95]: the dissolution of the Soviet Union[II] and the revelation of the Iraqi military nuclear programme. In response to these events and to supplement the existing instruments, the Wassenaar Arrangement (WA) was established in 1996. The regime, among other things, promotes and adopts controls on the international transfer of dual-use items[III] in addition to those on conventional arms.

The landmark event of 9/11 further marked the nuclear proliferation and disarmament scene. Concerns around terrorism were already reflected in the existing nuclear-weapons-related instruments – notably the Nuclear Suppliers Group, the WA and the MTCR – but these instruments nevertheless decided to expand their scope by including additional provisions relating to the prevention of terrorist nuclear attacks[96].

Despite the various efforts to combat the proliferation of nuclear weapons, there was a lack of confidence in the efficacy of the instruments that had been put in place by the turn of the millennium. These concerns were strengthened by some important events that took place in the 2000s[IV]. These events led to the launch of various initiatives to complement the existing nuclear weapons non-proliferation toolbox, among them the Hague Code of Conduct against Ballistic Missile Proliferation (2002) and the Proliferation Security

I In particular, France and China.

II The successor states (except Russia) ratified the NPT as NNWSs.

III Under the regulation, "dual-use items" refers to items, including software and technology, that can be used for both civil and military purposes. It includes all goods that can be used for non-explosive uses and that may assist in any way in the manufacture of nuclear weapons or other nuclear explosive devices (Article 2). "Especially designed items" for nuclear weapons are formally included in the definition but are listed in Annexes I and IV (category 0 of the control list).

IV The 2003 crisis in which Iraq was suspected of manufacturing WMDs; North Korea's announcement of its withdrawal from the NPT; the interception of a ship sailing towards Libya containing items that could be used to manufacture WMDs; and the discovery of Abdul Qadeer Khan's network in 2004 (see subsection b.5). See Michel, Q. (2010), The control of international nuclear trade: difficult balance between trade development and non-proliferation of nuclear weapons Pairs: OECD, p. 277.

Initiative (2003). Resolution 1540[97] (2004) rapidly became a milestone in the fight against WMDs, especially in relation to non-state actors, by assigning to states objectives to be implemented at the national level. Eventually, it provided a legal foundation for universalising the principle of "controlling" – in the sense of "regulating" but not strictly "prohibiting" – the international trade in nuclear material, equipment and dual-use items at both the international and the national levels.

Finally, the TPNW was adopted in 2017 on the instigation of governments and civil society organisations. While the instruments already in place at that time had focused on limiting the proliferation of nuclear weapons and encouraging nuclear disarmament, the TPNW fully prohibits all activities related to nuclear weapons.

It can therefore be seen that the nuclear-weapons-related regulatory framework has greatly evolved over time. The various normative instruments that compose it are interconnected and have given birth to a galaxy of formal and informal agencies, regimes and initiatives. These norms frame the actions of states, although the latter may have differentiated obligations and rights. Chronologically, the objectives pursued through the consolidation of the international law have evolved through several stages: a full nuclear export prohibition policy, a policy of cooperation within safeguards, polarisation between the five nuclear-weapon states (NWSs) and the non-nuclear-weapon states (NNWSs), a policy requiring export authorisations prior to transferring related material, and a comprehensive universal ban on nuclear weapons and their related activities.

It would be legitimate to think that, although the TPNW does not constitute the "end of history" when it comes to nuclear weapons, such a comprehensive ban is the ultimate objective. The challenge for the further and future development of the legal framework, therefore, resides more in the means of achieving this objective than in the definition of the objective itself. Hence, it is likely that future evolutions of the legal framework will be related to the practical means that will be necessary to implement the objectives of the TPNW and, consequently, whether the TPNW is sufficient for this purpose.

Conventional sources of norms

The Treaty on the Non-Proliferation of Nuclear Weapons

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)[1] is broadly agreed to be the cornerstone of the global nuclear weapons disarmament and non-proliferation architecture. At present, it has 191 states parties and represents the only legally binding multilateral treaty on disarmament by the NWSs (i.e. those recognised by the NPT).

The landmark international treaty has been termed a "grand bargain"[98] between the NWSs and the NNWSs inasmuch as the latter commit to abandon the pursuit of nuclear weapons in exchange for the NWSs' commitment not to transfer any nuclear weapons to any other

1 Opened for signatures in 1968 and entered into force two years later, the NPT was extended for an indefinite period of time on 11 May 1995.

states and to eventually engage in disarmament and dismantlement of their arsenals. More specifically, the NPT prohibits the NNWSs from producing (including seeking or receiving any assistance in manufacturing), possessing or storing nuclear weapons as well as from transferring or receiving nuclear weapons or nuclear-weapons-related items or material. At the same time, the NPT establishes the positive obligation of nuclear disarmament. Pursuant to Article VI, states parties are required to pursue negotiations in good faith on effective measures to cease the nuclear arms race at the earliest date and to achieve nuclear disarmament. They must also negotiate on a treaty on general and complete disarmament under strict and effective international control. In order to pursue the non-proliferation objective, and to enhance confidence between states parties, the NPT establishes a verification system, whereby states parties have to conclude agreements with the IAEA for the application of safeguards, which inter alia grant the NNWS states parties the right to access peaceful nuclear technology[I].

Belgium has signed and ratified the NPT[II]. Belgium and Flanders comply with the treaty by, among other actions, allowing for verification and implementing safeguards, while directly implementing the provisions on transfers by means of EU Regulation 2021/821[99] (on dual-use items). With regard to some principles of the NPT, Belgium and Flanders are compliant depending of the interpretation retained. Specifically, this relates to the prohibition on the possession, storage and disarmament of nuclear weapons. Belgium is compliant with these provisions if it is considered that the sole potential presence of US nuclear weapons within its national territory would not constitute an "acquisition of control" of such weapons. The notion of "control", in practice, relates to an entity's ability to make independent decisions about the use of a weapon. In the case of Belgium, it does not seem that the government would have "control" over the weapons that may be hosted in its territory (see section 1.1.1). It is unlikely, therefore, that Belgium could be found in breach of its NPT obligations in this regard[III].

Looking at possible future developments in relation to the treaty, every five years a review conference is organised, and the Tenth Review Conference (RevCon)[IV] is now expected to take place in August-September 2022. Among the issues listed in the provisional agenda is the implementation of the provisions of the treaty related to nuclear weapons non-proliferation, disarmament and international peace and security, notably including Article VI[100].

I The IAEA defines "safeguards agreement" as "an agreement between the IAEA and one or more Member States which contains an undertaking by one or more of those States not to use certain items in such a way as to further any military purpose and which gives the IAEA the right to observe compliance with such undertaking". See IAEA, *IAEA safety glossary: terminology used in nuclear safety and radiation protection* (2018), https://www-pub.iaea.org/MTCD/Publications/PDF/PUB1830_web.pdf, p. 205.

II Belgium signed the NPT on 20 August 1969 and ratified it by law on 14 March 1975.

III During the negotiations of Articles I and II of the NPT, in 1965 and 1966, the United States and the Soviet Union agreed vague language in some respects, both to facilitate agreement and because of the intrinsic difficulties of defining terms (e.g. "transfer", "control" and "manufacture"). See Donnelly, B., *The nuclear weapons non-proliferation Articles I, II and VI of the Treaty on the Non-Proliferation of Nuclear Weapons*, Opanal (s.d.), https://web.archive.org/web/20090105200406/http://www.opanal.org/Articles/cancun/can-Donnelly.htm.

IV The Tenth Review Conference (RevCon) was expected to be held in 2020. However, due to the global coronavirus (COVID-19) pandemic, the states parties decided to postpone it to a later date but no later than August 2021. See United Nations, Tenth Review Conference of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (s.d.), https://www.un.org/en/conferences/npt2020.

In 2020, the Stockholm Initiative for Nuclear Disarmament was launched with the purpose of working with the NPT community towards a successful RevCon[101]. Indeed, not every conference has been a success. Often, the NWSs and NNWSs have appeared divided on compliance and other issues, preventing meaningful dialogue. By way of illustration, the most recent RevCon (2015) was not able to agree on an agenda or a final document[102]. Differences and divisions also exist among the NWSs, which for this reason have come together under the so-called P5, established in 2009 with the purposes of demonstrating their commitment to their NPT obligations, facilitating confidence-building between them, and supporting progress towards disarmament[103]. However, due to structural and geopolitical issues, the P5 is often challenged and is not succeeding as was initially hoped[104]. Overall, then, the NPT has experienced successes and failures, the latter mostly connected to the disarmament pillar[105].

The Treaty on the Prohibition of Nuclear Weapons

Although the Treaty on the Prohibition of Nuclear Weapons (TPNW)[I] is not part of the legal framework that is applicable to Belgium at the moment – unlike the other texts and sources in these subsections – an overview of the text is presented here. This overview is expanded with prospective reflections on the relevance of the treaty to Belgium and Flanders in section 2.5.

The TPNW was adopted on 7 July 2017 by a UN conference that was convened to negotiate a legally binding instrument to prohibit nuclear weapons. Among the participants at the conference were a number of international organisations and civil society representatives. Remarkably, the adoption of the treaty was mainly spearheaded by the International Campaign to Abolish Nuclear Weapons (ICAN)[II], a coalition of non-governmental organisations that calls for a ban on all activities related to nuclear energy applied to non-peaceful uses. Similarly to other treaties, such as the Convention on Cluster Munitions (2008), the TPNW addresses the humanitarian consequences of indiscriminate damage to civilians by the imposition of a categorical prohibition. It is the first multilateral legally binding instrument that prohibits all activities related to nuclear weapons.

Remarkably, the five NWSs, together with the other four states that allegedly possess military nuclear programmes (see section 1.1.2.), have not signed the TPNW. Nor have any of the other NATO members signed the Treaty. Most of the EU member states have not signed it either, except for Austria, Ireland and Malta[106]. The treaty prohibits the development, production, testing, and use of nuclear weapons and other nuclear explosive devices; the international transfer of nuclear weapons and nuclear-weapons-related items; and the possession and storage of nuclear weapons. The states parties undertake to pursue nuclear weapons disarmament by, among other means, allowing verification,

I It entered into force following the deposit of the 50th instrument of ratification or accession of the treaty on 22 January 2021.

II ICAN received the Nobel Peace Prize in Oslo, Norway, on 10 December 2017 in recognition of campaigners' work "to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons" and their "ground-breaking efforts to achieve a treaty-based prohibition of such weapons". See The Nobel Prize, The Nobel Peace Prize for 2017 (6 October 2017), https://www.nobelprize.org/prizes/peace/2017/press-release.

concluding safeguards agreements, and removing nuclear weapons from their territories and any places under their jurisdictions. Belgium has neither signed nor ratified the TPNW. Furthermore, it did not vote on its adoption since it did not participate in the negotiation process of the treaty in 2017. Additionally, Belgium voted against the resolution voted in on 7 December 2020 at the UN General Assembly[107] calling upon states to sign, ratify or accede to the TPNW "at the earliest possible date"[108].

From a legal point of view, Belgium and Flanders are already compliant with the TPNW's prohibitions on the development, production and testing of nuclear weapons inasmuch as the NPT – which provides for similar obligations to the TPNW – is directly applicable in the Belgian national legislation. Moreover, Belgium already implements safeguards on its nuclear material and facilities, consistently with the existing obligations in this area. As discussed above, Belgium and Flanders are likely compliant with the principles relating to the possession and international transfer of nuclear weapons, depending on the interpretation of the terms. Nevertheless, Belgium and Flanders are not compliant when it comes to:

- the international transfer of nuclear-weapons-related items, since Flanders has set up a legal framework that implements the European dual-use goods trade control regime[109], and it has national and regional laws for authorising the transfer of nuclear and nuclear-related items to NNWSs and NWSs;
- the storage of nuclear weapons, as long as the Belgian legislation – national and regional – does not prohibit or require declaration of the presence (e.g. stationing, installation or deployment) of nuclear weapons in the country's territory[l];
- the use of nuclear weapons, since the Belgian legislation – national and regional – does not explicitly forbid the use or threat of use of nuclear weapons;
- nuclear weapons disarmament, inasmuch as the Belgian legislation – national and regional – does not legally oblige the removal of any nuclear weapons present in its territory.

Section 2.5 provides prospective views on the possibility and relevance of Belgium joining the TPNW, and any consequences for its legislation and existing obligations, in light of the findings of the present study.

International Atomic Energy Agency and related agreements

Belgium signed the text of the agreement with the European Atomic Energy Community and with the International Atomic Energy Agency (IAEA) in connection with the NPT, and its protocol thereto, on 14 September 1973. The agreement was concluded in order to comply with and implement Articles III (1) and (4) of the NPT, by which Belgium agreed to be subjected to IAEA safeguards and to comply with the NPT. This prevented it from

l There is no obligation to declare the nuclear weapons present in the territory.

developing, producing or storing nuclear weapons or from transferring nuclear-weapons-related items and material.

Belgium has also ratified and is fully compliant with the Statute of the IAEA[I]. It has concluded several agreements allowing for verification and safeguards by the IAEA, including the Additional Protocol and others conventions, such as the Treaty Establishing the European Atomic Energy Community (1957).

Treaty Establishing the European Atomic Energy Community

Belgium signed the Treaty Establishing the European Atomic Energy Community in 1957 together with five other European states. The community, also called Euratom, regulates the EU civil nuclear industry, applying safeguards to make certain that nuclear material and technology are not diverted to other uses, particularly military. The treaty prohibits the development and production of nuclear weapons, and international transfers of nuclear-weapons-related items and material have to be authorised by Euratom. Certain fissile materials may be exported only through Euratom and according to specific provisions.

Although the competences of Euratom were taken over by the European Union in 2009, the obligations contained in the treaty continue to produce their effects vis-à-vis the EU member states.

United Nations Security Council (UNSC) Resolution 1540

The NPT's principles and obligations are reinforced and further implemented at the international level by UNSC Resolution 1540[110], adopted on 28 April 2004. Having been adopted extraordinarily under Chapter VII of the UN Charter, it is binding upon all member states and thereby prevails over other non-conventional international obligations. The resolution was adopted following the revelations about the proliferation network of Abdul Qadeer Khan[II] and in the context of the post-9/11 security environment, with the aim of preventing the involvement of non-state actors in proliferation[111].

Particularly, the resolution requires the states not to provide any support to non-state actors in any nuclear-weapons-related activity, notably by adopting domestic controls and enforcing measures concerning such transfers. The resolution also set up an obligation in relation to the storage of nuclear weapons, requiring states to account for and secure nuclear weapons and related materials in storage.

I The IAEA was established in 1957 in reaction to the fears and expectations generated by the discoveries and diverse uses of nuclear technology. It promotes the peaceful use of nuclear energy and seeks to prevent diversion of this energy to any military application, notably by applying safeguards and verifications. See IAEA, History (s.d.), https://www.iaea.org/about/overview/history.

II Qadeer Khan (1936 – 2021) is considered as the founding "father" of Pakistan's nuclear program. He was accused of illegally trading nuclear secrets to Iran, Libya, and the DPKR. In 2004, he confessed to having shared nuclear secrets with those countries.

The 1540 Committee was established to oversee the implementation of the resolution. It provides assistance and assesses the status of implementation[l]. States regularly report to the 1540 Committee on the actions they have taken or plan to take in order to implement the resolution. A review process is ongoing and should give new directions for following up the implementation of the resolution by the end of 2021.

Belgium and Flanders are compliant with most of the resolution's obligations since Belgium subjects non-state actors to safeguards and has established criminal legislation that directly implements the provisions of the resolution. Concerning compliance with the obligations around international transfer, Belgium and Flanders have set up a legal framework that implements the European dual-use goods trade control regime[112], which itself implements the provisions of Resolution 1540.

However, Belgium and Flanders are only partially compliant with the obligation related to the security of the storage of nuclear-weapons-related material, as Belgium has implemented provisions with regard to securing and accounting for the material in storage, but these do not apply to nuclear weapons themselves. It is likely that measures have been taken in practice under confidential formats for implementing the obligation, but these measures are not publicly debatable as they are not incorporated into the law.

Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Partial Test Ban Treaty)

Driven by public concern over the danger posed by the radioactive fallout following an aboveground nuclear weapons test, the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (known as the Partial Test Ban Treaty, PTBT) was signed in 1963. It prohibits the testing of nuclear weapons in the atmosphere, in outer space and under water. Yet it does not prohibit underground testing. Belgium and Flanders are fully compliant with its provisions.

The parties to the PTBT have agreed to convert the treaty into an instrument banning all nuclear-weapon tests. With strong support from the UN General Assembly, negotiations for a comprehensive test-ban treaty began in 1993 and were concluded in 1996.

The Comprehensive Test Ban Treaty

With the signing of the Comprehensive Test Ban Treaty (CTBT) in September 1996, the PTBT became redundant. The CTBT succeeded the PTBT for the ratifying parties, but the states parties to the PTBT would still be bound by it if they decided to withdraw from the

l The 1540 Committee's mandate to support states was extended to February 2022 by the unanimous adoption of Resolution 2572. See UN Security Council, Resolution 2572: on extension of the mandate of the Security Council Committee Established pursuant to Resolution 1540 (2004) concerning Non-Proliferation of Nuclear, Chemical and Biological Weapons until 28 Feb. 2022, 22 April 2021, https://digitallibrary.un.org/record/3922143.

CTBT or not sign it[113]. However, the CTBT has not yet entered into force[I]. The latest conference on facilitating the entry into force of the CTBT was expected to take place in September 2021 but did not go ahead. Between 1998 and 2009, six nuclear tests were conducted[II].

Belgium and Flanders are fully compliant with the PTBT and have also signed the CTBT and its Protocol, which have been approved in national law.[114] Furthermore, Belgium has made substantive voluntary contributions in support of the work of the Comprehensive Nuclear-Test-Ban Treaty Organization in areas such as training, verification regime enhancement and technical assistance to third countries[115].

The North Atlantic Treaty and the doctrine of the Alliance

The North Atlantic Treaty was signed on 4 April 1949 and forms the legal basis of NATO. The organisation continues to maintain and strengthen its deterrence and defence stance[116], always relying on collective defence – as enshrined in Article 5 of the treaty – and making nuclear deterrence a core element of NATO's overall strategy[117].

With regard to nuclear weapons management principles, the North Atlantic Treaty does not contain any direct reference to nuclear weapons. However, indirectly, it tackles the production of nuclear weapons as long as it allows the members of NATO to maintain and develop their individual and collective capacities to resist armed attack. With regard to the use of nuclear weapons, the parties agree on exercising the right of individual or collective self-defence[III] (Article 5). Article 8 specifies that the international engagements of the members of NATO cannot be regarded as entering into conflict with the treaty. While it prohibits the states parties from entering into any engagements that would contravene their obligations under the treaty (no legal obligations stem from the first part of Article 8, which is mostly a declaration[118]), it does not "amend, invalidate or prioritise other obligations or commitments of the state Parties"[119]. Accordingly, it legally limits the parties' freedom in concluding other engagements. Yet, it does not have any direct legal effect on the validity of any conflicting engagement that a state party concludes with a third party, nor does it establish any legal basis for releasing that third party from the particular conflicting engagement. Section 1.2 commented on the doctrine of the Alliance.

Belgium and Flanders are legally compliant with NATO's principles and current doctrine. However, national implementation of NATO's principles can be ensured by political action more that by legal means, in principle.

I For the CTBT to enter into force, the 44 states listed in Annex 2 to the treaty have to ratify it. Eight countries out of the 44 have not yet ratified it.

II Two nuclear tests were conducted by India and two by Pakistan in 1998, one was conducted by the DPRK in 2006, and another was conducted by the DPRK in 2009. See CTBTO, Nuclear testing 1945–today (s.d.), https://www.ctbto.org/nuclear-testing/history-of-nuclear-testing/nuclear-testing-1945-today.

III As recognised by Article 51 of the Charter of the United Nations.

Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021

Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021[120] sets up an EU regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items. It recasts the former EU dual-use regulation (428/2009). It implements the principles of the international trade controls on nuclear-weapons-related items' transfer arising from the NPT, Resolution 1540 and the MECRs mentioned in subsection c.1..

The regulation specifically concerns international transfers of the so-called "dual-use" items which include nuclear-weapons-related items. The EU member states have the ability to issue or deny authorisations in accordance with the criteria and operational terms set by the European legal instrument. In Belgium, the ability to issue authorisations for the export of nuclear items and for the brokering of dual-use items remains exclusively a federal competence. The issuance of authorisations for export, transit, trans-shipment and technical assistance of all other dual-use items falls under the regions' competences[I]. In the case of exports of nuclear and nuclear-related products to NWSs that are not members of the European Union, an application to the federal authorities for prior authorisation is requested[II].

International case law

To conclude the investigation of conventional instruments regulating nuclear weapons, it is important to mention international case law, which serves as a primary source of international law. The decisions of the International Court of Justice (ICJ) must be consistently applied for the future and for all entities subjected to international law. The ICJ's advisory opinions, although not legally binding, are important because of the interpretations of norms and moral authority that they provide.

In the areas of nuclear disarmament and non-proliferation, three cases are relevant sources of interpretation of norms.

The first case concerns France, against which Australia and New Zealand each filed applications in 1973 in relation to its intention to conduct tests of nuclear weapons in the atmosphere in the South Pacific region[121]. In light of this case's conclusions, a state that clearly and publicly declares its intent that it will not proceed with nuclear tests of a particular type – such as atmospheric tests, even in the form of political declarations –

I Loi spéciale de réformes institutionnelles, *Moniteur belge*, 15 August 1980 ; Besluit van de Vlaamse Regering tot wijziging van het Wapenhandelbesluit van 20 juli 2012 en het besluit van de Vlaamse Regering van 14 maart 2014 tot regeling van de uitvoer, doorvoer en overbrenging van producten voor tweeërlei gebruik en het verlenen van technische bijstand, *Moniteur belge*, 26 April 2018.

II The law of 12 May 1989 regulating the transfer of nuclear items to NNWSs (published in the Moniteur Belge on 15 June 1989) was amended by extending the licencing obligation for exports to NWSs. Prior export authorisations are issued upon the opinion of the Commission d'Avis pour la Non-Prolifération des Armes Nucléaires (CANPAN). Every region may be represented in the CANPAN by an observer.

commits itself *erga omnes*, in the meaning of international *case* law. This means that by that political declaration the country engages in obligations owed toward all.

The second case was raised by the Republic of the Marshall Islands[122], which instituted proceedings in 2014 against nine states[I], arguing that they were not fulfilling their obligations under Article IV of the NPT[II]. After due examination, the ICJ concluded that it could not rule in the absence of a dispute[III]. Although the judgement is exclusively based on the competence of the ICJ (i.e. its inability to rule in the absence of a characterised dispute between the parties), it does not give its assent to the absence of negotiations on nuclear disarmament in relation to Article VI of the NPT.

The third is an advisory opinion[123]. On 15 December 1994, the UN General Assembly asked the ICJ for an "urgent" advisory opinion on the following question[124]: "Is the threat or use of nuclear weapons in any circumstance permitted under international law?" The ICJ could not definitively conclude whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme instance of self-defence in which the very survival of a state would be at stake. In light of this case, it seems that states are free to threaten to use or actually use nuclear weapons until they are bound not to do so by reference to a prohibition in either treaty law or customary international law. Furthermore, the use of nuclear weapons is unlawful if contrary to Article 2, paragraph 4, of the UN Charter[IV].

Belgium does not contravene international case law in the areas of interest referred to above.

Non-conventional sources of norms

Multilateral export control regimes

In the area of international trade in nuclear weapons and nuclear-weapons-related items, a crucial role is played by the multilateral export control regimes (MECRs), and therefore by the principles and obligations arising from non-conventional instruments.

The Zangger Committee was originally established in 1970 to reach a consensus on the understanding of the specific meaning of "equipment or material especially designed or prepared for the processing, use or production of special fissionable material" in accordance with Article III.2 of the NPT as well as on the related conditions and procedures of export of such material and equipment in the name of fair competition. In this respect, the Zangger Committee requires the participating states to have procedures in place regarding the export of such material and equipment, including IAEA safeguards.

I China, the DPRK, France, India, Israel, Pakistan, Russia, the United Kingdom and the United States.

II Article VI requires states to pursue negotiations in good faith on effective measures to cease the nuclear arms race at the earliest date and to negotiate a treaty on general and complete disarmament under strict and effective international control.

III For a dispute to exist, certain conditions must be met. See International Court of Justice, Obligations concerning negotiations relating to cessation of the nuclear arms race and to nuclear disarmament (Marshall Islands v. United Kingdom) (s.d.), https://www.icj-cij.org/en/case/160.

IV "All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations". See United Nations, Charter of the United Nations (1945), https://legal.un.org/repertory/art1.shtml.

The Nuclear Suppliers Group, established in 1974, is a group of nuclear supplier countries that aims to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of guidelines for nuclear and nuclear-related exports. Particularly, the group requires participating states to apply safeguards and export controls to transfers of nuclear-related items[I].

As the successor of the Coordinating Committee for Multilateral Export Controls (COCOM), the Wassenaar Arrangement (WA) was established in 1996 with the main objective of contributing to regional and international security and stability. Its objectives are to promote, among other things, greater responsibility in controlling the transfers of dual-use items (in addition to the controls set up on the export of conventional arms) and also to prevent their acquisition by terrorists. In light of this, the WA complements and reinforces the existing control regimes for WMDs and their delivery systems, requiring national controls on export, transfer, re-transfer, transhipment and brokering activities[125].

With regard to the specific category of the means of delivery of WMDs (e.g. missiles and unpiloted aerial vehicles), the Missile Technology Control Regime (MTCR) was established in 1987. It regulates the international transfer of nuclear-weapons-related items and material, requiring states to control the export of nuclear weapons delivery systems, and allows the transfer of certain items only under guarantees.

Belgium and Flanders are fully compliant with the principles and obligations arising from the Zangger Committee, the Nuclear Suppliers Group, the WA and the MTCR, in particular regarding the international transfer of nuclear-weapons-related items and material. Belgium (for nuclear material and equipment) and Flanders (for dual-use goods) have respectively set up a legal framework that implements the European dual-use goods trade control regime, which itself legally implements the principles set out by the MECRs. They have also concluded agreements to apply safeguards on their national territory.

Concerning the relationships between instruments, it is noteworthy that, on the one hand, the MECRs implement the obligations of Regulation 1540. On the other hand, the MECRs are implemented by the EU dual-use regulation as long as it reflects the commitments agreed upon in key MECRs[126].

The Hague Code of Conduct against Ballistic Missile Proliferation (HCoC)

The Hague Code of Conduct against Ballistic Missile Proliferation (HCoC) aims to control the development, production, testing and possession of the means of delivery of nuclear weapons. Furthermore, it prohibits the international transfer of nuclear-weapons-related items and material, insofar that states undertake not to contribute to, support or assist any ballistic missile programme in countries that might be developing nuclear weapons.

I In this respect, suppliers have agreed on principles, common definitions, and an export control list of equipment, materials, software and related technology.

Concerning nuclear weapon disarmament, states undertake to reduce their national holdings of such missiles, in the interests of global and regional peace and security.

Belgium and Flanders are compliant with the HCoC, although compliance with some of its principles may be subject to interpretation. Particularly, Belgium and Flanders are compliant with the prohibition on the production, development and testing of nuclear weapons, although compliance in relation to Belgium is ensured mainly through political action rather than legal action. Moreover, the EU has adopted a Council decision in support of universalising the HCoC[I].

With regard to the international transfer of nuclear-weapons-related items and material, Belgium and Flanders have respectively set up a legal framework that implements the European dual-use goods trade control regime, which itself legally implements the principles set out by the HCoC. However, depending on the interpretation, Belgium is only compliant with the provisions of the HCoC on possession and disarmament if it is considered that the sole potential presence of US nuclear weapons within its national territory would not constitute a "holding" or "deployment" of missiles carrying nuclear weapons, and if this presence could be considered as "restrained".

The Proliferation Security Initiative

The Proliferation Security Initiative (PSI) was launched in 2003 as a multinational response to the proliferation of WMDs and related threats, and to complement the existing efforts. It provides a platform where states willingly gather to actively engage in activities relating to countering the proliferation of trafficking in WMDs, their delivery systems and related material. Under the PSI's principles, partner states commit to undertake effective measures to prohibit international transfers of nuclear weapons and nuclear-weapons-related items to and from states and non-state actors of concern relating to proliferation.

Belgium and Flanders are compliant with the governing principles of the PSI, of which Belgium is a member. Particularly, they abide by the principle of prohibiting international transfers of nuclear weapons and nuclear-weapons-related items and material. Belgium gives authority to its customs authorities to interdict these shipments of concern.

2.1.2 Findings from the interviews with key stakeholders

Within the framework of this study, interviews were conducted with key stakeholders in the following fields: administrative, political, international, economic, academic and civil society. All of these interviews touched directly or indirectly on the roles and evolutions

I The Council decision relates to outreach activities aimed at EU third countries. See European Council, Council Decision (CFSP) 2017/2370 of 18 December 2017 in support of the Hague Code of Conduct and ballistic missile non-proliferation in the framework of the implementation of the EU Strategy against Proliferation of Weapons of Mass Destruction (consolidated), https://eur-lex.europa.eu/eli/dec/2017/2370/oj.

of legal – either binding or non-binding – norms in relation to non-proliferation and disarmament.

All the interviewees recognised the relevance of the NPT as a cornerstone of efforts towards nuclear non-proliferation and disarmament. However, some interviewees pointed out that the treaty has not succeeded in ensuring non-proliferation, since four states have acquired nuclear weapons outside it. They stressed the criticisms of the NPT put forward by Asian countries in particular.

Concerning the disarmament obligations enshrined in Article VI of the NPT, the interviewees seemed to almost unanimously agree that the treaty had failed in enforcing them. For many, therefore, the NPT is in crisis and needs to be completed as it relates to disarmament.

From the interviews, it emerged that it is crucial to maintain the commitments to the galaxy of instruments supporting the NPT, such as the safeguards agreements, the CTBT, nuclear-free zones and the Convention on the Physical Protection of Nuclear Material (CPPNM). Moreover, the proposed Fissile Material Cut-Off Treaty was also mentioned as an important instrument that could support the NPT. This international agreement would prohibit the production of highly enriched uranium and plutonium – the two main components of nuclear weapons.

With regard to the relationship between the NPT and the TPNW, the interviewees were clearly divided between those who thought that the new instrument is legally compatible with the NPT and those with the opposite view. Some thought that the TPNW effectively completes and strengthens the NPT by implementing its Article VI. Others argued that the TPNW is incompatible with the NPT and that it could even challenge it by diminishing the attention dedicated to the NPT. Even worse, it could undermine the commitments of the states parties, which could eventually withdraw from the treaty and increase the proliferation of nuclear weapons because of the alleged lack of a verification system in the framework of the TPNW.

Finally, in relation to NATO, some interviewees stated that engaging in total nuclear disarmament would not be legally incompatible with NATO's obligations as long as these are mostly of a political nature.

2.2 Nuclear weapons from the economic point of view

This section provides answers to the following research questions:

- What would be the impact of Belgium acceding to the TPNW on Belgian companies and financial institutions?
- What would be the impact of Belgium acceding to the TPNW on the nuclear industry and research in Flanders and on the Flemish dual-use export control system?

2.2.1 Findings from the literature analysis

The literature has explored the relationship between nuclear weapons and the economy with regard to specific areas, such as the economic consequences of a nuclear weapon's detonation or nuclear conflict[127], the allocation of national financial resources to nuclear weapons programmes' proliferation[128], the economic advantages of having nuclear weapons[129] and the possible reinvestments resulting from nuclear disarmament. However, little literature can be found on the economic implications of global nuclear disarmament. The debate on the economic consequences of a comprehensive ban on nuclear weapons seems to have intensified since 2018 due to the adoption and entrance into force of the TPNW. Although Germany[130], Ireland[131], the Netherlands[132], Norway[133], Sweden[134], Switzerland[135] and the United Kingdom[136] have conducted national reviews on the relevance of the TPNW to their countries, it is only in the study presented by Sweden[137] that the economy is mentioned as a factor for political consideration. That study substantially argues that the TPNW would not damage the Swedish economy and even goes further in stating that accession to it would be "economically justifiable".

In principle, the main areas in which nuclear weapons disarmament may affect the economy of a country are the following:

- the export of nuclear-weapons-related items;
- the transfer of nuclear-weapons-related items to both NWSs and NNWSs;
- financial investment in nuclear weapons programmes, directly or indirectly;
- involvement of companies in nuclear-weapons-related activity, directly or indirectly;
- the abandonment of nuclear weapons programmes and shut-down of the related industry.

Concerning the economy, the TPNW requires states parties to undertake never to "assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty"[138]. Thus, the treaty can be interpreted to prohibit the financing of nuclear weapons programmes, although this is not expressly stated[139]. Although some financial institutions in various nations already apply ethical policies restricting transactions related to nuclear weapons programmes, few nations have legislation in place prohibiting such transactions. Therefore, states that ratify the TPNW, or are willing to engage in nuclear disarmament, have to make these activities unlawful under their national legislation and therefore impose restrictions on the above-mentioned activities. This means that national investors in the country concerned must identify their portfolio's exposure to nuclear weapons and take action to effectively comply with the obligations mandated by the treaty or the treaty's nuclear disarmament engagement[140].

Interestingly, the TPNW seems to have already had some implications for companies and investors, even for states not party to it. The existing trend towards divestment seems to

have increased since the treaty negotiations in 2018. Two examples are the actions taken by the Dutch pension fund ABP and the central bank of Norway to exclude manufacturers of nuclear weapons from their investments[141]. Indeed, a comprehensive ban on nuclear weapons would raise a legal and reputational risk for entities involved in such transactions. In contrast, non-involved entities not only would avoid any reputational or legal risk but also would appear not to oppose nuclear disarmament and even to welcome accession to the TPNW, as the International Trade Union Confederation (ITUC) has done in some of its statements[142].

Some Belgian banks, such as AXA Bank Belgium[143] and KBC Group, already include references to the fight against proliferation financing in their internal policies. In particular, the latter is expressly aligned with the TPNW's obligations. In June 2018, it made public in a press release that it had started to adopt stricter policies for sustainable banking and insurance in order to respond "to the constantly evolving expectations of its stakeholders and the wider community"[144]. This included a new Policy on Arms-Related Activities, which blacklists companies involved in the production or development of nuclear weapons and excludes them from all of KBC's activities[145]. As the press release states, KBC is following the line of the TPNW. In a more recent press release, issued on 22 January 2021 (on the treaty's entering into force), the bank reasserted its reluctance about getting involved in any form of weapons-related activity[146].

In 2019, PAX, a Netherlands-based partner of ICAN, published a report[147] that profiles 28 companies connected to the production of nuclear weapons. The report also investigates other companies that do not fall within its scope but are helpful in better understanding the global nuclear weapons industry. The report investigates contracts related to the production of key components of nuclear weapons (excluding aeroplanes and submarines) that were granted in around 2015 and are set to expire in 2020. It found that no concerned companies and contracts could be connected to Belgium. However, when it comes to investors, the situation is different. The report *Shorting our security: financing the companies that make nuclear weapons*[148] shows that Belgium has some investors in nuclear weapons. The study identified 325 financial institutions from 28 countries with such investments. Although 90 of these investors were new, 94 institutions seemed to have stopped investing or having any significant financial relationship with nuclear weapons producers since the previous report from 2018[149]. Belgium is among the 28 countries that host the headquarters of financial institutions with investments in companies linked to the production of nuclear weapons. While in 2018 it had two such financial institutions, investing USD 61 million, in 2019 it had only one, KBC Group, investing USD 32.9 million (a reduction of 46%)[I]. Therefore, if there were a total ban on nuclear-weapons-related activities, in Belgium one company would have to cease some of its investments at present.

Concerning the international transfer of nuclear-weapons-related items, under Belgian law it is already prohibited to develop, produce, broker, acquire, transfer to anyone, export, or carry in transit such items, or to assist anyone in carrying out such activities. However, at present, the Belgian and Flemish legal frameworks allow the transfer of nuclear-

[I] The investment of the KBC Group concerns Serco, a UK company involved in the management and operations of the UK Atomic Weapons Establishment.

weapons-related items to NWSs with no restrictions on military programmes' end uses. Therefore, if there were a comprehensive prohibition on nuclear weapons, the legal framework would need to be amended accordingly.

In relation to exports of nuclear-weapons-related items, it is interesting to note that the number of authorisations granted by Belgium has been decreasing over the past five years[150]. According to the 2019 annual report issued by the Commission d'Avis pour la Non-prolifération des Armes Nucléaires[151] – the Belgian commission that gives advice on nuclear exports from the country – in 2019 Belgium granted 13 authorisations for the export of nuclear and dual-use items and it denied two authorisations. Interestingly, looking at the evolution of the number of authorisations granted in the past five years, there is a generally decreasing trend[I].

Finally, nuclear disarmament may have economic implications for states that abandon nuclear weapons programmes, as this would also end the related industry. With regard to Belgium, the country does not have and has never had any nuclear weapons programmes or related industry.

The Flemish Region may have some leeway in terms of curbing partnerships, business involvement and financing related to nuclear weapons programmes, thanks to the competence it has to make decisions regarding its economy[152]. Specifically, it can make decisions regarding, inter alia, the support given to companies and the permits for trading establishments. In light of this, it could use its authority on the economy to ensure ethical compliance with regard to nuclear disarmament and non-proliferation.

2.2.2 Findings from the interviews with key stakeholders

For the purposes of this study, several interviews were conducted with key stakeholders in the Belgian economic sector[II]. The interviews aimed at collecting the views of these actors on the possible impacts of legal nuclear disarmament.

The interviewees underlined and insisted on the distinction between nuclear disarmament and the nuclear-related economy. They saw the nuclear-related economy as mainly linked to civilian nuclear power production, and for this reason they did not identify any particular negative consequences for the national economy from a total prohibition on nuclear weapons.

Moreover, some interviewees suggested that a nuclear weapons ban would be welcome, since disarmament could offer the possibility of useful recycling of materials as nuclear fuel (the reverse is not possible). Various programmes recycle fissile material from nuclear weapons in civilian nuclear energy generation (i.e. the conversion of weapons-grade nuclear fuel into nuclear fuel for energy generation).

I The numbers of authorisations were 16 in 2015, 15 in 2016, 14 in 2017, 29 in 2018 and 13 in 2019.

II Specifically, the study conducted five interviews with Belgian companies (and federations of employers) dealing with nuclear waste management, decommissioning operations, nuclear technology, nuclear research centers, industry and financial activities.

Some interviewees stressed that Belgian banks already have general policies on sustainable investments, including policies on investment in arms. These general policies outline each bank's position on financial activities with regard to arms. Some banks are very strict on a ban on financial activities concerning nuclear weapons. Furthermore, some banks offer sustainable investment products in which any investment in arms-related activities is banned. These products are being promoted by the creation of a sustainability label by the federation of banks (Febelfin).

Belgium's accession to the TPNW, it is believed, would have a limited impact on the financial activities of the banks since they already have the above-mentioned general policies and specifically offer sustainable investment products. Accession to the TPNW would only make such activities a legal obligation. However, some interviewees noted that if investment in companies involved to nuclear weapons were prohibited, they would ask for a detailed list of "forbidden" companies in order to support the identification of indirectly involved companies.

Finally, some of the interviewees did not feel able to contribute on this topic as their organisation was subject to IAEA safeguards or had an ethical committee in place to assess activities, or they simply did not see any connection between the economy and disarmament. Some saw disarmament as a further guarantee against the risk of diversion of nuclear related material to non-state actors.

2.3 Nuclear weapons from the national defence point of view

This section provides answers to the following research question: How would accession to the TPNW influence Belgium's existing international engagements in the framework of its NATO obligations and related practices?

2.3.1 Findings from the literature analysis

Belgium has never had a national security strategy but relies on NATO, European integration and multilateralism in general for its security. Its 2016 Strategic Vision for Defence, nevertheless, states that the significant Russian nuclear arsenal means that the European NATO countries still see an important role for the Alliance in nuclear deterrence[153]. In December 2020, the Belgian minister of defence, Ludivine Dedonder, asked a group of academics to formulate recommendations with regard to the updating of the 2016 vision. These recommendations reiterate the importance of NATO's deterrence and capacity to retaliate against aggressions with all means, including nuclear capacities. It recommends that Belgium generally increases its contribution to deterrence and the defence of the Alliance[154].

Nuclear deterrence has been at the core of NATO's mutual security guarantee and collective defence since its creation in 1949[155]. However, only in the 2010 Strategic Concept did NATO

identify itself as a nuclear alliance: "The Strategic Concept commits NATO to the goal of creating the conditions for a world without nuclear weapons, but reconfirms that, as long as nuclear weapons exist, NATO will remain a nuclear alliance. It also seeks to ensure the broadest possible participation of Allies in collective defence planning on nuclear roles, in peacetime basing of nuclear forces, and in command, control and consultation arrangements"[156]. NATO's 2012 Deterrence and Defence Posture Review stressed that "the fundamental purpose of Alliance nuclear forces is deterrence, which is essentially a political function. While the Alliance focuses on the maintenance of effective deterrence, political control of nuclear weapons will be kept under all circumstances and nuclear planning and consultation within the Alliance will be in accordance with political guidance"[157].

In practice, the governance of NATO's nuclear policy lies, for the key principles, with the heads of state of the 30 members of the Alliance. The implementation of the nuclear policy is the responsibility of the Nuclear Planning Group (NPG). This is a forum for consultation on all issues related to NATO's nuclear deterrence. The High Level Group (HLG) is the NPG's senior advisory body. It discusses aspects of NATO's nuclear policy, planning and force posture as well as matters concerning the safety, security and effectiveness of NATO's nuclear deterrence. The NATO's nuclear forces, themselves, are composed of strategic nuclear forces and dual-capable aircraft (DCA). The DCA are important to "NATO's nuclear deterrence mission and are available for nuclear roles at various levels of readiness. In their nuclear role, the aircraft are equipped to carry nuclear bombs in conflict and personnel are trained accordingly". Nuclear sharing arrangements, with the United States maintaining full control and custody of its weapons and Allies providing military support for the DCA, is "one of the main components of security guarantees and the indivisibility of security of the whole Euro-Atlantic area"[158].

NATO claims that it is strongly committed to disarmament and non-proliferation and that it contributes to "effective and verifiable disarmament efforts"[159]. It considers the NPT as "the cornerstone of the global effort to prevent the spread of nuclear weapons and weapons technology, materials, and design knowledge, and to achieve our common goal of nuclear disarmament, and general and complete disarmament under strict and effective international control"[160]. Nonetheless, at the 2016 Warsaw Summit, NATO's leaders "regret[ted] that conditions for achieving further disarmament [were] unfavourable"[161]. At the 2018 Brussels Summit, the Alliance reconfirmed its long-standing commitment to nuclear deterrence, stating that "as long as nuclear weapons exist, NATO will remain a nuclear alliance"[162]. This statement was confirmed at the 2021 Brussels summit, which emphasised a robust deterrence policy ("by all means")[163]. Currently, the Allies are working on a new strategic concept for NATO, which should be adopted at the 2022 Madrid summit. It is unlikely, however, that the role of nuclear weapons as one of the pillars of NATO's transatlantic security will be challenged or even affected by this new concept.

Belgium, as an Ally, fully subscribes to NATO's nuclear policy. While this does not constitute a legal obligation[I], the political engagement is of great importance. Benefiting from NATO's nuclear umbrella implies an almost unconditional engagement in the nuclear

I See section 3.1.4.

policy. Although this has never been confirmed or denied by the government, Belgium is supposedly host to US tactical nuclear weapons. The Belgian F-16A is a DCA and this dual capability was also in the technical requirements for the acquisition of its successor, the F-35A.

As a purported host of US nuclear weapons, Belgium actively participates in the bodies related to NATO's nuclear policy and more particularly in the HLG. Renouncing the hosting of nuclear weapons within its territory would not only entail practical challenges related to infrastructure but also have important political consequences. It would bring into question Belgium's engagement in NATO and might isolate it vis-à-vis discussions of the nuclear policy within the Alliance. Furthermore, Belgium would have to show its commitment by reviewing its defence budget and increasing its investment in conventional arms to comply with the Allies' pledge to invest 2% of their gross domestic product in defence, as agreed at the 2014 Wales summit[164].

Renouncing the capacity for DCA would also have an impact on Belgium's relationship with the United States and could lead to a crisis of confidence. The acquisition of the US-made F35-A should not only be seen, in this respect, as a military-technical choice but also as a political signal of good faith towards the United States and an expression of Belgium's commitment to the nuclear sharing policy of NATO. The economic impact of such a renouncement should not be underestimated since the acquisition of the F35-A was coupled with substantive economic compensations for Belgian industry.

Overall, with its defence strategy heavily relying on NATO's mutual assurance and deterrence policy, Belgium would have to completely review its national strategic posture in the world if it decided to remove all nuclear weapons from its territory. In extreme circumstances, this might even lead to it leaving the Alliance.

2.3.2 Findings from the interviews with key stakeholders

The Belgian officials who were interviewed stressed the fact that unilateral disarmament would have important consequences[I]. Some stated that Belgium is legally bound to participate in NATO's nuclear policy. Furthermore, it would have a political impact on the cohesion of the Alliance. While nuclear disarmament is an objective for Belgium, and also for NATO, the officials stated that it should be reached in a balanced way, involving all NWSs. They also reiterated NATO's stance that "as long as nuclear weapons exist, NATO will be a nuclear alliance"[165]. Unilateral nuclear disarmament would isolate Belgium within NATO and decrease its political influence.

This position was challenged by other interviewees. According to them, Belgium's engagement in NATO's nuclear policy is not legally binding and NATO has not always been a nuclear alliance, as this was officially acted only in the 2010 Strategic Concept. Some interviewees also stressed that NATO has a history of disagreement about bans on certain

I A total of 14 interviews were conducted with foreign affairs officials, academics, international organisations' officials, politicians, and representatives of national and international civil society organisations.

weapons. Not all Allies are part of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (known as the Mine Ban Treaty, 1999) or the Convention on Cluster Munitions (2010), for instance, and this has not raised particular problems for the Alliance's cohesion. There could be room within NATO, therefore, to participate in a lesser degree in the Alliance's nuclear strategy[1]. Some Allies have already expressed caveats in this field (e.g. not accepting nuclear weapons on their territory under any circumstances), and not all Allies participate with the same level of engagement.

2.4 Nuclear weapons from the societal point of view

2.4.1 Findings from the literature analysis

The TPNW was negotiated and adopted with impetus from civil society, focusing on the humanitarian consequences of the use of nuclear weapons. While the humanitarian aspect of disarmament was not new, it was used for the first time as a major argument relating to the disarmament of WMDs. As early as the 19th century, there were efforts to regulate or prohibit the use of some means of warfare – such as biological and chemical weapons – due to their possible consequences for civilians. After the Cold War, initiatives from civil society convinced governments to prohibit certain conventional weapons deemed to have excessive humanitarian consequences, leading to (among others) the Mine Ban Treaty and the Convention on Cluster Munitions.

A recent poll[166], conducted in late 2020 in six NATO countries – Belgium, Denmark, Iceland, Italy, the Netherlands and Spain – showed a high level of public support for these countries joining the TPNW. The poll revealed that, in Belgium, 77% of the population supported the idea of the country joining the treaty and only 11% thought that it should not. Some 66% of the respondents were of the opinion that Belgium should join the TPNW even before other states – notably the NWSs – and that it should assume a position of leadership on nuclear disarmament rather than acting as a follower. A majority of the Belgian population (57%) wanted the purported US nuclear weapons removed from Belgium's territory and were against the acquisition by the country of nuclear-capable fighter jets.

The Belgian campaign against nuclear weapons is organised by the #nonukes.be coalition, which has the objective of a Belgium without nuclear weapons in a world free of nuclear weapons[167]. The coalition gathers together more than 50 organisations from various areas and is not related to any political party. It is a member of ICAN.

The opposition of the Belgian population to nuclear weapons was visible as early as the 1979 "Euromissiles crisis". This followed NATO's decision to deploy new mid-range nuclear weapons in Europe. Massive protests followed this decision in the five concerned states: Belgium, Germany, Italy, the Netherlands and the United Kingdom. Several

[1] Iceland, for instance, doesn't allow stationing of nuclear weapons on its territory during a period of conflict or peace.

hundred thousand people protested against the deployment of nuclear weapons in Belgium in 1979, 1983 and 1985. The crisis also raised important tensions within the government and between the political parties[168].

2.4.2 Findings from the interviews with key stakeholders

All interviewees[I] agreed upon the ultimate goal of a world free of nuclear weapons. However, some interviewees (primarily officials) questioned the approach of civil society that led to the TPNW. They argued that the TPNW might have been counterproductive and have actually enhanced the polarisation in the nuclear disarmament process between the NWSs – together with their allies – and the NNWSs. These interviewees felt that nuclear disarmament within the NPT framework is the most effective path since the TPNW lacks measures for robust verification and practical implementation. Furthermore, they felt that it is unrealistic and does not take into account the complex geopolitical situation and current security challenges. It was thought that unilateral nuclear disarmament would put security at risk. They agreed upon nuclear disarmament, but on a step-by-step and mutual basis.

The interviewees from civil society, in contrast, stressed that the TPNW is the practical implementation instrument of Article VI of the NPT. According to them, it is not contradictory but complementary to the NPT. They emphasised that the preamble of the TPNW acknowledges the importance of the NPT as a cornerstone of nuclear non-proliferation and disarmament, and that there is a clear interplay between the NPT and the TPNW. They also argued that there is a verification mechanism within the TPNW. By referring to the additional protocol of the IAEA safeguards, the TPNW establishes even higher standards than the NPT.

As mentioned in the previous subsection, 77% of the Belgian population is in support of Belgium joining the TPNW. The Belgian government should not ignore this call. Civil society is well aware that circumstances are not in favour of a Belgian accession, but Belgium could take steps to show enhanced engagement in nuclear disarmament. It could attend the first Conference of the States Parties of the TPNW in 2022 as an observer. It could also strive to achieve a better dialogue between the NPT and the TPNW by adopting more constructive language regarding the TPNW.

NATO does not exclude diverging views on nuclear weapons within the Alliance (see 2.3.2). As a (purportedly) nuclear-weapons-hosting country, Belgium could engage in consultations with a view to withdrawing nuclear weapons from Belgian and European territories. It could also, as a first step, promote the decrease of importance of nuclear weapons in security policies and the inclusion of no-first-use policies in national nuclear security policies.

I This section presents the result of ten interviews with foreign affairs officials, politicians, academics, and representatives of national and international civil society organisations.

2.5 Prospective views: possible developments

This section provides an analysis of the various factors and levers relating to future policies on nuclear weapons management for and by Belgium and, more specifically, Flanders. This analysis not only offers hypotheses about the future of these policies but also provides elements for assessing the likelihood of certain scenarios occurring and provides, through different options, potential responses to those scenarios.

2.5.1 Interconnections between the economic, strategic, societal and legal aspects

To identify options for Belgium and Flanders to act for nuclear non-proliferation and disarmament, it is imperative to consider the economic, strategic, societal and legal aspects together. It is clear from the investigations conducted within the framework of the present study, a global examination of all these aspects, their current evolutions, and the possible developments in their respective areas that it would not be possible to formulate a single "likely" and globally coherent scenario.

From the economic perspective, Belgium and Flanders comply with the relevant international obligations. The current legal obligations in this field mainly relate to export controls and measures related to proliferation financing, but they do not in any way prevent economic actors from conducting business with entities involved in nuclear weapons programmes.

From the strategic perspective, Belgium has its own national defence policy, which is fully aligned with the obligations and principles originating from NATO's commitments. The latter are based on the North Atlantic Treaty, which, with regard to nuclear weapons, establishes no legal commitments other than maintaining and developing countries' individual and collective capacity to resist armed attack. However, NATO makes nuclear deterrence a core element of its overall strategy, as is regularly confirmed by its strategic doctrine documents. The commitments that Belgium undertakes with NATO remain political ones. Nonetheless, the fact that Belgium purportedly hosts US nuclear weapons in its territory is a factor to take into account. Therefore, future developments at the international, national and regional levels vis-à-vis nuclear non-proliferation and disarmament cannot ignore this important strategic dimension.

Equally important are aspects related to civil society, its needs and its aspirations. Depending on the form of government as well as its political configuration, a state will take action at the instigation of prompts from society. In the case of Belgium, 77% of the population seem to advocate for the complete prohibition of nuclear weapons (see section 2.4.1).

Finally, legal aspects are crucial in assessing and deciding what room a state may have to leverage its policy. At present, Belgium and Flanders are fully compliant with most of the international legal obligations in the field of nuclear disarmament and non-proliferation, specifically in respect of nuclear weapons development, production, testing, international

transfers, possession, storage, use and disarmament. Belgium may be considered to be partially compliant or non-compliant – depending on the interpretation of the provisions – only in reference to the possession and storage of nuclear weapons, because of its purported hosting of US nuclear weapons.

Belgium and Flanders should decide whether or not additional steps towards non-proliferation or disarmament are desirable, taking into account all of these aspects and their interconnections. One key decision will be whether to adhere to and then implement the TPNW or not.

2.5.2 Prospective views on the Treaty on the Prohibition of Nuclear Weapons

This section provides answers to the following research question: "What would be the impact of Belgium's accession to the Treaty on the Prohibition of Nuclear Weapons (TPNW) on its international engagements and obligations and on the global nuclear disarmament process?"

Based on the legal and scientific literature review conducted for this study, it can be seen that the TPNW is globally in line with the principles established internationally in this area, including those stemming from the NPT. In fact, the TPNW adds a further layer to the international body of rules – one relating to a comprehensive prohibition on nuclear-weapons-related activities – while respecting and not subtracting from the existing principles. If it is deemed that the TPNW does not formally replace the NPT but complements it within the international legal framework, the provisions of the latter on safeguards will continue to apply. As a consequence and exclusively from a legal point of view, the TPNW does not conflict with other instruments governing nuclear-weapons-related activities. Similar conclusions were reached in other national studies by EU member states, which will be mentioned in the following section. For the purpose of this study, however, it is crucial to identify possible incompatibilities between Belgium's and Flanders' current commitments and the obligations in the TPNW.

The in-depth legal review performed in this chapter suggests that Belgium's accession to the TPNW would not cause any incongruences with its current legal commitments towards non-proliferation and disarmament. However, for Belgium to become party to the treaty, it would be imperative for the country to first amend its legal framework to be fully compliant. Therefore, it would need to align with the prohibitions on storage and use and the obligation to disarm by formally recognising and addressing the existence of nuclear weapons in the national law. In particular, it is the prohibition on storage that would most contradict the current status of Belgium, which purportedly hosts the United States' nuclear weapons in the context of NATO. The TPNW explicitly forbids countries to allow any stationing, installation or deployment of any nuclear weapons in its territory the nuclear weapons of other countries (Article 1 (g)). As such, while Belgium would be compliant with this requirement if "hosting" were taken to mean states not producing nuclear weapons or possessing their own arsenals, the TPNW includes other activities (e.g. stationing, installation and deployment) within the definition of "hosting". In this

respect, Belgium's purported status as host nation is factually and substantially incompatible with the prohibition on the storage of nuclear weapons in the TPNW.

As far as Belgium's engagements with NATO are concerned, from a purely legal point of view, there are no constraints on Belgium being or not being part of the TPNW. The extensive NATO discourse on nuclear deterrence as the basis of the Alliance has strong political weight, but NATO has never adopted any legal provisions on the management of nuclear weapons. On the one hand, pursuant to Article 8 of the North Atlantic Treaty, each NATO member has the sole obligation not to infringe on the principle of developing its own "defence capacity". On the other hand, the TPNW does not prohibit in any way the participation of states parties in military alliances. Accordingly, the two treaties are not contradictory and Belgium (or any other NATO member) may – strictly legally speaking – join the TPNW provided that it renounces the nuclear protection of the Alliance[169].

However, even if there are no legal obstacles to Belgium joining the TPNW as a NATO member, politically the situation would be more difficult. In its "Analysis and Recommendations", the reflection group appointed by NATO's secretary-general in the framework of the "Forward-Looking Reflection Process" (2019) recommended that "Allies also should recall their position on the TPNW (Ban Treaty), namely that it will never contribute to practical disarmament, nor will it affect international law"[170].

Finally, it is important to note that none of the existing international conventions governing nuclear weapons explicitly addresses or prohibits financing the development, manufacture or acquisition of such weapons by the NWSs. As such, the TPNW is the first international legally binding instrument to render unlawful the financing of *all* nuclear-weapons-related activity. The prohibition on proliferation financing is not expressly mentioned in the treaty but, as a matter of interpretation, it is prohibited as long as it constitutes an "assistance, encouragement or inducement" of a prohibited activity - commonly referred to as the "complicity regime" under the customary law of state responsibility[171]. Indeed, with regard to Belgium, the country is already engaged in combating proliferation financing. On 18 September 2017[172] it adopted a law concerning the prevention of money laundering and terrorist financing and limiting the use of cash, which includes the financing of WMD proliferation. Additionally, it has established an intelligence and security coordination committee, which has in its scope the coordination of the fight against proliferation financing[173]. Furthermore, it makes use of the 40 recommendations of the Financial Action Task Force (FATF)[174], which include measures to counter proliferation financing. However, the most recent FATF report on Belgium's implementation of its recommendations indicated only partial compliance in the Belgian mechanism of applying targeted financial sanctions against proliferation financing without delay[175].

In light of the above, adherence to the TPNW would prevent Belgian economic (including financial) actors from maintaining ties (e.g. transactions or partnerships) with entities that could be involved to any degree with nuclear-weapons-related activities, even the NWSs. This would be a departure from previous international law, which thus far has allowed such activities.

2.5.3 Prospective views from other countries

The TPNW has fuelled long debates at the international level since its adoption. Several national reviews of the relevance of the treaty in the national policy context have been produced, each having specific and often different approaches and scopes. However, they are all certainly vocal about the different national perspectives and interpretations of the treaty as well as their respective views on joining it. The national reviews of Germany, Ireland, the Netherlands, Sweden, Switzerland and the United Kingdom can be analysed along three main axes: the relationship between the TPNW and other instruments of international law, notably the NPT; the disarmament verification and safeguards methods set out in the TPNW; and cooperation with the NWSs – either through assistance or as a NATO member[176].

The national reviews greatly differ in assessing the impacts of the TPNW on international law as well as on the global disarmament process. Differences also exist regarding how the relationship between the TPNW and other existing legal instruments is perceived. For example, Article 18 of the treaty is understood differently by different states. The German review, for instance, questions the "incompatibility" that could exist between the TPNW and the NPT, and concludes that the two instruments are legally compatible. The review conducted in Norway concludes in the same way. The Irish document appears to identify a positive relationship between the treaties, viewing the TPNW as reinforcing the NPT.

Concerning the verification methods set out by the TPNW, various arguments are brought forward. On the one hand, some argue that the TPNW is problematic because it lacks a precise verification mechanism, while, on the other hand, others interpret this as a deliberate feature of the treaty, suggesting that the formulation was kept "simple" because of the difficulty of negotiating it in international forums[177]. Finally, with regard to (political and military) cooperation with the NWSs, the related article of the TPNW – subject to interpretation – is Article 1(1)(e), which extends the prohibition to "assistance" in prohibited activities. In this respect, the Dutch review underlines the lack of a definition and the necessity of producing one. The Swiss review points out that cooperation with NATO is not affected, except in relation to the restriction on cooperating in nuclear-related activities.

Although the national reviews explore similar sets of arguments, the global positions they suggest vis-à-vis accession to the TPNW by these countries differ. Germany[I] seems to renounce the possibility of ratifying the TPNW mainly because of the inconsistency that exists between NATO's nuclear sharing policy and the treaty[178]. The review published by Ireland states that the TPNW, from a national perspective, represents considerable success for the diplomats involved in the negotiation of the treaty as it highlights Ireland's role in promoting humanitarian considerations[179]. The Dutch document points out that the Netherlands was the only NATO country to take part in the negotiations, but it does not

I Germany hosts US nuclear weapons within its territory, as Belgium is also reputed to do.

consider the result to be satisfactory since the treaty does not sufficiently meet the five criteria set out in advance.[I]

The Norwegian review recognises the country's NATO membership as the cornerstone of its security and defence policy. Consequently, it maintains that ratifying the treaty would undermine the unity of the Alliance. In light of this – and considering other critical points, such as the weakness of the safeguards provisions and the fact that the negotiations were held outside the framework of the NPT[180] – the Norwegian government's view is that Norway should not join the TPNW. Concerning Sweden, the national document states that the country should neither accede to nor sign the treaty in its present form. The main reason given is that the TPNW would not only undermine the NPT but also directly influence states allied or cooperating with the NWSs because of its far-reaching prohibitions[181]. The document states that the international community should rather focus on existing international commitments.

Switzerland seems to be willing to play the conciliator's role between the NWSs and the NNWSs. Although the treaty does not contradict Swiss national interests – such as in trade, industry, energy and research – the review does not deem it appropriate for the country to join the treaty at present. Indeed, it suggests that the arguments against accession to the TPNW outweigh the potential benefits[182]. Nevertheless, the document recommends that the country should attend the first meetings of states parties as an observer. This would give it the chance to re-evaluate its positions concerning the treaty after the first review conference.

The United Kingdom is not in favour of acceding to the treaty; instead, it favours a negotiated, step-by-step approach gradually leading to multilateral disarmament[183]. The P5 – consisting of China, France, Russia, the United Kingdom and the United States – joint statement on the TPNW argues that the treaty fails to address some of the key issues related to the objective of reaching global nuclear disarmament. It further states that the treaty contradicts and may undermine the NPT, and consequently states that "we will not support, sign or ratify this Treaty. The TPNW will not be binding on our countries."[184]

2.5.4 Flanders' capacity for action

This section provides answers to the following research question: "What are the possibilities for the Flemish government to contribute to nuclear disarmament?"

Concerning nuclear non-proliferation and disarmament, Flanders has limited legal leeway, in principle. The authority to sign and adhere to an international treaty on nuclear disarmament and non-proliferation belongs exclusively to the federal government.

I According to these criteria, the new instrument (1) should represent a good and effective step towards the total elimination of nuclear weapons; (2) should be in good relation to other existing instruments, notably the Non-Proliferation Treaty; (3) must also be supported by nuclear-weapons-owning countries; (4) must be verifiable; and (5) must be compatible with NATO's obligations as an Ally. See Adviesraad Internationale Vraagstukken, *Advies 109: kernwapens in een nieuwe geopolitieke werkelijkheid hoog tijd voor nieuwe wapenbeheersingsinitiatieven* (29 January 2019), https://www.adviesraadinternationalevraagstukken.nl/documenten/publicaties/2019/01/29/kernwapens-in-een-nieuwe-geopolitieke-werkelijkheid.

However, the Flemish regional authorities can undertake actions to achieve any objectives they set for the region. Additionally, the Flemish authorities can exercise pressure on the federal authorities through parliamentary resolutions urging the latter to take a more prominent role in nuclear disarmament (see specific actions for specific situations in chapter 4).

The only legal competence that Flanders has in this area is related to the issuing of authorisation for foreign transfers of nuclear-related dual-use items. However, the Flemish Region may have leeway in terms of curbing the partnerships, business involvement and financing entities involved in military programmes. In fact, among the areas in which the Flemish Parliament has legal authority, the economy can be used as an important lever[185]. Specifically, the Flemish Parliament can make decisions regarding, inter alia, the support given to companies and permits for trading establishments. It could, therefore, use its authority to ensure positive ethical compliance with regard to nuclear disarmament and non-proliferation.

Finally, Flanders may influence the course of events by actively supporting scientific research and taking action to promote a culture of regional and national nuclear non-proliferation and disarmament. For instance, it could disseminate information in this regard (including concerning its own position on the matter), commission studies, engage in educational partnership programmes, or explore synergies between countries or local entities facing the same challenges. It could also make use of its capacity to participate in civil society activities (e.g. the ICAN Cities Appeal) and, more globally, act for more transparency in the implementation of the public policies within its remit and, indirectly, also in those of other entities in this specific area.

2.5.5 Scenarios of nuclear (non-)proliferation and disarmament

Several scenarios relating to nuclear (non-)proliferation and disarmament can be elaborated based on the various elements in this study: the situational analysis of nuclear weapons today, the doctrinal interpretations of the role of these weapons in international security, the legal, economical, strategic, and societal factors impacting on the policy regarding nuclear weapons, the opinions of major stakeholders (collected and reported on in the previous sections), and the cross-analysis of these factors, notably on the scale of Belgium and Flanders.

Two main trends seem to naturally emerge from the global context described throughout the previous sections. Based on the observations made regarding the interactions between the various realities and interests described, they are likely to be realised as the natural results of international developments. They consist of either an evolution of the political situation towards more proliferation of nuclear weapons or the non-evolution of the situation (i.e. the status quo). These two trends, therefore, may serve as the foundations for two different scenarios (described hereafter) to which Belgium and Flanders could be called to react and concerning which they could be required to select from a set of options.

In terms of the first scenario, due to the recent negative developments in international security, it is impossible to avoid considering proliferation as a possible future. This possibility is also supported by political statements and experts' interpretations. This proliferation trend could be quantitative, as countries have already made public that they might expand their arsenals or increase the proportion of their weapons that are operationally deployable. It could also be qualitative, as many of the nuclear-weapons-possessing countries are already engaged in processes for modernising their nuclear military capacities. Alternatively, it could be both quantitative and qualitative. Based on a strict reading of the international law, despite the fact that the NWSs should be moving towards disarmament, they may legally pursue either of these courses of action. From a defence strategic point of view, the nuclear-weapons-possessing states may even wish to do so. This scenario, therefore, is not only legitimate as a starting point for defining Belgium's and Flanders' options – it must also be considered likely to realise.

In terms of the second scenario, it may also be legitimate to consider that the situation might not evolve either positively nor negatively. Many of the experts interviewed had views that corresponded with the continuation of the status quo in terms of (non-)proliferation and disarmament. These interviewees did not see the TPNW as an effective game-changer or think that the polarisation of positions at the 2015 NPT RevCon was unavoidable, as (un)satisfactory as seeing the TPNW as game-changer can be for all stakeholders (such as governments and civil society). This scenario is also likely, therefore. However, it would not prevent the stakeholders acting towards objectives they defined for themselves or together in order to "move the lines". Therefore, the status quo scenario offers an option where a stakeholder could take note of the inertia of the nuclear players at the international level and decide to remedy to it to a minimal extent.

In addition to these two (de- or non-) evolution-driven scenarios, policy-driven options can also be defined that suppose that political initiatives are taken to challenge the natural evolutions presented above, if these are considered unsatisfactory in respect of the non-proliferation and/or disarmament objectives set by decision-makers. These options, presumably, would emerge from the desire to move towards effective disarmament that is shared by several categories of stakeholders, as raised throughout this chapter. This global policy-driven scenario, which contains three options (see 3.1), corresponds to the expectations expressed by civil society, especially in Belgium, and the current international legal framework offers the possibility of pursuing these expectations. However, it may come up against the obstacle of adverse defence strategic interests. It is, therefore, likely to be realised only if effective "coalitions of the willing" are met.

Depending on the level of disarmament that is targeted, these three options could be developed, although they would be objectively less and less likely to be realised as the number of engaged stakeholders grew. One option would be for Belgium, through a coalition of the willing of its government and civil society, to act unilaterally to enhance its own nuclear disarmament. This course of action would be based on the assumption that Belgium would be ready to act individually or in parallel with some of the other states of the Alliance, although it currently seems to be the case that no consensus can be reached on disarmament at NATO.

A second option would be for the NATO countries to renounce the nuclear aspect of the Alliance, which supposes that a representative group of member countries or all of them would decide to act jointly. This option would be motivated by a search for an adequate balance between the two main factors analysed in this chapter (i.e. the aspirations of society and the reality of the defence strategy of a country such as Belgium).

A third option would be for disarmament to become (as close as possible to) a universal objective towards which all international powers would work. This option is strongly driven by the societal expectations highlighted in the course of the analysis presented in this chapter.

3 Options and actions for enhancing nuclear disarmament for Belgium and Flanders and their pros, cons and costs

This chapter elaborates on the options available to Belgium and Flanders for acting towards non-proliferation and disarmament if any of the scenarios – either natural or policy-driven – defined in the previous chapter were realised. It forms a prospective analysis of the conclusions drawn from the desk review and the interviews.
It provides answers to the following research questions:

- What policy options does the Belgian government have with regard to nuclear disarmament?
- What are the pros and cons of each of these options?
- What are the possibilities for the Flemish government to contribute to nuclear disarmament?

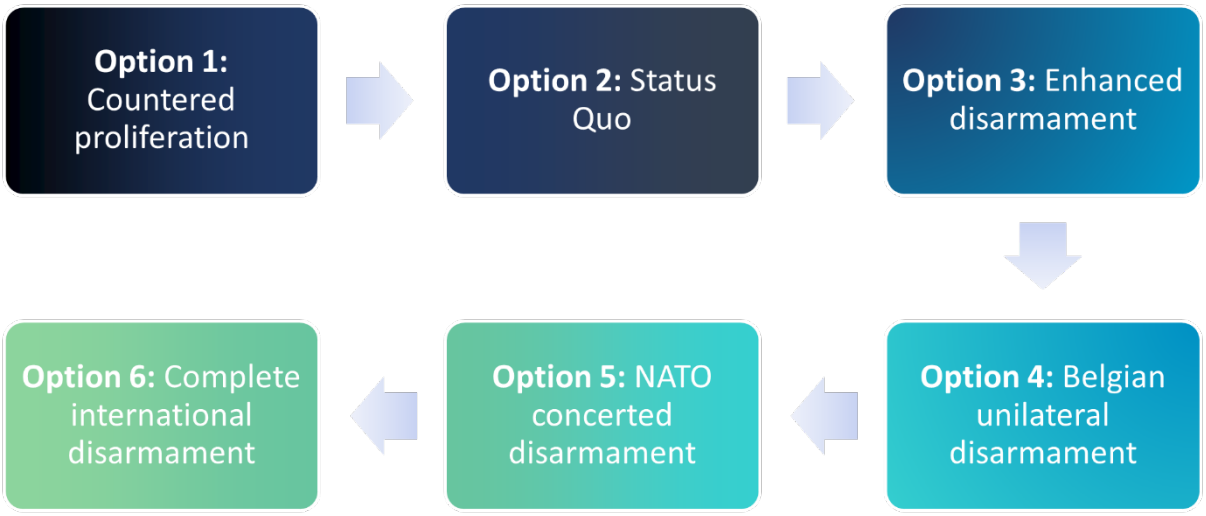
3.1 Options identified and situation on a "disarmament scale"

The following sections propose six options based on the scenarios presented in the previous chapter. The scenarios assume that the Belgian national and international contexts will evolve either towards increased proliferation (at one extremity) or more disarmament (at the other)[I]. The six options can therefore be visualised on a "disarmament scale", as shown in Figure 5.
Each option corresponds with one set of arguments (sometimes with two variants) that provides decision-makers with rationales, objectives, and propositions for action at the federal and regional levels. The formalisation of the findings of the present study into

[I] As indicated in the previous chapter, all these (sub)scenarios are likely to be realised, but with different degrees of likelihood.

options is intended to allow decision-makers to use the report to gradually adjust the level of ambition of their actions in favour of nuclear non-proliferation and disarmament while considering all parameters as well as acceptability and feasibility.

Figure 5: Options on the disarmament scale



The options are ranked according to the progress they represent towards nuclear disarmament: increased proliferation, accepting the current situation, promoting (and participating in) instruments that contribute to the progress of disarmament, Belgian unilateral disarmament, concerted disarmament and, finally, a world free of nuclear weapons. Each option is fully developed and explained in subsections corresponding to the rationale for the option, its objective, the actions that could be taken to implement the option, the impacts of the option, its pros and cons, and its feasibility and acceptability.

3.2 Option 1: Countered proliferation

3.2.1 Rationale

This option is based on the first scenario (section 2.5.5). It corresponds to a proliferation trend that would be caused by the individual actions of the five nuclear-weapon states (NWSs) – such as an increase in their nuclear weapons arsenals or a qualitative leap in the modernisation of their arsenals – or the non-nuclear-weapon states (NNWSs). In this scenario, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) would be considered the cornerstone of non-proliferation by both the NNWSs and the NWSs. However, the NWSs, despite their obligations in accordance with Article VI, would legally have the option to increase their existing nuclear military capacities or to modernise their arsenals (in terms of number of warheads, deployment of tactical nuclear weapons,

maintenance of arsenals, modernisation of capabilities etc.). In fact, some NWSs, such as the United Kingdom[186], have recently expressed intentions to use this option.
The likelihood of this scenario occurring is therefore high. This creates a contradictory situation at a time when nuclear disarmament is under strain and the Treaty on the Prohibition of Nuclear Weapons (TPNW) has already entered into force. As a result, the logic of "polarisation" may become more prominent.

3.2.2 Objective

The objective of this option would be to deter and contain the proliferation of nuclear weapons caused by some international actors by means of diplomacy. The challenges caused by such actions towards quantitative or qualitative proliferation in respect of the provisions of Article VI of the NPT should be addressed during the 2022 NPT Review Conference (RevCon), within the North Atlantic Treaty Organisation (NATO) and within the European Union.

3.2.3 Actions

At the federal level

Taking into account all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- propose (Foreign Affairs) to insert a discussion on the conformity of the scenario on which option 1 is based with Article VI of the NPT during the 2022 NPT RevCon and to include concerns about proliferation on the agenda;
- propose (Foreign Affairs and Defence) the elaboration by NATO of a strategic document (at the 2022 Summit) on the implementation of Article VI of the NPT in the context of the ongoing redefinition of NATO's 2010 Strategic Concept[187];
- promote the safeguards of the International Atomic Energy Agency (IAEA) and engage in consultations to assess the need to adapt the IAEA's instruments (e.g. verification resources) and the safeguards to the current situation;
- increase awareness of emerging technologies as a challenge for non-proliferation and the need to control them through updated and robust safeguards, including verification measures;
- within the 2022 NPT RevCon and the European Union (Council of Ministers), engage in seeking a common EU decision on greater nuclear transparency (greater transparency on national nuclear arsenals would contribute to more confidence and might cause NWSs to refrain from increasing their arsenals);

- communicate (federal government) in a transparent way about the numbers of nuclear weapons within Belgian territory and the protection measures related to them.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

- adopt (Flemish Parliament) a resolution promoting the need for Belgium to address the concerns raised by the potential realisation of this scenario at the 2022 NPT RevCon, within the European Union and in the process of redefining the NATO Strategic Concept;
- engage in actions to disseminate – to civil society and via the media – the position of the Flemish institutions with regard to this option and the steps to be taken;
- adopt a resolution urging the federal government to be transparent about the nuclear weapons purportedly within Belgian territory and to engage in promoting transparency at the international level;
- conduct continued research and raise awareness on actual and future trends in nuclear weapons proliferation.

3.2.4 Impacts

From a legal standpoint, option 1 would not comply with international law or Belgium's obligations in relation to non-proliferation and disarmament, most notably the spirit of Article VI of the NPT or the related commitments that Belgium has undertaken to date. This scenario is indeed contrary to the spirit of Article VI of the NPT in terms of how it would relate to the NWSs, and it would contradict the obligations of the NNWSs vis-à-vis the NPT.
This option would challenge the national defence interests of Belgium, as the proliferation trend would bring only more international insecurity and instability, thus questioning the current strategic interests of the country.
From the economic perspective, this option is in line with the current obligations of economic operators in Belgium and Flanders. In fact, the proliferation of nuclear weapons would increase the risk of diversion of legitimate trade towards unverifiable end uses. Consequently, in a scenario of enhanced proliferation, there would be a need to increase investment in the compliance sectors and related services, by both private and public entities.
Finally, this option would not comply with the current expectations of civil society. Belgian public opinion is reportedly against the proliferation trend in nuclear weapons and in favour of complete disarmament (see section 2.4.1).

3.2.5 Pros

There is a high likelihood that the scenario on which this option is based will occur. The international situation – notably including Brexit, opposition between the "great powers"

and the modernisation of conventional capacities – is creating incentives for the NWSs to enhance their nuclear weapons capabilities. In parallel, the NNWSs are expressing their concern about the lack of commitment of the NWSs towards disarmament, as foreseen by Article VI of the NPT. Therefore, a polarisation between the expectations of the NNWSs and the strategies effectively adopted by the NWSs can be observed.
Belgium, as an international actor and active player within the United Nations, NATO and the European Union, as well as an ally of some of the major NWSs, could play a diplomatic role as an intermediary between the parties.

3.2.6 Cons

Belgium's position as a country that purportedly hosts nuclear weapons and its commitment to NATO as a nuclear alliance would be constraints in it playing the role of intermediary between the "poles".
Whether the topic is discussed at the 2022 NPT RevCon will depend on the willingness of all parties to include it on the agenda. This possibility may be challenged by some of the NWSs.

3.2.7 Feasibility and acceptability

In option 1, Belgium and Flanders, to a certain extent, would react to the realisation of the scenario to contain and mitigate the risks of a negative evolution in non-proliferation. They would be expected to play a diplomatic role. This option would be feasible as long as it mainly consisted of promoting and engaging in dialogues with authorities and other governments in international forums; it could not in any way affect Belgium's compliance with international legal and political commitments. Actions such as participating directly in review conferences by proposing items for the agenda (at the federal level) or putting political pressure on the federal government (at the regional level) could be implemented without negative consequences.
The efficiency of these actions is difficult to assess as they would highlight the strengths and weaknesses of the weight of Belgium in the international community. However, this option would clearly not meet civil society's expectations and demands for nuclear disarmament and would not meet the federal Government Agreement's commitments with regard to nuclear disarmament. The acceptability of the option, therefore, would be low.

3.3 Option 2: Status quo

3.3.1 Rationale

Option 2 is based on the second scenario (section 2.5.5). This scenario takes note of the current polarisation in the non-proliferation and disarmament debate between promoters of disarmament and nuclear-weapons-possessing states, while maintaining the commitment to continuously promoting the NPT in that debate.

As in option 1, in option 2 the NPT would be considered the cornerstone of non-proliferation by both the NNWSs and the NWSs. However, the NWSs would not demonstrate strong willingness to act towards disarmament, as provided for in Article VI of the NPT. Some of the NNWSs would hence opt to adhere to the TPNW in order to establish nuclear disarmament as a norm of international law. The NWSs would not consider the TPNW as a universal norm.
The polarisation of the positions, consequently, would challenge diplomatic discussions on the implementation of the NPT at the 2022 NPT RevCon.

3.3.2 Objective

The objective of this option would be to create a diplomatic environment capable of deterring proliferation and encouraging the international community to comply with the NPT's disarmament obligations.
Even without acceding to the TPNW, Belgium and Flanders could play a role as bridge builders between "supporters" of the NPT and the TPNW. In this way, they could contribute to softening the polarisation.

3.3.3 Actions

At the federal level

Taking into account all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- continuously promote (Foreign Affairs) the NPT as the cornerstone of non-proliferation and disarmament of nuclear weapons and encourage all states to act towards its universalisation;
- implement the federal Government Agreement by investigating, from the federal government's perspective, how the TPNW could give new momentum to multilateral disarmament;
- further engage in working groups where Belgium is already active, such as the International Partnership for Nuclear Disarmament Verification (IPNDV);
- constructively engage with the TPNW stakeholders, notably in attending a Conference of the States Parties (CSP) as an observer – this would be similar to action already taken by the Netherlands and would build on the precedent set by that country;
- engage in debate within the NATO Parliamentary Assembly on the state of play of nuclear disarmament and the way ahead.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

- continuously promote (Flemish Parliament and research institutes) the NPT and all other initiatives aimed at enhancing non-proliferation and the effective disarmament of nuclear weapons;
- adopt a resolution asking the federal government to implement the Government Agreement and to investigate how the TPNW could give new momentum to multilateral disarmament;
- create an environment in which there is better geopolitical understanding of the world and (nuclear) actors through education (e.g. on Russian and Chinese politics) and student exchanges.

3.3.4 Impacts

Option 2 would comply with the legal provisions of the NPT as well as with the general legal framework related to nuclear weapons. The NWSs, however, would need to engage in achieving the objectives set by the NPT, among which there would be the obligation to negotiate in good faith towards effective disarmament.
From a defence strategic point of view, this option would not have adverse consequences for Belgium as long as it preserved the country's strategic commitments in terms of security with its allies.
With regard to economic consequences, there would be none as long as this option were implemented in such a way as to be fully compatible with the international obligations that Belgium and Flanders already implement via their economic actors.
Finally, the only area where this option would not be compliant is civil society. Adverse consequences would be expected, as this option would not respect or take into account societal demands, since Belgian public opinion is in favour of complete disarmament.

3.3.5 Pros

The NPT has been implemented by almost all states and has shown its relevance and efficiency as a legal norm. The NPT RevCons are important events during which the NPT states parties reach compromises on the good practices of implementing the treaty.
Belgium, as an active international player at the United Nations, NATO and the European Union, and an ally of the major NWSs, could legitimately play the diplomatic role of intermediary between the "polarised" parties.

3.3.6 Cons

The NPT is not universal since some nuclear-weapons-possessing states (e.g. India, Israel and Pakistan) have developed programmes outside the treaty. Additionally, the TPNW is not recognised as a valid international legal norm by many states, including all the NWSs and the nuclear-weapons-possessing states.

An enhanced bridge-building role for Belgium between the parties – which would involve accepting the status quo in the NPT – could give the wrong message to civil society and the population, who are calling for complete disarmament.

3.3.7 Feasibility and acceptability

Since this option would consist mainly of managing the status quo, the actions it foresees can principally be considered as "business as usual". The option does not involve great complexity and is, in this respect, feasible. It raises no risks regarding Belgium's legal and political commitments in the international context. Belgium is already active in "supporting" initiatives framed by the NPT, such as the IPNDV, and could enhance its involvement in these.
This option would also communicate positive attitudes towards the TPNW, giving a prudent though positive signal to civil society without committing to the treaty and so isolating Belgium at NATO. However, since civil society has expressed expectations vis-à-vis an effective move towards disarmament, this option would only partially be acceptable.

3.4 Option 3: Enhanced disarmament

3.4.1 Rationale

This option would make optimal use of the existing framework of action (i.e. conventions and other instruments) to advocate in favour of and effectively enhance disarmament. In the second scenario (section 2.5.5), on which this option is based, the NPT would be considered the cornerstone of non-proliferation and disarmament efforts by most international – governmental and non-governmental – actors. While there would not have been progress in the implementation of the disarmament obligation, other relevant initiatives would have been launched. Belgium would participate in these and be able to use them to enhance disarmament.

3.4.2 Objective

The objective of this option would be to create an environment that could limit proliferation and encourage the international community to comply with the NPT's disarmament obligations.

3.4.3 Actions

At the federal level

Taking into account all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- propose (Foreign Affairs) to insert a discussion on the implementation of Article VI of the NPT during the 2022 NPT RevCon;
- actively engage in the (existing) initiatives developed within the NPT framework, such as risk-reduction measures, negotiations on the Fissile Material Cut-off Treaty (FMCT), no-first-use policies and the IPNDV;
- propose (Foreign Affairs and Defence) the elaboration at NATO of a strategic document on the implementation of Article VI of the NPT in the context of the ongoing redefinition of the NATO Strategic Concept (most likely to take place during the 2022 Summit);
- more generally, promote the reduction of the importance of nuclear weapons in NATO's strategy in all relevant forums – that is, the North Atlantic Council (NAC)[I], the Nuclear Planning Group (NPG)[II] and the Parliamentary Assembly;
- propose (Foreign Affairs) that Belgium attends the first CSP of the TPNW as an observer (in 2022) and engages constructively with the TPNW stakeholders;
- consider introducing legislation prohibiting the transfer of nuclear(-related) items to nuclear military programmes;
- communicate in a transparent way about the nuclear weapons purportedly within Belgian territory;
- engage in outreach within the European Union (such as with the Council of Ministers) on the importance of moving towards nuclear disarmament by:
    - engaging in the development of a more nuanced position on the TPNW (i.e. areas of agreement with the NPT and issues for further clarification);
    - proposing nuclear-risk-reduction efforts;
    - investigating with the European External Action Service whether the implementation of the TPNW would prejudice the implementation of the obligations under the NPT;
- provide tangible support for ongoing work on the verification of nuclear disarmament.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

I The NAC is the principal political decision-making body at NATO. Each member country has a seat at the NAC. At the level of heads of state and governments, it establishes the key principles of NATO's nuclear policy.

II The NPG is responsible for the implementation of NATO's nuclear policy. The NPG provides the forum for consultation on all issues that relate to NATO's nuclear deterrence. All Allies, with the exception of France, are members of the NPG.

- adopt (Flemish Parliament) a resolution promoting the need for Belgium to attend the first CSP of the TPNW as an observer and to contribute to the process of redefining the NATO Strategic Concept to include disarmament considerations;
- engage (Flemish Parliament and research institutes) in actions to disseminate – to civil society and via the media – the position of the Flemish institutions with regard to this option and the steps taken;
- consider adopting regional legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- adopt a resolution urging the federal government to be transparent about the nuclear weapons purportedly hosted within Belgian territory and to promote transparency at the international level;
- conduct studies on the TPNW based on broad input from national and regional expert communities and civil society;
- among Flemish cities, promote the pledge of the International Campaign to Abolish Nuclear Weapons (ICAN) Cities Appeal, which can be made without the country being a state party of the TPNW.

3.4.4 Impacts

Option 3 relies on the effective implementation of Article VI of the NPT. Therefore, Belgium and Flanders are already compliant from a legal point of view.
It appears that this option would be compatible with Belgium's current strategic commitments in terms of security with its allies since the option would aim to ensure a diplomatic environment capable of countering nuclear proliferation and effectively engaging in disarmament.
In economic terms, there would be no consequences as this option is fully compatible with the international obligations that Belgium and Flanders already implement via their economic actors.
Finally, this option would partially take into consideration public opinion, since the Belgian population is in favour of complete disarmament.

3.4.5 Pros

The NPT would be fully implemented if the actions were concretely engaged towards disarmament, independently from how these actions were taken. The implementation of Article VI in various forms would contribute to "depolarising" the opposition between the NWSs and the NNWSs and, thereby, sustain the commitment of all NNWSs to comply with the principles set out by the NPT. It would be a positive step towards reconciling the positions of civil society organisations (such as those that originated the TPNW) and the nuclear-weapons-possessing states.
The first CSP of the TPNW will allow states to attend as observers without formally committing to accede to the treaty. It would therefore be fully legitimate for Belgium to attend the event.

3.4.6 Cons

In this option, Belgium's position as a country that purportedly hosts nuclear weapons and its commitment to NATO as a nuclear alliance would be political constraints on it playing the role of intermediary between the "poles".
Whether there is a discussion of the topic at the 2022 NPT RevCon will depend on the willingness of all parties to include it as a point on the agenda of the conference, and this may be challenged by some of the NWSs. Notably, as a country that purportedly hosts nuclear weapons, Belgium will be expected to demonstrate full compliance with the commitment expressed towards refusing nuclear weapons on its territory if it participates in the first CSP of the TPNW.

3.4.7 Feasibility and acceptability

This option would be feasible from both the legal and the political points of view. It would reconfirm Belgium's international commitments and would not hamper its position at NATO. Participation in the first CSP of the TPNW would send a signal to civil society of goodwill towards the objectives of the treaty without – formally or urgently – committing Belgium to acceding to it.
The promotion in the various international forums (NATO, the European Union and the NPT) of moves towards nuclear disarmament would give Belgium a de facto role as a bridge builder between the NPT and TPNW parties. This would also be welcomed by civil society. However, Belgium's commitment to NATO's nuclear policy, which currently cannot seriously be challenged, could have an impact on the country's credibility in this role. Any outreach within NATO, considering the Alliance's position vis-à-vis the TPNW, would require Belgium to seek a coalition of the willing within the organisation in order to avoid political isolation.
Finally, engaging in transparency regarding the nuclear weapons purportedly within Belgian territory would facilitate a societal debate – called for by civil society – on Belgium's role in and dependence on NATO's nuclear policy. In this respect, the option would be acceptable.

3.5 Option 4: Belgian unilateral disarmament

3.5.1 Rationale

In the third scenario, on which this option is based (section 2.5.5), Belgium would unilaterally "disarm" by renouncing the hosting of nuclear weapons within its territory. Both the international normative framework and the demands of civil society make nuclear disarmament an objective that the Western states aim to reach. In choosing to become a nuclear-weapons-free state, Belgium would demonstrate leadership in global disarmament while remaining fully compliant with the international instruments it has ratified.

3.5.2 Objective

The objective of this option would be to prepare for and organise the repatriation of the nuclear weapons purportedly hosted within Belgian territory to their owner. A variant of this option, which could be named "variant 4A", would consist of Belgium additionally adhering to the TPNW.

3.5.3 Actions

At the federal level

On the basis of all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- propose (Foreign Affairs and Defence) to negotiate with the United States and with NATO conditions for the withdrawal of the nuclear weapons purportedly hosted within Belgian territory and, accordingly, to redefine the national defence strategy, notably in relation to investments in conventional capacities;
- propose (Foreign Affairs) that Belgium attends the first CSP of the TPNW (in 2022) as an observer;
- propose (Foreign Affairs and Defence) the elaboration at NATO of a strategic document on the implementation of Article VI of the NPT in the context of the ongoing redefinition of the NATO Strategic Concept (most likely to take place during the 2022 Summit) in all relevant forums (the NAC, the NPG and the Parliamentary Assembly);
- introduce legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- engage in outreach within the European Union (such as with the Council of Ministers) on the importance of moving towards nuclear disarmament by:
    - engaging in the development of a more nuanced position on the TPNW (i.e. areas of agreement and issues for further clarification);
    - proposing nuclear-risk-reduction efforts;
    - investigating with the European External Action Service whether the implementation of the TPNW would prejudice the implementation of the obligations under the NPT;
    - provide tangible support for ongoing work on the verification of nuclear disarmament;
- effectively increase the national defence budget in order to comply with Belgium's engagements with NATO and more strongly position the country as a bridge builder;

- (variant 4A): Since Belgium would be compliant with its legal disarmament obligations, it could consider acceding to the TPNW.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

- adopt (Flemish Parliament) a resolution promoting the need for Belgium to negotiate the withdrawal of the nuclear weapons purportedly hosted within its territory and proposing that Belgium attends the first CSP of the TPNW as an observer;
- adopt (Flemish Parliament) a resolution promoting the need for Belgium to contribute to the process of redefining the NATO Strategic Concept to include disarmament considerations;
- engage (Flemish Parliament and research institutes) in actions to disseminate – to civil society and via the media – the position of the Flemish institutions with regard to this option and the steps taken;
- adopt a resolution urging the federal government to be transparent about the nuclear weapons purportedly hosted within Belgian territory and to promote transparency at the international level;
- introduce regional legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- conduct studies on the TPNW based on broad input from national and regional expert communities and civil society;
- among Flemish cities, promote the pledge of the ICAN Cities Appeal, which can be made without the country being a state party of the TPNW;
- variant 4A: adopt (Flemish Parliament) a resolution encouraging the federal government to proceed with Belgium's accession to the TPNW.

3.5.4 Impacts

From the legal point of view, option 4 would comply with Belgium's current commitments. Indeed, unilateral disarmament would comply with the provisions of both the NPT (Article VI) and the TPNW (in the case of variant 4A).
However, from a defence strategic point of view, option 4 would be in contravention of the current NATO (nuclear) doctrine. Additionally, Belgium would be acting to the detriment of its arrangements with the United States, on which its own defence posture heavily relies. Hence, a review of the national defence strategy would be necessary, with this occurring at least as early as the first steps taken towards this option.

The economic sector is already implementing Belgium's international obligations with regard to the non-proliferation of nuclear weapons. However, variant 4A would prohibit economic activities with entities involved in nuclear weapons programmes (such activities are allowed under the NPT). The variant option would also have consequences for the financial sector. The sector's actions to promote sustainable investment would become legal obligations and would no longer be voluntary.
If option 4 were selected, Belgium and Flanders would only partially meet the demands of public opinion, since 77% of the population is in favour of Belgium joining the TPNW (see section 2.4.1). Selecting variant 4A would entirely meet these demands.

3.5.5 Pros

Belgium has already fully implemented the NPT since its purported hosting of nuclear weapons is not considered "control" over those weapons (as defined by the provisions of the NPT).
The first CSP of the TPNW will allow states to be observers without committing to adherence, which will offer flexibility for Belgium. Being an observer and engaging in the process of adopting the TPNW would partially meet the demands of the Belgian population, 77% of whom have expressed a wish to join the treaty. However, formally adhering to the TPNW would fully meet this demand.

3.5.6 Cons

Belgium, if it selected this option, would need to redefine its strategic objectives and defence posture vis-à-vis its competitors but also its international partners and allies, as this option would mark the end of the country's residence under the "nuclear umbrella". Belgium would be expected, in this option, to strictly comply with its conventional capacity-building obligations within NATO, including increasing its investment in defence spending.
If Belgium selected option 4 or its variant (4A), the country's new positioning could eventually diminish its potential to play an intermediary role between the "polarised" parties. This could isolate Belgium within NATO and result in the country losing its influence on the definition of the Alliance's nuclear doctrine.

3.5.7 Feasibility and acceptability

Although option 4 would meet civil society's demands and, in this regard, be highly acceptable, its feasibility is low.
While there exist no legal constraints on Belgium selecting this option, it would be difficult to reach the necessary political consensus to implement it. Unilateral nuclear disarmament by Belgium, unless followed by similar actions by several or all of the other countries that (purportedly) host NATO's nuclear capacities, would isolate it at NATO. This, indeed, could be seen as a breach of NATO's nuclear solidarity. Implementing option 4 would also have an impact on Belgium's bilateral relations with the United States and could have economic

consequences at the national level (e.g. if Belgium renounced the new F35-A dual-capacity aircraft; see section 2.3.1).
Accession to the TPNW, which is not mandatory, would isolate Belgium even more within NATO. Generally speaking, too, unilateral actions in the diplomatic arena undermine the credibility of their authors. Such actions can backfire in various multilateral forums. Finally, Belgium would have to redefine its strategic vision, abandoning its reliance on NATO's nuclear policy and giving more importance to its conventional capacities, including by increasing its defence budget to the detriment of other public investments.

3.6 Option 5: NATO concerted disarmament

3.6.1 Rationale

In the third scenario (section 2.5.5), on which this option is based, NATO would renounce its current strategic posture as a "nuclear alliance". The international normative framework and civil society's demands make nuclear disarmament an objective that the Western states aim to reach. According to this stance, NATO should assume its responsibilities relating to nuclear disarmament and engage in implementing international nuclear disarmament instruments by renouncing its strategic nuclear policy, removing tactical nuclear weapons from host countries and (for the NWSs of the Alliance) starting to disarm.

3.6.2 Objective

The objective of this option would be to prepare for and organise the repatriation of the nuclear weapons purportedly hosted within Belgian territory to their owner and to adapt the NATO Strategic Concept to the new posture of the Allies. The NWSs of the Alliance would commit to and start realising the objectives set by Article VI of the NPT.
A variant of this option, which could be named "variant 5A", would consist of Belgium additionally adhering to the TPNW.

3.6.3 Actions

At the federal level

On the basis of all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- propose (Foreign Affairs and Defence) to negotiate with the United States the conditions of the withdrawal of the nuclear weapons purportedly hosted within Belgian territory and, accordingly, to redefine the national defence strategy, notably in relation to investment in conventional capacities;

- propose (Foreign Affairs) that Belgium attends the first CSP of the TPNW (in 2022) as an observer;
- adopt federal legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- engage in redesigning NATO's strategic documents towards the implementation of Article VI of the NPT in the context of the ongoing redefinition of the NATO Strategic Concept (most likely to take place during the 2022 Summit), in all relevant forums (i.e. the NAC, the NPG and the Parliamentary Assembly);
- increase the national defence budget in order to comply with Belgium's engagements with NATO;
- variant 5A: Since Belgium would be compliant with its legal disarmament obligations, it could consider acceding to the TPNW.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

- adopt (Flemish Parliament) a resolution proposing that Belgium attends the first CSP of the TPNW as an observer;
- adopt regional legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- contribute (Flemish Parliament and research institutes) to the elaboration of a post-nuclear NATO strategy by providing research and views;
- variant 5A: adopt (Flemish Parliament) a resolution encouraging the federal government to proceed with Belgium's accession to the TPNW.

3.6.4 Impacts

From the legal point of view, option 5 would comply with Belgium's current commitments. Indeed, NATO concerted disarmament would comply with the provisions of both the NPT (Article VI) and the TPNW (in the case of variant 5A).
However, this option would contradict the current NATO doctrine and Strategic Concept, which define NATO as a "nuclear alliance". A new doctrine and Strategic Concept would have to be worked out if the nuclear policy were abandoned.
The economic sector is already applying Belgium's international obligations with regard to the non-proliferation of nuclear weapons. However, variant 5A would prohibit economic activities with entities involved in nuclear weapons programmes (such activities are allowed under the NPT). The variant option would also have consequences for the financial

sector. The sector's actions to promote sustainable investment would become legal obligations and would no longer be voluntary.
If option 5 were selected, Belgium and Flanders would only partially meet the demands of public opinion, since 77% of the population is in favour of Belgium joining the TPNW (see section 2.4.1). Selecting variant 5A would entirely meet these demands.

3.6.5 Pros

Belgium has already fully implemented the NPT since its purported hosting of nuclear weapons is not considered "control" over those weapons (as defined by the provisions of the NPT).
The first CSP of the TPNW will allow states to be observers without committing to adherence, which will offer flexibility for Belgium. Being an observer and engaging in the process of adopting the TPNW would (partially) meet the demands of the Belgian population, 77% of whom have expressed a wish to join the treaty. Formally adhering to the TPNW would fully meet the population's demands.
If option 5 were realised, Belgium would be complying – as it does today – with NATO's (new) objectives and doctrine.

3.6.6 Cons

Belgium, if it selected this option, would need to redefine its strategic objectives and defence posture vis-à-vis its competitors but also its international partners and allies, as this option would mark the end of the country's residence under the "nuclear umbrella". Belgium would be expected, in this option, to strictly comply with its conventional capacity-building obligations within NATO, including increasing its investment in defence spending.
If Belgium selected option 5 or its variant (5A), the country's new positioning could eventually diminish its potential to play an intermediary role between the "polarised" parties. This could isolate Belgium within NATO and result in the country losing its influence on the definition of the Alliance's nuclear doctrine.

3.6.7 Feasibility and acceptability

Selecting the option of concerted nuclear disarmament by NATO would isolate Belgium less than would be the case in option 4. Indeed, option 5 would mean that all NATO Allies, and thus the Alliance itself, would move towards disarmament. NATO would renounce its nuclear posture and, subsequently, its negative view of the TPNW. However, the current geopolitical situation and NATO's position make this option unlikely to be realised. NATO's position – according to which "as long as nuclear weapons exist, NATO will remain a nuclear alliance"[188] – is perfectly clear and has repeatedly been stated.
From the legal point of view, there exist no obstacles to implementing this option, and there would be no adverse economic consequences. All the contrary, it would be accepted by civil society. However, the question of whether Belgium would join the TPNW, which

is called for by civil society, remains open. Legally it would not be mandatory but repatriating the nuclear weapons purportedly hosted within the national territory would be a prerequisite for compliance with the provisions of the treaty.

3.7 Option 6: Complete international disarmament

3.7.1 Rationale

In the third scenario (section 2.5.5), on which this option is based, disarmament would become an international and universal legal obligation. The NPT would be the cornerstone of the efforts towards complete disarmament and would be considered to be reinforced by the TPNW. The NWSs would commit to and effectively engage in banning all types of nuclear weapons from their arsenals.
However, a delay could occur between the adoption of the obligation and its effective implementation (or the adoption could simply be followed by non-compliance). During this timeframe or in these circumstances, the remaining nuclear weapons would have to be managed.

3.7.2 Objective

The objective of this option would be to prepare for and organise the repatriation of the nuclear weapons purported hosted within Belgian territory to their owner – and possibly contribute to their dismantling – while potentially adhering to the TPNW.

3.7.3 Actions

At the federal level

On the basis of all elements addressed by this study, such as the Belgian division of legal competences and Belgium's legal and political commitments and interests, the authorities at the federal level could be called on to perform one, several or all of the following actions:

- propose (Foreign Affairs and Defence) to negotiate with the United States and with NATO the conditions for the withdrawal of the nuclear weapons purported hosted within Belgian territory and, accordingly, redefine the national defence strategy, notably in relation to investment in conventional capacities;
- engage in the redesign of NATO's strategic documents towards the implementation of Article VI of the NPT in the context of the ongoing redefinition of the NATO Strategic Concept – most likely to take place during the 2022 Summit – in all relevant forums (i.e. the NAC, the NPG and the Parliamentary Assembly) and promote a robust conventional deterrence strategy within NATO;

- engage (Foreign Affairs) in diplomatic steps towards an EU decision to promote complete implementation of Article VI of the NPT and the incorporation of reference to the TPNW as a means to achieve global disarmament;
- propose (Foreign Affairs) to insert a discussion on the implementation of Article VI of the NPT during the 2022 NPT RevCon and engage diplomatically in striving for full implementation of Article VI;
- adopt legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- engage in the establishment of robust nuclear disarmament verification instruments;
- engage (Foreign Affairs) in multilateral (e.g. at the United Nations) diplomatic steps to promote the objective of complete and global disarmament through implementing Article VI of the NPT and, possibly, ratifying and implementing the TPNW;
- engage (Foreign Affairs) in bilateral (with partner countries) diplomatic steps to promote the objective of complete and global disarmament through implementing Article VI of the NPT and, possibly, ratifying and implementing the TPNW;
- sign and ratify (federal authorities) the TPNW.

At the regional level

In light of section 2.5.4, at the Flemish regional level, the authorities could be called on to perform one, several or all of the following actions:

- contribute (Flemish Parliament and research institutes) to the elaboration of an alternative "post-nuclear" NATO strategy by providing research and views;
- create an environment in which there is better geopolitical understanding of the world and (nuclear) actors through education (e.g. on Russian and Chinese politics) and student exchanges;
- engage (Flemish Parliament and research institutes) in actions to disseminate – to civil society and via the media – the position of the Flemish institutions with regard to this option and the steps taken;
- adopt regional legislation prohibiting the transfer of nuclear-related items to nuclear military programmes;
- conduct studies on the TPNW based on broad input from national and regional expert communities and civil society;
- adopt a resolution urging the federal government to proceed with Belgium's accession to the TPNW;

- among Flemish cities, promote the pledge of the ICAN Cities Appeal, which can be made without the country being a state party of the TPNW;
- amend the Flemish government decree regulating the trade of dual-use items with a view to prohibiting international transfers of dual-use items, including technology, for any programme where the end use is related to nuclear weapons.

3.7.4 Impacts

Selecting option 6 would entail radical change in the legal, defence strategic and (to a lesser extent) economic sectors.
Because, in this option, disarmament would occur within the framework of the NPT, the actual level of adherence to the TPNW would be ignored. Furthermore, Article VI of the NPT only sets out an obligation and no "practical" means of implementation is foreseen. Therefore, this option would require negotiations around the practical implementation of Article VI of the NPT, including dismantling and verification measures.
The current legal obligations of the economic actors, as they stand within the NPT, do not prevent them from conducting business with entities involved in nuclear weapons programmes in general, whereas such activities are contrary to the TPNW's provisions. Depending on which (international or national) legal norm is considered to take precedence, these obligations may be affected by the implementation of the TPNW.
The choice of this option would fully satisfy the demands of Belgium's population. Around 77% of the population want Belgium to accede to the TPNW (see section 2.4.1), but this demand is the result of a lack of progress within the NPT. The ultimate desire of the population is complete global nuclear disarmament, which could be achieved through option 6.

3.7.5 Pros

In this option, the objectives of the NPT and the TPNW would be fully and universally implemented, even for those states that are not party to the TPNW.
The option would meet the demands of Belgian public opinion.
Belgium's and NATO's strategies and defence doctrines would, as a matter of course, be adjusted to the new state of play in international security.

3.7.6 Cons

A conventional arms race could be expected in reaction to the dismantling of parts of the various countries' arsenals, and this would add to international instability.
At present, the TPNW lacks prescriptions relating to verification measures. Such measures would reassure all international actors about the levels of effective compliance with the treaty.

The economic and research actors would be prohibited from providing any form of assistance to any nuclear weapons programme, independently from the country of end-use, during the transition period between the decision to implement the option and its complete realisation.

3.7.7 Feasibility and acceptability

As it has been called for by civil society and would not have major consequences for Belgium's economic actors, this option would presumably be highly acceptable. All the experts interviewed for this study agreed that global nuclear disarmament is the desired objective of all non-proliferation and disarmament policies.
However, the conditions for implementing this option have not been met and its feasibility, therefore, is low. The current geopolitical situation is not favourable to the idea of significant steps being taken towards enhancing nuclear disarmament, and certainly not to complete, universal and legally based disarmament.

3.8 Conclusions

Although they are a now a "classical" area of research, nuclear weapons – from (non-) proliferation to disarmament – also constitute a fast-moving area of study and analysis. The current policies and recent trends observed in relation to the importance given to nuclear weapons in both positive and negative terms demonstrate that they are still – and will most probably continue to be during the coming decades – subjects of political, societal and scientific debate on the pillars and instruments of international security. This is an area where the "international community" appears as divided as it could be, and the risk is that there will be extreme polarisation of postures.

The debate on whether nuclear weapons have a role – legitimate or not – to play in international security does not seem to be as simple as a binary choice between "yes" and "no". There are not two clearly defined camps between the nuclear weapons "haves" and "have nots". However, in the globalised and security-interdependent contemporary world, nuclear weapons or their abolishment are a horizontal challenge. The (potential) recourse to nuclear weapons as an instrument of international security by a state obliges the other states to position themselves politically – from the search for an "umbrella" to the opposition to this choice – vis-à-vis this state, even within an alliance such as NATO or a regional integrative organisation such as the European Union. The goal of a nuclear-weapon-free world as either an objective or a legal obligation supposes that each state will effectively take responsibility for that goal's implementation and enforcement, for itself and concerning the other states. The decision to accept or deny the right of others to pursue nuclear weapons programmes, in this regard, may bear economic and competitive consequences for the national actors themselves. Not least, the decisions that a state is called to take as a consequence of the actions of other states engage the political

responsibility – and potentially the legal liability too – of a government vis-à-vis its civil society.

Belgium, comprising both federal and regional levels, is a particularly illustrative case of the dilemmas that a state can face in relation to nuclear weapons doctrine, especially in a context where civil society is a recognised independent actor in international relations. Belgium and Flanders, therefore, beyond the mere choice of positioning themselves on a scale extending from "more proliferation" to "complete and universal disarmament", have to consider all these factors and expectations when defining their concrete steps in one or the other direction.

The present study identifies six options for Belgium and Flanders to undertake within their respective areas of competence while pursuing the objective of fighting against the proliferation of nuclear weapons.

Option 1, which is based on a scenario of enhanced proliferation caused by other states, consists of deterring and containing this trend via diplomacy in addressing the challenges they pose. Although the federal government would be called on to play a decisive diplomatic role in this option, the Flemish Parliament could make use of its authority to promote solutions and communicate with civil society.

Option 2 is based on a status quo scenario with regard to polarisation in the non-proliferation and disarmament debate between promoters of disarmament and nuclear-weapons-possessing states. It also assumes the continuous commitment of the actors at play to promote the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in such a debate. It consists of creating a diplomatic environment prone to deterring proliferation and encouraging the international community to comply with the disarmament obligations under the NPT. Belgium would be, in such an option, a "bridge builder" between the NPT and supporters of the Treaty on the Prohibition of Nuclear Weapons (TPNW), and thereby would contribute to softening the current polarisation. Here again, although the federal government would be called upon to play a decisive diplomatic role in this option, the Flemish Parliament could make use of its competences as a facilitator of civil society's ability to play its role in the international community.

Option 3 is based on a scenario in which Belgium actively advocates in favour of disarmament and works to effectively enhance it, while making optimal use of the existing framework of action. The objectives pursued by Belgium and Flanders would be to create an environment prone to limiting proliferation and to encourage the international community to comply with the NPT's disarmament obligations. The federal government would be called on to engage in intensive diplomatic activity, and the Flemish Parliament could make use of its competences in working with civil society towards this objective.

Option 4 is based on a scenario where Belgium would decide voluntarily and unilaterally to renounce the hosting of nuclear weapons (purportedly) present within its territory. The objective of this option would be to prepare for and organise the repatriation of nuclear weapons hosted within Belgian territory to their owner. An extension of this option could be for Belgium to additionally decide to adhere to the TPNW. Although the federal government would be called on to play the frontline role, the Flemish Parliament could be a driving force in the new definition of the defence posture of Belgium.

Option 5 is based on a scenario where NATO would renounce its current strategic posture as a "nuclear alliance". The objectives pursued in accordance with this option would be to prepare for and organise the repatriation of the nuclear weapons (purportedly) hosted within Belgian territory to their owner, and to consequently contribute to adapting the NATO Strategic Concept to the new posture of the Allies. An extension of this option could be for Belgium to additionally decide to adhere to the TPNW. For both the federal government and the Flemish Parliament, subsequent actions would mainly consist of contributing to the definition of a new security and defence posture for the country in a reshaped international environment.

Option 6 is based on a scenario where disarmament becomes an international and universal legal obligation in reference to both the TPNW and NPT, although it might be that not all states are compliant at this stage. The objective for Belgium would be to prepare for and organise the repatriation of the nuclear weapons (purportedly) hosted within Belgian territory to their owner, while possibly adhering to the TPNW. Both the federal government and the Flemish Region would be involved in the redefinition of the international security environment and adjacent defence policy. However, the Flemish government would be specifically requested to amend its policy regulating the trade of dual-use items in accordance with the TPNW.

The definition of these six options is based on several factors: an analysis of the trends in (non-)proliferation, the objective of fighting against the proliferation of nuclear weapons, the potential impacts on Belgium and its national entities, and the respective competences of its federal and regional institutions. The options are designed as a compass to aid decision-makers in defining future orientations, efforts and policies towards more security in the world, Europe, Belgium and Flanders.

Endnotes

1 '*Voor een welvarend, solidair en duurzaam België, Regeerakkoord 2020*, Federal Government, 30 September 2020, p.77, https://www.belgium.be/sites/default/files/Regeerakkoord_2020.pdf .

2 ICAN, *Populations in 6 NATO states overwhelmingly support the TPNW* (January 2021), https://www.icanw.org/nato_poll_2021.

3 BBC, *North Korea says it fired new "hypersonic missile"* (29 September 2021), https://www.bbc.com/news/world-asia-58729701.

4 BBC, *North Korea claims test of new submarine-launched missile* (20 October 2021), https://www.bbc.com/news/world-asia-58976195.

5 Financial Times, *China tests new space capability with hypersonic missile* (16 October 2021). https://www.ft.com/content/ba0a3cde-719b-4040-93cb-a486e1f843fb.

6 Reif, K., Biden administration begins nuclear posture review, *Arms Control Today* (September 2021), https://www.armscontrol.org/act/2021-09/news/biden-administration-begins-nuclear-posture-review.

7 France 24, *Russia closes NATO missions as ties plunge to new low* (18 October 2021), https://www.france24.com/en/live-news/20211018-russia-closes-nato-missions-as-ties-plunge-to-new-low.

8 Federation of American Scientists, *Status of world nuclear forces* (s.d.), https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces.

9 Kristensen, H.M & Korda, M. (2021), World nuclear forces, in: *SIPRI yearbook 2021*, Oxford: Oxford University Press, p. 333.

10 UK Cabinet Office, *Global Britain in a competitive age: the integrated review of security, defence, development and foreign policy* (2 July 2021), https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy.

11 Federation of American Scientists, *Status of world nuclear forces* .

12 Arms Control Association, *Nuclear Weapons: Who Has What at a Glance* (s.d.), https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat .

13 Ibid.

14 Hans, M.K., & Matt, K. (2019), United States nuclear forces, *Bulletin of the Atomic Scientists*, 75:3, pp. 122–134.

15 Kristensen, M.H., & Norris, S.R. (2014), The B61 family of nuclear bombs, *Bulletin of the Atomic Scientists*, 70:3, p.83.

16 Federation of American Scientists, Status of world nuclear forces.

17 SIPRI, Global nuclear arsenals grow as states continue to modernize – new SIPRI Yearbook out now (14 June 2021), https://www.sipri.org/media/press-release/2021/global-nuclear-arsenals-grow-states-continue-modernize-new-sipri-yearbook-out-now.

18 Federation of American Scientists, Status of world nuclear forces.

19 Ibid.

20 Nuclear Threat Initiative, *Factsheet Libya nuclear overview*, Libya Nuclear Overview - The Nuclear Threat Initiative (nti.org).

21 Sublette, C., Nuclear weapons frequently asked questions: states formerly possessing or pursuing nuclear weapons (2001), https://nuclearweaponarchive.org/Nwfaq/Nfaq7-4.html.

22 https://www.europarl.europa.eu/cmsdata/122460/full-text-of-the-iran-nuclear-deal.pdf

23 Tasnim News Agency, Iran says to continue cooperation with IAEA after taking 5th step (6 January 2020), https://www.tasnimnews.com/en/news/2020/01/06/2175832/iran-says-to-continue-cooperation-with-iaea-after-taking-5th-step.

24 Cordesman, A.H., *The Israeli "nuclear reactor strike" and Syrian weapons of mass destruction: a background analysis*, Center for Strategic and International Studies (2007), https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/media/csis/pubs/071024_syriannucl_weapcontext.pdf .

25 Cooper, C., Isis nuclear bomb is a serious threat, warns Barack Obama, *The Independent* (1 April 2016), https://www.independent.co.uk/news/world/politics/isis-nuclear-bomb-serious-threat-warns-barack-obama-a6964621.html.

26 Ibid.

27 UN Security Council, *Resolution 1540: Non-proliferation of weapons of mass destruction*, 28 April 2004, http://unscr.com/en/resolutions/1540

28 Arms Control Association, UN Security Council Resolution 1540 at a Glance (February 2021), https://www.armscontrol.org/factsheets/1540.

29 Arms Control Association, U.S.-Russian nuclear arms control agreements at a glance (April 2020), https://www.armscontrol.org/factsheets/USRussiaNuclearAgreements.

30 Federation of American Scientists, Status of world nuclear forces .

31 Ingram, P. (2019), *Discussion paper: nuclear doctrine*, Nuclear Threat Initiative (2019), https://media.nti.org/documents/Discussion_Paper-Nuclear_Doctrine.pdf.

[32] US Department of Defense, America's nuclear triad (s.d.), https://www.defense.gov/Experience/Americas-Nuclear-Triad.

[33] Vergun, D., DOD official outlines U.S. nuclear deterrence strategy, *US Department of Defense News* (2 September 2020), https://www.defense.gov/News/News-Stories/Article/Article/2334600/dod-official-outlines-us-nuclear-deterrence-strategy.

[34] Gavin, J.F. (2018), Beyond deterrence: U.S. nuclear statecraft since 1945, in: Brooks, L., Gavin, J.F., & Arbatov, A. (eds.), *Meeting the challenges of the new nuclear age: U.S. and Russian nuclear concepts, past and present*, Cambridge, MA: American Academy of Arts and Sciences, p. 16.

[35] Ministry of Foreign Affairs of the Russian Federation, *Basic principles of state policy of the Russian Federation on nuclear deterrence* (8 June 2020), https://www.mid.ru/en/foreign_policy/international_safety/disarmament/-/asset_publisher/rp0fiUBmANaH/content/id/4152094.

[36] Arms Control Association, *Arms control and proliferation profile: Russia* (August 2019), https://www.armscontrol.org/factsheets/russiaprofile.

[37] Russia Matters, Is 'escalate to deescalate' part of Russia's nuclear toolbox? (8 January 2020), https://www.russiamatters.org/analysis/escalate-deescalate-part-russias-nuclear-toolbox.

[38] US Department of Defense, Office of the Secretary of Defense, *Annual report to Congress: military and security developments involving the People's Republic of China 2019* (2020), https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf.

[39] Ministère de la Défense, *White paper on defence and national security* (2013), https://www.defense.gouv.fr/english/dgris/defence-policy/white-paper-2013/white-paper-2013, pp. 72 -73.

[40] Ladwig III, W.C. (2007–2008), A cold start for hot wars? The Indian army's new limited war doctrine, *International Security*, 32:3, pp. 158–190.

[41] Cold Start : India's answer to Pakistan's nuclear bullying, Economic Times Online, 4 March 2019, https://economictimes.indiatimes.com/news/defence/cold-start-indias-answer-to-pakistans-nuclear-bullying/articleshow/68254953.cms

[42] Ellyatt, H., North Korea threatens nuclear strike on US, SKorea, *CBNC* (7 March 2016), https://www.cnbc.com/2016/03/07/north-korea-threatens-to-reduce-us-to-ashes.html.

[43] NATO, NATO nuclear deterrence (February 2020), https://www.nato.int/nato_static_fl2014/assets/pdf/2020/2/pdf/200224-factsheet-nuclear-en.pdf.

[44] Pedlow, G. (ed.) (1997), The strategic concept for the defense of the North Atlantic Area, in: *NATO strategy documents 1949–1969*, NATO, https://www.nato.int/docu/stratdoc/eng/intro.pdf, pp. 1–8.

[45] NATO, Strategic concepts (15 June 2021), https://www.nato.int/cps/en/natohq/topics_56626.htm.

[46] Mendelsohn, J., NATO's nuclear weapons: the rationale for 'no first use', *Arms Control Today* (s.d.), https://www.armscontrol.org/act/1999-07/features/natos-nuclear-weapons-rationale-first-use.

[47] Ibid.

[48] NATO (2010), *Active engagement, modern defence. Strategic concept for the defence and security of the members of the North Atlantic Treaty Organisation*, adopted by heads of state and government at the NATO Summit in Lisbon, 19-20 November 2010, https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf

[49] North Atlantic Council. *Deterrence and Defence Posture Review*. 20 May 2012, https://www.nato.int/cps/en/SID-140D258B-1322853B/natolive/official_texts_87597.htm

[50] Xinhuanet, China reiterates non-first-use principle of nuclear weapons (18 February 2018), http://www.xinhuanet.com/english/2018-02/18/c_136982260.htm.

[51] State Council of the People's Republic of China, *China's military strategy* (2015), http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm.

[52] Office of the Secretary of Defense, *Nuclear posture review*, US Department of Defense (February 2018), https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF, p.21

[53] Eckel, M, Putin says Russia has ruled out launching preemptive nuclear strikes, RadioFreeEurope RadioLiberty (19 October 2108), https://www.rferl.org/a/putin-says-russia-has-ruled-out-launching-preemptive-nuclear-strikes-only-use-defensively/29552055.html

[54] UK Cabinet Office, Global Britain in a competitive age.

[55] Hans & Matt, United States nuclear forces; Tertrais, B. (2020), *French nuclear deterrence policy, forces, and future: a handbook,* Paris: Fondation pour la recherche stratégique.

[56] Bharat K. (2008), *India's nuclear policy*, Westport: CT, Praeger Security International, p. 85.

[57] Iqbal, A., Tactical N-arms to ward off war threat, says FO, *DAWN* (20 October 2015), https://www.dawn.com/news/1214196.

[58] Sanders-Zakre, A., & Davenport, K., Is India shifiting nuclear doctrine? *Arms Control Today* (May 2017), https://www.armscontrol.org/act/2017-05/news/india-shifting-nuclear-doctrine.

[59] NATO, NATO nuclear deterrence.

[60] Ibid.

61 UN Security Council, *Resolution 984: security assurances against the use of nuclear weapons to non-nuclear-weapon states that are parties to the treaty on the non-proliferation of nuclear weapons*, 11 April 1995, http://unscr.com/en/resolutions/984.

62 Davenport, K., Nuclear declaratory policy and negative security assurances, *Arms Control Today* (March 2018), https://www.armscontrol.org/factsheets/declaratorypolicies.

63 Office of the Secretary of Defense, *Nuclear posture review*, US Department of Defense (February 2018), https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF, p.21.

64 Fihn, B. (2011), The conference on disarmament and negative security assurances, in: UNIDIR Resources, *The conference on disarmament and NSAs*, (March 2011), https://unidir.org/files/publications/pdfs/the-conference-on-disarmament-and-negative-security-assurances-369.pdf, p.3.

65 State Council of the People's Republic of China, *China's military strategy*.(27 May 2015), http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm,

66 People's Republic of China, *Statement by H.E. Ambassador Li Baodong head of the Chinese delegation at the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons* (4 May 2010), https://www.un.org/en/conf/npt/2010/statements/pdf/china_en.pdf.

67 UK Cabinet Office, Global Britain in a competitive age.

68 Tertrais, B. (2020), *French nuclear deterrence policy, forces and future: a handbook*. Paris: Fondation pour la Recherche Stratégique, https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf

69 Ministry of External Affairs, Government of India, Statement by India at the Second Conference on the Humanitarian Impact of Nuclear Weapons at Nayarit, Mexico (14 February 2014), https://mea.gov.in/Speeches-Statements.htm?dtl/22936/Statement+by+India+at+the+Second+Conference+on+the+Humanitarian+Impact+of+Nuclear+Weapons+at+Nayarit+Mexico.

70 Congressional Research Service, *Pakistan's nuclear weapons* (2016), https://fas.org/sgp/crs/nuke/RL34248.pdf.

71 World Economic Forum, Geopolitical power shifts (s.d.), http://reports.weforum.org/global-risks-2018/geopolitical-powershift/?doing_wp_cron=1623829555.4826200008392333984375.

72 US Department of Defense, *The national military strategy of the United States of America 2015: the United States military's contribution to national security* (June 2015), https://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf, pp. i, 1–4.

73 Thornberry, M., Nuclear posture review: recognizing the return to great power competition, *Defense News* (5 February 2018), https://www.defensenews.com/opinion/commentary/2018/02/05/nuclear-posture-review-recognizing-the-return-to-great-power-competition.

74 White House, *Interim national security strategic guidance* (March 2021), https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf, pp. 6, 9.

75 Anya Loukianova Fink, Olga Oliker; Russia's Nuclear Weapons in a Multipolar World: Guarantors of Sovereignty, Great Power Status & More. *Daedalus* 2020; 149 (2): 37–55.

76 O'Rourke, R., *Renewed great power competition: implications for defense – issues for Congress*, Congressional Research Service (October 2021), https://crsreports.congress.gov/product/pdf/R/R43838/79.

77 Sokova, E.K. (2017), Non-state actors and nuclear weapons, in: Borrie, J., Coughly, T., & Wan, W. (eds.), *Understanding nuclear weapon risks,* Geneva: UNIDIR, p. 83.

78 Center for Arms Control and Non-proliferation, Fact sheet: U.S. nuclear weapons modernization: costs & constraints (22 January 2021), https://armscontrolcenter.org/fact-sheet-u-s-nuclear-weapons-modernization-costs-constraints; Arms Control Association, The trillion (and a half) dollar triad? (18 August 2017), https://www.armscontrol.org/issue-briefs/2017-08/trillion-half-dollar-triad.

79 Reif, Biden administration.

80 Hersman, K.C.R., & Rodgers, J., Nuclear modernization under competing pressures, *Transition* (12 February 2021), https://www.csis.org/analysis/nuclear-modernization-under-competing-pressures.

81 Russian Federation, *Expanded meeting of the Defence Ministry Board* (21 December 2020), http://en.kremlin.ru/events/president/news/64684.

82 China Power, How is China modernizing its nuclear forces? (28 October 2020), https://chinapower.csis.org/china-nuclear-weapons.

83 Defence Nuclear Organisation & Ministry of Defence, Integrated review of security, defence, development and foreign policy 2021: nuclear deterrent (17 March 2021), https://www.gov.uk/guidance/integrated-review-of-security-defence-development-and-foreign-policy-2021-nuclear-deterrent.

84 ICAN, *NATO public opinion on nuclear weapons* (January 2021), https://d3n8a8pro7vhmx.cloudfront.net/ican/pages/234/attachments/original/1611134933/ICAN_YouGov_Poll_2020.pdf.

85 Finaud, M., *'Humanitarian disarmament': powerful new paradigm or naive utopia?* Geneva Centre for Security Policy (2017), https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/resources/docs/GCSP-Humanitarian%20Disarmament,%20Powerful%20New%20Paradigm%20or%20Naive%20Utopia.pdf, p. 9.

86 Huth, P.K. (1999), Deterrence and international conflict: empirical findings and theoretical debates, *Annual Review of Political Science*, 2, pp. 25–48.

87 Finaud, 'Humanitarian disarmament', p. 11.

88 Treaty on the Non-Proliferation of Nuclear Weapons (1968), https://www.un.org/disarmament/wmd/nuclear/npt/text, preamble.

89 *2010 Review Conference of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons: final document* (NPT/CONF.2010/50, Vol. I) (2010), p. 10, https://www.nonproliferation.org/wp-content/uploads/2015/04/2010_fd_part_i.pdf.

90 International Court of Justice, Advisory Opinion of 8 July 1996, Legality of the threat or use of nuclear weapons, https://www.icj-cij.org/en/case/95.

91 Finaud, M. (2017), *Humanitarian disarmament': powerful new paradigm or naïve utopia*? Geneva; Geneva Centre for Security Policy, p. 33., https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/resources/docs/GCSP-Humanitarian%20Disarmament,%20Powerful%20New%20Paradigm%20or%20Naive%20Utopia.pdf

92 NATO, North Atlantic Council Statement as the Treaty on the Prohibition of Nuclear Weapons enters into force (15 December 2020), https://www.nato.int/cps/en/natohq/news_180087.htm .

93 NATO, A short history of NATO (s.d.), https://www.nato.int/cps/en/natohq/declassified_139339.htm.

94 Henshaw, J.H., *The origins of COCOM: lessons for contemporary proliferation control regimes*, The Henry L. Stimson Center (May 1993), https://www.files.ethz.ch/isn/105597/Report7.pdf, p. 5.

95 Michel, Q. (2010), *The control of international nuclear trade: difficult balance between trade development and non-proliferation of nuclear weapons* , Paris: OECD, p. 277.

96 Ibid.

97 UN Security Council, Resolution 1540 : Non-proliferation of weapons of mass destruction, 28 April 2004, http://unscr.com/en/resolutions/1540

98 ILPI & Geneva Academy, *Nuclear weapons under international law: an overview* (October 2014), https://www.geneva-academy.ch/joomlatools-files/docman-files/Nuclear%20Weapons%20Under%20International%20Law.pdf.

99 European Parliament and the Council of the European Union, Regulation (EU) 2021/821 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), 20 May 2021, https://eur-lex.europa.eu/eli/reg/2021/821

100 Preparatory Committee for the 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, *Final report* (NPT/CONF.2020/1) (20 May 2019), https://digitallibrary.un.org/record/3808637, p. 43.

101 Federal Foreign Office, New impetus for nuclear disarmament: Stockholm Initiative meets in Madrid (5 July 2021), https://www.auswaertiges-amt.de/en/aussenpolitik/themen/abruestung/maas-stockholm-initiative-madrid/2469632.

102 Duarte, S., Unmet promise: the challenges awaiting the 2020 NPT Review Conference, *Arms Control Today* (November 2018), https://www.armscontrol.org/act/2018-11/features/unmet-promise-challenges-awaiting-2020-npt-review-conference.

103 Shetty, S., & Williams, H., *The P5 Process: opportunities for success in the NPT Review Conference*, King's College London & European Leadership Network (June 2020), https://www.europeanleadershipnetwork.org/report/the-p5-process-opportunities-for-success, p. 8.

104 Ibid.

105 Abe, N. (2020), The NPT at fifty: successes and failures, *Journal for Peace and Nuclear Disarmament*, 3:2, pp. 224–233.

106 UN Office for Disarmament Affairs, Treaty on the Prohibition of Nuclear Weapons: status of the treaty (s.d.), https://treaties.unoda.org/t/tpnw.

107 Kingdom of Belgium, Foreign Affairs, Foreign Trade and Development Cooperation, Belgium committed to non-proliferation and nuclear disarmament (7 December 2020), https://diplomatie.belgium.be/en/newsroom/news/2020/belgium_committed_non_proliferation_and_nuclear_disarmament.

108 UN General Assembly, Resolution A/75/399, 7 December 2020, https://www.undocs.org/Home/Mobile?FinalSymbol=A%2F75%2F399&Language=E&DeviceType=Desktop .

109 European Parliament and the Council of the European Union, Regulation (EU) 2021/821 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), Official Journal of the European Union, L 206, 11 June 2021..

110 UN Security Council, Resolution 1540 : Non-proliferation of weapons of mass destruction

111 Dill, C.B., & Stewart, I.J. (2015), Defining effective strategic trade controls at the national level, *Strategic Trade Review,* 1:1, p. 8.

112 European Parliament and the Council of the European Union, Regulation (EU) 2021/821 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast).

113 Nuclear Threat Initiative, Treaty Banning Nuclear Tests in the Atmosphere, in Outer Space and Under Water (Partial Test Ban Treaty) (5 August 1963), https://www.nti.org/learn/treaties-and-regimes/treaty-banning-nuclear-test-atmosphere-outer-space-and-under-water-partial-test-ban-treaty-ptbt.

114 Wet van 13 juni 1999 houdende instemming met het Verdrag inzake een alomvattend verbod op kernproeven, en met het Protocol, ondertekend te New York op 24 september 1996, *B.S.,* 26 oktober 1999.

115 Comprehensive Nuclear-Test-Ban Treaty Organization, Belgium (s.d.), https://www.ctbto.org/the-treaty/country-profiles/?country=17&cHash=dd250a4f52814d98e0a9be8f8f29a9f4.

116 NATO, Deterrence and defence (25 June 2021), https://www.nato.int/cps/en/natohq/topics_133127.htm.

117 Ibid.

118 Végh, K. (2019), The North Atlantic Treaty and it's [*sic*] relationship to other 'engagements' of its parties: a commentary on Article 8, *Emory International Law Review*, 34, p. 140.

119 Ibid, p. 144.

120 European Parliament and the Council of the European Union, Regulation (EU) 2021/821 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), Official Journal of the European Union, L 206, 11 June 2021.

121 International Court of Justice, Nuclear Tests (Australia v. France), (s.d.), https://www.icj-cij.org/en/case/58 ; International Court of Justice, Nuclear Tests (New Zealand v. France), (s.d.), https://www.icj-cij.org/en/case/59.

122 International Court of Justice, Obligations concerning negotiations relating to cessation of the nuclear arms race and to nuclear disarmament (Marshall Islands v. United Kingdom) (s.d.), https://www.icj-cij.org/en/case/160.

123 International Court of Justice, Legality of the Threat or Use of Nuclear Weapons, (s.d.), https://www.icj-cij.org/en/case/95

124 UN Security Council, Resolution 49/75 K: general and complete disarmament, 15 December 1994, https://digitallibrary.un.org/record/193267.

125 See, for example, Wassenaar Plenary, *Best practices for effective enforcement* (2016), https://www.wassenaar.org/app/uploads/2019/consolidated/Best-Practices-for-Effective-Export-Control-Enforcement.pdf p. 1. Agreed at the 2000 plenary and amended at the 2016 plenary.

126 European Commission, Dual-use trade controls (s.d.), https://ec.europa.eu/trade/import-and-export-rules/export-from-eu/dual-use-controls.

127 Cochrane, H., & Milet, D. (1986), The Consequences of Nuclear War: An Economic and Social Perspective, in: Solomon, F., & Marston, R.(eds.), *The medical implications of nuclear war* (pp. 381-412), Washington, DC: National Academies Press,

128 Weida, W.J., The hidden costs of our nuclear arsenal, Brookings (30 June 1998), https://www.brookings.edu/the-economic-implications-of-nuclear-weapons.

129 Management Study Guide, The economics of nuclear weapons (s.d.), https://www.managementstudyguide.com/economics-of-nuclear-weapons.htm.

130 Research Services of the German Bundestag, *On the legal relationship between the Treaty on the Prohibition of Nuclear Weapons and the Non-Proliferation Treaty* (2012), https://www.sevimdagdelen.de/wp-content/uploads/WD-2-3000-111-20-On-the-legal-relationship-between-the-Treaty-on-the-Prohibition-of-Nuclear-Weapons-and-the-Non-Proliferation-Treaty.pdf.

131 Hurley, D., *The Treaty on the Prohibition of Nuclear Weapons*, Oireachtas Library and Research Service (May 2019), https://data.oireachtas.ie/ie/oireachtas/libraryResearch/2019/2019-05-29_l-rs-note-the-treaty-on-the-prohibition-of-nuclear-weapons_en.pdf.

132 Adviesraad Internationale Vraagstukken, *Advies 109: kernwapens in een nieuwe geopolitieke werkelijkheid hoog tijd voor nieuwe wapenbeheersingsinitiatieven* (29 January 2019), https://www.adviesraadinternationalevraagstukken.nl/documenten/publicaties/2019/01/29/kernwapens-in-een-nieuwe-geopolitieke-werkelijkheid.

133 Norwegian Ministry of Foreign Affairs, Review of the consequences for Norway of ratifying the Treaty on the Prohibition of Nuclear Weapons (28 November 2018), https://www.regjeringen.no/en/dokumenter/review_tpnw/id2614520.

134 Government Offices of Sweden, Inquiry into the consequences of a possible Swedish accession to the Treaty on the Prohibition of Nuclear Weapons (23 October 2017), https://www.government.se/press-releases/2017/10/inquiry-into-the-consequences-of-a-possible-swedish-accession-to-the-treaty-on-the-prohibition-of-nuclear-weapons.

135 Swiss Federal Department of Foreign Affairs (FDFA), *Report of the working group to analyse the Treaty on the Prohibition of Nuclear Weapons* (30 June 2018), https://www.eda.admin.ch/dam/eda/en/documents/aussenpolitik/sicherheitspolitik/2018-bericht-arbeitsgruppe-uno-TPNW_en.pdf.

136 UK Mission to UN in New York & UK Mission to the WTO, UN and Other International Organisations (Geneva), *P5 joint statement on the Treaty on the Non-proliferation of Nuclear Weapons* (24 October 2018), https://www.gov.uk/government/news/p5-joint-statement-on-the-treaty-on-the-non-proliferation-of-nuclear-weapons; Select Committee on International Relations, *Rising nuclear risk, disarmament and the Nuclear Non-Proliferation Treaty* (24 April 2019), https://publications.parliament.uk/pa/ld201719/ldselect/ldintrel/338/33802.htm; Lord Bishop of Coventry, question to the British Minister of State, Foreign, Commonwealth and Development Office on the prohibition of nuclear weapons, UK Parliament, 21 January 2021, https://hansard.parliament.uk/Lords/2021-01-21/debates/DCB6C09F-E381-42B2-AA59-7DCA1984D34C/ProhibitionOfNuclearWeapons.

137 Swiss FDFA, *Report of the working group*.

138 Treaty on the Prohibition of Nuclear Weapons, United Nations General Assembly, 7 July 2017, Article 1(e).

[139] Corrs Chambers Westgarth, The UN Treaty on the Prohibition of Nuclear Weapons: implications for companies and institutional investors (22 January 2021), https://corrs.com.au/insights/the-un-treaty-on-the-prohibition-of-nuclear-weapons-implications-for-companies-and-institutional-investors.

[140] Ibid.

[141] Ibid.

[142] International Trade Union Confederation, ITUC welcomes Treaty on the Prohibition of Nuclear Weapons (TPNW) coming into force (25 October 2020), https://www.ituc-csi.org/TPNW-50-ratifications.

[143] Axa Bank Belgium, *Policy on the fight against money laundering and the financing of terrorism and sanction compliance* (1 January 2020), https://www.axabank.be/-/media/documents/axa-bank-europe/compliance/anti-money-laundering-statement.pdf?la=nl.

[144] KBC, KBC raises the bar for its sustainability policy (8 June 2018), https://newsroom.kbc.com/kbc-raises-the-bar-for-its-sustainability-policy .

[145] Ibid.

[146] KBC Group, KBC nuclear arms policy fully in line with UN Treaty on Prohibition of Nuclear Weapons (22 January 2021), https://www.kbc.com/content/dam/kbccom/doc/newsroom/pressreleases/2021/20210122_PB_VNverdrag_Kernwapens_ENG.pdf.

[147] Snyder, S., *Producing mass destruction: private companies and the nuclear weapon industry*, ICAN & PAX (May 2019), https://www.dontbankonthebomb.com/wp-content/uploads/2019/05/2019_Producers-Report-FINAL.pdf.

[148] Snyder, S., *Shorting our security: financing the companies that make nuclear weapons,* ICAN & PAX (June 2019), https://www.dontbankonthebomb.com/wp-content/uploads/2019/06/2019_HOS_web.pdf.

[149] Ibid., p. 7.

[150] Ibid., p. 66.

[151] Commission d'Avis pour la Non-prolifération des Armes Nucléaires, *Rapport annuel 2019* (2020), https://economie.fgov.be/fr/publications?fulltext=&sort_by=field_publication_date_2&f%5B0%5D=publication_date%3A2020&page=2.

[152] Kingdom of Belgium, Special Law of Institutional Reforms of 8 August 1980, as modified on 23 March 2021.

[153] Minister van Defensie, *De strategische visie voor defensie* (29 June 2016), https://www.cdsca-ocasc-website.be/wp-content/uploads/2020/organisatie/strategischplan2.pdf.

[154] Belgian Minister of Defence, *Actualisering van de strategische visie 2030: aanbevelingen* (June 2021), https://www.defence-institute.be/wp-content/uploads/2021/06/200622-Strategic-Vision-2021-NL.pdf.

[155] Alberque, W., *The NPT and the origins of NATO's nuclear sharing arrangements* (February 2017), https://www.ifri.org/sites/default/files/atoms/files/alberque_npt_origins_nato_nuclear_2017.pdf, p. 13.

[156] NATO, NATO's nuclear deterrence policy and forces (11 May 2021), https://www.nato.int/cps/en/natohq/topics_50068.htm.

[157] NATO, Deterrence and Defence Posture Review (21 May 2012), https://www.nato.int/cps/en/natohq/official_texts_87597.htm.

[158] NATO, NATO's nuclear deterrence policy.

[159] NATO, *NATO and nuclear disarmament: factsheet* (October 2020), https://www.nato.int/nato_static_fl2014/assets/pdf/2020/10/pdf/2010-factsheet-nuclear-disarmament-en.pdf.

[160] Ibid.

[161] NATO, Warsaw Summit Communiqué: issued by the heads of state and government participating in the meeting of the North Atlantic Council in Warsaw 8–9 July 2016 (9 July 2016), https://www.nato.int/cps/en/natohq/official_texts_133169.htm.

[162] NATO, NATO's nuclear deterrence policy.

[163] NATO, Brussels Summit Communiqué: issued by the heads of state and government participating in the meeting of the North Atlantic Council in Brussels 14 June 2021 (14 June 2021), https://www.nato.int/cps/en/natohq/news_185000.htm?selectedLocale=en.

[164] Kay, S., Scrap NATO's 2 percent target and go bold! Carnegie Europe (17 September 2015), https://carnegieeurope.eu/strategiceurope/61309.

[165] NATO, NATO's nuclear deterrence policy.

[166] ICAN, *NATO public opinion*.

[167] Nonukes.be, Wie zijn we (s.d.), https://nonukes.be/nl/contact-2/wie-zijn-we.

[168] Adam, B., Il y a 40 ans débutait la crise des euromissiles, Groupe de recherche et d'information sur la paix et la sécurité (11 December 2019), https://grip.org/il-y-a-40-ans-debutait-la-crise-des-euromissiles.

[169] ICAN, NATO and TPNW briefing paper (December 2020), https://www.icanw.org/nato_and_tpnw.

[170] NATO, *NATO 2030: united for a new era – analysis and recommendations of the reflection group appointed by the NATO Secretary General* (25 November 2020), https://www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf, p.37.

[171] Corrs Chambers Westgarth, The UN Treaty.

172 Wet van 18 september 2017 tot voorkoming van het witwassen van geld en de financiering van terrorisme en tot beperking van het gebruik van contanten, B.S. 6 october 2017.

173 Belgian K.B. of 2 June 2015, Arrêté royal portant création du Comité stratégique et du Comité de coordination du renseignement et de la sécurité, 3 June 2015, Article 9.

174 Kingdom of Belgium, Foreign Affairs, Foreign Trade and Development Cooperation, Corruption, money laundering and financing terrorism (s.d.), https://diplomatie.belgium.be/en/policy/policy_areas/peace_and_security/corruption_money_laundering_and_financing_terrorism.

175 Financial Action Task Force, *Anti-money laundering and counter-terrorist financing measures: Belgium – 3rd enhanced follow-up report & technical compliance re-rating* (2018), https://www.fatf-gafi.org/media/fatf/documents/reports/fur/FUR-Belgium-2018.pdf, p. 15.

176 Onderco, M., & Farrés Jiménez, A., A comparison of national reviews of the Treaty on the Prohibition of Nuclear Weapons, *Non-proliferation and Disarmament Papers*, 76 (June 2021), https://sipri.org/publications/2021/eu-non-proliferation-and-disarmament-papers/comparison-national-reviews-treaty-prohibition-nuclear-weapons-0, p. 3.

177 Ibid, p. 7.

178 Research Services of the German Bundestag, *On the legal relationship*, p. 16.

179 Hurley, *The Treaty*, p. 23.

180 Norwegian Ministry of Foreign Affairs, Review.

181 Government Offices of Sweden, Inquiry, p. 53.

182 Ibid., p. 10.

183 UK Mission to UN in New York & UK Mission to the WTO, *P5 joint statement*; Select Committee on International Relations, *Rising nuclear risk*, Lord Bishop of Coventry, question.

184 UK Mission to UN in New York & UK Mission to the WTO, *P5 joint statement*.

185 Kingdom of Belgium, Special Law of Institutional Reforms of 8 August 1980, as modified on 23 March 2021.

186 UK Cabinet Office, Global Britain in a competitive age.

187 NATO, Active Engagement, Modern Defence, Strategic Concept (2010).

188 NATO, NATO's nuclear deterrence policy.

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