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Social Responsibility and Nuclear Weapons

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REPORT FOR DANSIF

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1. Executive Summary

Nuclear weapons long considered an area under the absolute authority of the nation-state, the role of industry in NW production and possession has more recently been raised in relation to corporate social responsibility. Unlike the conventions governing chemical and biological weapons, international law does not declare nuclear weapons illegal; nor does it offer clarity on whether their use in armed conflict would be lawful or unlawful in extreme circumstances of self-defence. That said, 182 states have foregone nuclear weapons – agreeing under the Nuclear Non-Proliferation Treaty to give up the right to develop nuclear weapons in exchange for access to trade in peaceful nuclear technology and that those states possessing nuclear weapons would work in good faith towards disarmament. There is however no globally-agreed upon system of peaceful technological exchange and efforts toward disarmament remain stalled as possessors are reluctant to let go of what they consider the ultimate security guarantee. Governance of nuclear weapons therefore is a mix of formal and informal national, bilateral, multilateral and international law and mechanisms which has created a multi-layered tiered system that applies different rules to different states and regions, and sometimes in contradictory ways. It has been argued that this inability to delineate legal boundaries of using nuclear technology globally poses as much of a challenge to human safety and security as the weapons themselves. Accordingly, the issue of nuclear weapons and socially responsible investing is open to interpretation.

While much of the discussion over socially responsible investing has focused on indiscriminate weapons such as landmines and cluster munitions, there is a growing recognition among civil society, publics and investors that the catastrophic destruction and indiscriminate nature of nuclear weapons strengthen the case for a concerted effort by industry (and governments) to not only divest themselves from the financing of nuclear weapons but also to develop new sets of standards to prevent nuclear proliferation. Commissioned by the Danish Social Investment Forum, this report acts as a resource guide to inform the former while prompting further consideration of the latter through analysis and assessment of the international, multilateral, regional and national regulation of nuclear weapons and dual-use technology. It notes that the international situation is complex in its nuclear weapons narrative; but that a growing disarmament movement is opening up a space for engagement not only for industry, but governments and citizens alike in the role of nuclear weapons in international relations.

2. List of Acronyms

ASAT	anti-satellite
ATS	Antarctic Treaty System
BWC	Biological and Toxin Weapons Convention
CD	Conference on Disarmament
CMC	Cluster Munitions Convention
CPPNM	Convention on the Physical Protection of Nuclear Material
CSR	Corporate social responsibility
CTBT	Comprehensive Test Ban Treaty
CTBTO	Comprehensive Nuclear-Test Ban Treaty Organization
CWC	Chemical Weapons Convention
DSJI	Dow Jones Sustainability Index
G7/G8	Group of Seven/Eight countries
IAEA	International Atomic Energy Agency
ICAN	International Campaign to Abolish Nuclear Weapons
ICBM	Intercontinental Ballistic Missile
ICCPR	International Covenant on Civil and Political Rights
ICJ	International Court of Justice
ICNND	International Commission on Nuclear Nonproliferation and Disarmament
IMS	International Monitoring System
MTCR	Missile Technology Control Regime
NAM	Non-Aligned Movement
NPT	Nuclear Nonproliferation Treaty
NSG	Nuclear Suppliers Group
NNWS	Non-nuclear weapon states
NW	Nuclear weapons
NWS	Nuclear weapons states
NWFZ	Nuclear-weapon Free Zone
NWS	Nuclear Weapon States
PAROS	Prevention of an Arms Race in Outer Space
PRI	Principles of Responsible Investment
PSI	Proliferation Security Initiative
PTBT	Partial Test Ban Treaty
SLBM	Submarine-Launched Ballistic Missile
SLV	Space-Launch Vehicle
SRI	Socially Responsible Investing
UNGA	UN General Assembly
UNSC	UN Security Council
UNSCR	UN Security Council Resolution
WCP	World Court Project
WNA	World Nuclear Association
WMD	Weapons of Mass Destruction

3. Introduction

Nuclear weapons long considered an area under the absolute authority of the nation-state, the role of industry in NW production and possession has more recently been raised in relation to corporate social responsibility (CSR). The Dow Jones Sustainability Index (DSJI) for example excludes companies that do business in the field of weapons of mass destruction while the FTSE4Good Index excludes not only companies manufacturing either whole, strategic parts, or platforms for nuclear weapons systems but also companies which are involved in nuclear power. Accordingly, while much of the discussion over socially responsible investing (SRI) has focused on indiscriminate weapons such as landmines and cluster munitions, there is a growing recognition among civil society, publics and investors that the catastrophic destruction and indiscriminate nature of nuclear weapons strengthen the case for a concerted effort by industry (and governments) to not only divest themselves from the financing of nuclear weapons but also to develop new sets of standards to prevent nuclear proliferation.

Landmines and cluster munitions similar to nuclear weapons in their indiscriminate characteristics, they are considered 'tactical' in their military use on the battlefield whereas nuclear weapons can be intercontinental and strategically delivered by surface-to-surface intercontinental ballistic missiles (ICBMs), from submarine-launched ballistic missiles (SLBMs) and by heavy bombers. Unlike landmines and cluster munitions, nuclear weapons are considered the ultimate security guarantee with no universal treaty banning their possession. Indeed, the possession of nuclear weapons is a tense issue in international relations. In existence for 66 years, their numbers have increased, decreased and spread to new states creating geopolitical, regional and local outcomes. Their destructive potential if deployed would have a shattering and lasting impact on human, social, environmental, economic and political spheres; yet, ambiguity still exists around the use, or threat of use, of nuclear weapons. Structured into a controversial two-tier system of haves and have nots in the Nuclear Nonproliferation Treaty (NPT), a third tier has been created by those states that remain outside of the NPT, either having withdrawn or never signing the treaty. These tiers - and tensions between tiers - have spilled over into the domain of the peaceful uses of nuclear technologies where initiatives to further limit sensitive nuclear technologies by those who have them are opposed by emerging powers which will not accept the perpetuation of a tiered system in the nuclear power industry. Considering the 2008 exemption for India – a possessor of nuclear weapons not party to the NPT – from previously long-standing multilateral and national dual-use nuclear export controls, along with the ambiguity of NW use and the reticence by key states to bringing the treaty banning all nuclear explosions into force, the debate on nuclear weapons and transfer of dual-use nuclear materials is politically and strategically loaded.

While the issue of nuclear nonproliferation has been considered a political and security matter for government, sensitive nuclear technology, including technology for peaceful purposes has found its way into nuclear weapons programs since the 1970s (i.e. India and Iraq) with industry involved in many cases. In response, states have established informal export control mechanisms in the Nuclear Suppliers Group (NSG) in 1978 and the conclusion of an Additional Protocol to states' safeguards agreement with the International Atomic Energy Agency (IAEA) in 1997 to assist with early detection of undeclared activities. Additionally, the informal 2003 Proliferation Security Initiative (PSI) works to detect and interdict WMD materials to countries of proliferation concern while the UN Security Council Resolution 1540 of 2004 binds all states to establish domestic controls to prevent WMD, their means of delivery and related materials from illicit transfers. Outside of UNSCR 1540, these mechanisms however are not universal and

mainly voluntary. Consequently, nuclear weapons are governed by a mix of national, bilateral, multilateral and international laws and informal mechanisms, different rules are applied to, and by, different states and regions on nuclear weapons, and sometimes in contradictory ways.

Corporate Social Responsibility and Nuclear Weapons

Scholars differ on what kinds of issues should be included under CSR; but have included discussion on whether companies satisfy social demands, honour ethical values, environmental issues and how they use their political power. Over the years many CSR initiatives have been signed by many companies such as the UN's Global Compact Ten Principles, Global Corporate Citizenship, the Equator Principles and the Principles of Responsible Investment (PRI) where company reporting and transparency mainly in the areas of environment, labour, human rights and anti-corruption is critical. Similarly, the Global Reporting Initiative (GRI) provides a standard for the disclosure on environmental, social and governance (ESG) performance. These initiatives however, including the newly launched International Standard ISO 26000 Guidance on Social Responsibility¹, are voluntary mechanisms that do not specifically address the role of nuclear (chemical or biological) weapons. Although it has been argued that the use of nuclear weapons would violate international humanitarian law as they cannot distinguish between military and civilian targets and therefore enveloped into the principles of many initiatives listed above, the issue of CSR and financing nuclear weapons is a relatively new debate with no global industry guidance.

No treaty in existence banning their universal possession, their indiscriminate and devastating destructiveness however have led to a number of companies taking it upon themselves to consider the role of nuclear weapons in social investments. Some entities for example have categorised nuclear weapons as controversial weapons such as ING's Defence Policy which does not finance such weapons² and Domini Social Investments which notes that "the dangers of WMD and international arms trade are among the greatest we face today, and we view the spread of nuclear power technology as tied to the proliferation of nuclear weapons" and believes that the capital markets are not well suited "to deliver products that have the potential to cause incalculable harm."³ Members of industry are also becoming active participants in discussions about the future role of nuclear industry with the 2008 World Nuclear Association (WNA) policy documents and its Charter of Ethics and Principles of Uranium Stewardship spelling out industry responsibilities in ensuring 3S (safeguards, safety and security) are indispensable for peaceful uses of nuclear energy.⁴ The Australian Uranium Association has also begun to advocate for best practice in support of nonproliferation and its uranium stewardship principles support broader engagement to bring that about.⁵

¹ ISO 26000 provides voluntary guidance and therefore is not used as a certification standard, but it is notable that Denmark has introduced its own national standard – DS26001 that is based on ISO 26000 and is certifiable.

² ING Defence Policy, accessed August 3, 2011:

http://www.ingforsomethingbetter.com/our_approach/managing_our_business_impact/Finance_and_investment_policies/defence_policy/

³ See Domini Social Investments, "Evaluating Corporate Partnerships with Society,"

<http://www.domini.com/GlobInvStd/Stock-Fund/index.htm>

⁴ WNA Charter of Ethics, p 9, Annex 1, in World Nuclear Association. *Sustaining global best practices in uranium mining and processing: principles for managing radiation, health and safety, waste and the environment*. World Nuclear Association 2008: <http://www.world-nuclear.org/reference/reports.html>.

⁵ Australian Uranium Association. *Uranium stewardship principles*: www.auran.org.au/page.php?pid=393.

Given the complexity of nuclear weapons, their controls, politics and dual-use potential, this report commissioned by Dansif provides an overview of the international, regional and national regulation of nuclear weapons and dual-use nuclear technology. Starting with a historical review of nuclear weapons, it details international, multilateral and domestic controls on nuclear weapons, including an analysis and assessment of the political circumstances surrounding these controls and the possession of nuclear weapons. It attempts to provide a clear, concise resource document on all things nuclear weapons to assist Dansif in diversifying the debate on SRI and facilitating decision-making by its members on the topic.

4. Nuclear Weapons: A History

Defined in 1948 by the UN Commission for Conventional Armaments, weapons of mass destruction are: "...atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above."⁶ Accordingly, nuclear weapons are defined as a weapon of mass destruction. Such weapons use either highly enriched uranium or plutonium (fissile materials) to generate a nuclear explosion,⁷ with the minimum benchmarks for a nuclear weapon generally recognised as needing 8 kg of plutonium or 25 kg of uranium.⁸ They can be delivered by intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles or by heavy bombers.

The United States was the first to develop – and the only country to explode in conflict – nuclear weapons (NW). The US conducted its first nuclear weapons (NW) test in New Mexico on 16 July 1945 and exploded the first uranium bomb over Hiroshima on 6 August 1945, followed by the first plutonium explosion three days later over Nagasaki. Close to 200,000 people were killed by the attacks. The Soviet Union was the second to develop and test a nuclear weapon in 1949, followed by the UK in 1952; France in 1960 and China in 1964. Each of these five states is defined under the Nuclear Non-Proliferation Treaty (NPT) as a 'nuclear weapons state' (NWS) given they manufactured and exploded a nuclear weapon or device before 1 January 1967. This definition therefore does not recognise in international law those countries that manufactured and/or exploded nuclear weapons since 1967. Another four countries however have developed nuclear weapons: India, Israel, North Korea, and Pakistan.

India tested its first nuclear device in 1974 and conducted another round of tests in 1998 which was followed a few weeks later by Pakistan's first NW tests. North Korea tested a nuclear device in 2009 while Israel has not tested a nuclear weapon and maintains a policy of deliberate ambiguity regarding its nuclear weapons: neither confirming nor denying their existence.⁹ Accordingly, the NPT-5 plus the non-NPT

⁶ Commission for Conventional Armaments, UN document S/C.3/32/Rev.1, August 1948, as quoted in United Nations, Office of Public Information, *The United Nations and Disarmament, 1945–1965*, UN Publication 67.I.8, 28.

⁷ As uranium occurs naturally, it has to be artificially enriched to increase the proportion of U-235 (as a form of uranium that can generate a nuclear explosion). Plutonium on the other hand does not occur naturally and is a radioactive heavy metal that is generated as a byproduct in nuclear reactors.

⁸ The New START Treaty between the US and Russia defines the term 'nuclear armaments' as meaning heavy bombers, long-range nuclear ALCMs, nuclear air-to-surface missiles or nuclear bombs.

⁹ It has been suspected that Israel conducted a nuclear test in September 1979 which has become known as the Vela Incident. A flash reportedly detected by the US Vela satellite in the southern Indian Ocean was assessed by US intelligence to be a nuclear test which was conducted on an island controlled by South Africa. Later, a scientific panel concluded in July 1980 that the flash was "probably not from a nuclear explosion." Other authors however have contended that this was the third

possessors reveal various pathways to developing the bomb. The US (and UK¹⁰) programme the result of collaboration amongst American, British and Canadian scientists, the Soviets acquired their NW knowledge mainly through espionage while the Chinese NW programme was in large part a function of the 1953 technology transfer agreements initiated with the Soviet Union. France, the first nation to establish a civilian atomic energy authority in 1945,¹¹ utilised its peaceful plutonium production for weapons purposes¹² while India used the fuel obtained from research reactors provided by Canada and the US in its 1974 test.¹³ Pakistan also received dual-use nuclear technology from the US under Eisenhower's 'Atoms for Peace' program and also from China, with revelations later detailing acquisitions for its NW programme were acquired through an underground, international nuclear proliferation ring, raising concerns about the potential for non-state actors as well as state actors to acquire nuclear materials through such means.¹⁴ North Korea receiving technology transfers from this proliferation ring, it also modified a reactor it received from the Soviet Union in 1965 to make plutonium for nuclear weapons. Today, these nine countries possess an estimated global total of 20,000 nuclear weapons.¹⁵

Other countries have held nuclear weapons status, although only briefly. South Africa did develop a NW programme in the 1980s which consisted of six nuclear weapons that all were destroyed in 1989, making South Africa the first country to voluntarily give up nuclear weapons that it had indigenously developed. Belarus, Kazakhstan and Ukraine were temporarily NW possessors;¹⁶ but all three repatriated their nuclear stockpiles to Moscow and became non-nuclear weapons states under the NPT. To date, Iraq, Libya and North Korea have violated the NPT and Iran is currently said not to be fully implementing its binding obligations and therefore the "exclusively peaceful nature of Iran's nuclear programme" is being contested.¹⁷ Similarly, there have been concerns about Syria,¹⁸ alongside concerns about the nuclear

joint Israeli-South African nuclear test in the Indian Ocean. These tests have never been officially confirmed. See: Seymour Hersh, The Samson Option: Israel's Nuclear Arsenal and American foreign Policy, (New York: Random House), 1991.

¹⁰ The UK's special relationship with the US for example has allowed London to rely on US delivery systems designed and manufactured by Lockheed Martin while fitting them with British warheads. In 1974, a US proliferation assessment noted that "In many cases [Britain's sensitive technology in nuclear and missile fields] is based on technology received from the US and could not legitimately be passed on without US permission." See: Prospects for Further Proliferation of Nuclear Weapons, Special National Intelligence Estimate, 23 August 1974, p. 40.

<http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB240/snief.pdf>

¹¹ A decree by the French provisional government, issued 18 October 1945 under the authority of President and General Charles de Gaulle, established the French Atomic Energy Commission (Commissariat à l'Énergie Atomique, or CEA).

¹² Official approval for developing the French nuclear weapons programme was authorised in late 1954 and in 1955 the Armed Forces Ministry (Ministre des Armes) began to transfer large funding amounts to the programme. On 11 April 1958, the last Prime Minister of the Fourth Republic, Felix Gaillard, signed an official order the manufacturing and testing of a nuclear device.

¹³ See: "India and Pakistan," Canadian Nuclear Association, Accessed 25 July 2011:

http://www.cna.ca/curriculum/cna_can_nuc_hist/india_pakistan-eng.asp?bc=India%20and%20Pakistan&pid=India%20and%20Pakistan

¹⁴ Abdul Qadeer Khan, also known as the father of Pakistan's nuclear bomb, used his position in Urenco to obtain and provide designs on uranium enrichment to Pakistan. Additionally, Khan confessed in 2004 to sharing these nuclear designs and information with other countries other than Pakistan, specifically Libya, North Korea and Iran.

¹⁵ With 95% of this total belonging to the US and Russia.

¹⁶ When dissolution of the Soviet Union gave them national sovereignty, including over all military assets left behind.

¹⁷ IAEA Board of Governors, "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions," 25 February 2011, p. 3.

¹⁸ According to an IAEA report on Syria in February 2011 regarding the Syrian site Dair Alzour which was destroyed by an Israeli air strike in September 2007, the Agency stated that "the information and access provided by Syria to date have not

intentions of Saudi Arabia¹⁹ and Myanmar.²⁰ With climate change and global energy needs dramatically increasing the attractiveness of nuclear energy with some calling a resurgence in nuclear energy as a 'nuclear renaissance' or a 'second nuclear age,' the challenge is to ensure that this renaissance continues to be managed safely and securely at a time when nuclear proliferation pressures are also increasing.

At the same time, there are good news stories to report. With the African Nuclear Weapons Free Zone (Treaty of Pelindaba) entering into force in July 2009, the entire southern hemisphere is now considered free of nuclear weapons. There is also a growing call for a world without nuclear weapons that is being echoed globally and challenging the role of nuclear weapons in international relations. Nuclear weapons long considered the ultimate weapon to offset or increase arsenals vis-à-vis a perceived adversary's capabilities (or potential capabilities), many former cold war warriors such as former Secretaries of State George P. Shultz and Henry Kissinger, former Secretary of Defense William J. Perry and former Chair of the US Senate Armed Services Committee Sam Nunn are arguing that the spread of nuclear weapons, expertise and materials is leading to "a new nuclear era that will be more precarious, psychologically disorienting, and economically even more costly than was Cold War deterrence."²¹ To address this 'nuclear tipping point,' they argue that nuclear weapons are not able to address the various threats of the contemporary world and thus NW disarmament is the only assurance that they will never be used again. The movement toward a world without nuclear weapons however is long, politically-sensitive and for some utopian. As outlined in the following sections, many of the elements governing the fuel cycle are contentious in international relations with many of them being stretched as the fuel cycle has become globalised. The disarmament movement therefore is not only concerned with the elimination of nuclear weapons, but in bringing states together to negotiate an internationally binding and universal treaty that robustly verifies that states who have not only foregone nuclear weapons continue to maintain non-nuclear weapons status but also that currently have them are getting rid of them. Such a regime would be similar to the Chemical Weapons Convention in its obligations and verification, including a globally-recognised system of export controls.

5. International Law and Nuclear Weapons

International Law governs the actions of countries in times of war which constantly changes with advancements in weapons technology. The use of nuclear weapons however is not specifically addressed in international law. Unlike the 1925 Geneva Protocol which prohibited the first use of chemical or biological weapons, no such agreement on NW use has been negotiated internationally.

allowed the Agency to confirm Syria's statements regarding the non-nuclear nature of the destroyed building." In June 2011, the IAEA Board of Governors issued a resolution on Syria, noting with serious concern Syria's lack of cooperation with the IAEA on the site and that the site itself was a breach of Articles 41 and 42 of Syria's NPT Safeguards Agreement which constitutes non-compliance with its obligations with the Agency in the context of Article XII.C of the Agency's Statute. See: IAEA Board of Governors, "Implementation of the NPT Safeguards Agreement in the Syrian Arab Republic," GOV2011/41, 9 June 2011.

¹⁹ "Riyadh will build nuclear weapons if Iran gets them, Saudi prince warns," *The Guardian*, 29 June 2007. See also, Mark Hibbs, "Saudi Arabia's Nuclear Ambitions," Q&A, Carnegie Endowment for International Peace, 20 July 2010.

²⁰ "North Korea Helping Myanmar's Secret Nuclear Program," ABC News, 10 June 2010; see also: "Myanmar's Special Weapons," *Globalsecurity.org* country report: <http://www.globalsecurity.org/wmd/world/myanmar/index.html>

²¹ George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn, "A World Free of Nuclear Weapons," *The Wall Street Journal*, January 4, 2007; p. A15

The Geneva Conventions of 1949 outlines rules to protect populations during armed conflict and require the distinction between civilians and soldiers, particularly the prohibition of indiscriminate methods of attack that are not directed at a specific military target. The conventions also prohibit weapons that cause unnecessary injury, long-term hard and severe environmental damage. Specific types of weapons however are not referenced in the conventions, although many believe that given the extremely destructive, and indiscriminate, power of nuclear weapons, they should be specifically prohibited. These critics contend that the use of nuclear weapons clearly violates international humanitarian law regarding armed conflict. This section outlines the international treaties governing nuclear weapons, where they can be placed, tested, including resolutions and discussions related to their use. Denmark is a full state party to all the treaties mentioned below, except for the Antarctic Treaty where Denmark holds status as a Non-Consultative Party.

a. Convention and Treaties

The Nuclear Non-Proliferation Treaty

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT), also known as the Nuclear Non-Proliferation Treaty, entered into force on 5 March 1970 and is the only international treaty that governs nuclear weapons and weapons technology. Its objective is to prevent the proliferation of nuclear weapons while promoting cooperation in the peaceful uses of nuclear energy and represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States. These three pillars make up the 'bargains' of the treaty where the NWS pledge to negotiate nuclear disarmament and the non-nuclear weapon states pledge not to acquire nuclear weapons with the right to peacefully pursue nuclear technology to occur "without discrimination." Under the treaty, the possession of nuclear weapons is prohibited by all states, except for NWS, which are defined as states that have manufactured and exploded a nuclear weapon or other nuclear explosive devices prior to January 1, 1967. Accordingly, the membership is limited to five NPT-recognised NWS: China, France, Russia, the United Kingdom and the United States with the remaining states party to the treaty categorised as non-nuclear weapons states (NNWS). India, Israel and Pakistan never signed the NPT while North Korea had acceded to the treaty in 1985 as a non-nuclear weapon state; but withdrew from it in 2003.²²

The NNWS agree to safeguards under the auspices of the International Atomic Energy Agency (IAEA) to provide credible assurances to the international community that nuclear materials and other specified items are not diverted from peaceful uses. The IAEA independently verifies declarations by member states about their nuclear material and activities with the nature and scope of such declarations stemming from the type of safeguards agreement that a member state has in force with the Agency.²³ These safeguards do not apply to the NWS, although all five have concluded safeguards which they have voluntarily offered nuclear material and/or facilities from which the Agency may select to apply safeguards. These safeguards agreements vary in the scope of materials and facilities covered, i.e. excluding those with national security significance (such as weapons facilities) and also allow for the possibility of withdrawing such material and

²² North Korea decided to withdraw from the treaty in 1993 but subsequently suspended its withdrawal. That is, until it formally withdrew in 2003.

²³ These agreements are of three main types: 1) comprehensive safeguards agreements; 2) item-specific safeguards agreements, and 3) voluntary offer agreements. A State with any of these agreements may also conclude a protocol additional to its safeguards agreement (called an 'additional protocol').

facilities from safeguards. These agreements allow the Agency to test innovative safeguards methods and/or give the Agency experience that it might not otherwise gain in safeguarding advanced nuclear fuel cycle facilities and to fulfill the expectation of the NNWS that at least some facilities in the NWS are subject to safeguards. These safeguards are also applied as a result of legal obligations arising from other safeguard agreements and for efficiency reasons (i.e. to verify transfers of nuclear materials when it is more cost effective to verify such transfer in the exporting NWS than in the receiving NNWS).²⁴ While the treaty was originally conceived with a limited duration of 25 years, the signing parties agreed at the 1995 NPT Review Conference to indefinitely extend the treaty, without conditions.²⁵

Antarctic Treaty

Signed in December 1959 by the twelve countries whose scientists had been active in and around the Antarctica during the International Geophysical Year of 1957-58, the Antarctic Treaty was the first of the so-called 'nonarmament' agreements established during the cold war. The treaty entered into force in 1961 and stipulates that Antarctica will be used for peaceful purposes only, thereby banning military activity on the continent (Article I) with the expressed prohibition of nuclear explosions or disposal of radioactive wastes (Article V). In other words, the treaty ensures that the earth's only uninhabited continent remains free from nuclear weapons. Under the treaty, "all areas of Antarctica, including all stations, installations and equipment within those areas... shall be open at all times to inspection" (Art. VII). The treaty and its related agreements, collectively known as the Antarctic Treaty System (ATS), are administered by the Antarctic Treaty Secretariat which is headquartered in Buenos Aires, Argentina²⁶ and has 48 States Parties.²⁷ Denmark is a Non-Consultative Party to the Treaty.²⁸

Outer Space Treaty

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (known as the Outer Space Treaty) provides that the exploration, scientific investigation and use of outer space are open to all states without discrimination. Article IV of the treaty prohibits the placement "in orbit around earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install[ing] such weapons on celestial bodies, or station[ing] such weapons in outer space in any other manner." It limits the use of the Moon and other celestial bodies to peaceful purposes and expressly prohibits their use for testing weapons of any kind, conducting military maneuvers, or establishing military bases, installations and fortifications (Art. IV).²⁹ Article IV therefore only prohibits the stationing of nuclear weapons (and other WMD) in outer space and does not cover the development or ground-testing of weapons designed to be placed in space, nor the deployment on the ground of nuclear powered weapons, such as "pop-up weapons" designed for use against space objects.³⁰ It also does not prohibit the development, testing, and deployment of ground-

²⁴ See: "The Safeguards System of the International Atomic Energy Agency":

http://www.iaea.org/OurWork/SV/Safeguards/safeg_system.pdf

²⁵ The 1995 NPT Review Conference also listed 13 steps toward disarmament that have yet to be implemented, including a resolution calling for the Middle East to become a zone free of weapons of mass destruction. See: UN Office for Disarmament Affairs, "1995 NPT Review Conference," <http://www.un.org/disarmament/WMD/Nuclear/1995-NPT/1995NPT.shtml>

²⁶ Since September 2004.

²⁷ As of 1 May 2011.

²⁸ Non-Consultative Parties are invited to attend Consultative Meetings but do not participate in the decision-making.

²⁹ The treaty however does not prohibit the placement of conventional weapons in orbit.

³⁰ Temporary or 'pop-up weapons' are temporary space weapons that are not permanently in orbit.

based or space-based non-nuclear anti-satellite (ASAT) systems, nor does it prohibit laser and other directed-energy weapons that are discriminate in character. The treaty entered into force on 10 October 1967 and as of 1 May 2011, 98 States have ratified the treaty and another 27 have signed and have yet to ratify it. The Treaty contains no verification provisions.

Seabed Treaty

The Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (known as the Seabed Treaty) entered into force in May 1972. Article I of the treaty prohibits the emplacement of nuclear weapons or other types of WMD, including structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons. Like the Antarctic and Outer Space treaties, the Seabed Treaty, sought the prevention of international conflict and nuclear weapons in an area already free of them. The treaty adopted a 12-mile limit to define the seabed area but, unlike the Antarctic Treaty (but similar to the Outer Space treaty), the Seabed Treaty has no third-party verification, leaving States Parties to undertake verification by their own national means, with the assistance of other parties or through appropriate international procedures within the framework of the UN and in accordance with its Charter. Ninety-five countries are currently party to the Treaty.

Nuclear-Weapons Free Zones

Article VII of the NPT affirms the right of countries to establish specified zones region in which countries commit themselves not to manufacture, acquire, test or possess nuclear weapons. Five such nuclear-weapon-free zones (NWFZ) zones exist today: Latin America (1967 Treaty of Tlatelolco), the South Pacific (1985 Treaty of Rarotonga), Southeast Asia (the 1995 Treaty of Bangkok), Africa (the 2009 Treaty of Pelindaba) and Central Asia (2006 Treaty of Semipalatinsk). With four NWFZs spanning the entire Southern Hemisphere, plus the provisions of the Antarctic Treaty, all territory south of the equator has been deemed free of nuclear weapons. It should be noted however that the nuclear weapon states, citing their freedom at the sea, assert that the zones do not apply to their ships and aircraft that might be carrying nuclear weapons.³¹ There is also debate surrounding Australia's 'nuclear-free' status as a member of the South Pacific NWFZ while it simultaneously relies on the extended nuclear deterrence provided by US nuclear forces.

Basic elements common to all existing NWFZ treaties is their commitment by states parties not to manufacture, acquire, test or possess nuclear weapons; an indefinite duration of NWFZs; a withdrawal option;³² the right to use nuclear energy for peaceful purposes; that none can be subjected to the conditions by its NNWS parties and that each party must adopt comprehensive safeguards agreements by the IAEA to verify that NWFZ states are not pursuing nuclear weapons illicitly. The Central Asian NWFZ goes further in requiring states in the region to adopt the IAEA's Additional Protocol, which provides for expanded monitoring by the Agency.

³¹ A dispute also exists over the inclusion of the Chagos Archipelago, which hosts the U.S. military base at Diego Garcia in the Indian Ocean, as part of the African NWFZ. Neither the U.S. nor the UK recognise Diego Garcia as being subject to the Pelindaba Treaty.

³² All the NWFZ treaties, except for the Treaty of Tlatelolco, require 12 months' advance notice for a state party to end its treaty obligations. According to the Tlatelolco Treaty, states parties are required to give three months' advance notice.

Test Ban Treaties

The 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, also known as the Partial Test Ban Treaty (PTBT) bans the testing or any other nuclear explosion in the atmosphere, including outer space or under water, territorial waters or high seas. An argument could even be made that succeeding state practice (specifically the restraint by NWS from conducting atmospheric tests) has transformed this obligation into a rule of customary international law.³³ As the treaty prohibits “any nuclear weapon test explosion, or *any other nuclear explosion*” [emphasis added], it may prohibit the use of nuclear fission as a means of space propulsion. Accordingly, the PTBT included peaceful nuclear explosions, which in terms of effects on health and environment, were qualitatively no different from weapons tests. As of 1 August 2011, there are 125 states party to the PTBT.

The PTBT also prohibits the use of nuclear explosions for non-testing purposes as well. To exemplify this point, while the creation of an electromagnetic pulse in space by means of a nuclear detonation may provide a strategic military advantage, particularly in an anti-satellite role, such activity is forbidden by the Treaty. However, to the extent that nuclear power sources operate by means other than “explosion,” the Treaty does not prohibit their use. The PTBT also does not contain any verification provisions and does not ban the testing of nuclear weapons underground and therefore provided a testing loophole that the NWS used. Indeed, testing of nuclear weapons continued not only underground, but also increased greatly in number with the world not witnessing any significant decrease in nuclear testing activities until the early 1990s.³⁴

To address the PTBT’s deficiencies in verification and the overall objective of eliminating nuclear testing, over sixty states at the 1991 PTBT Amendment Conference in New York supported initiating negotiations on a Comprehensive Test Ban Treaty (CTBT). While the US and the UK were opposed, NGOs working in concert with the NNWS successfully lobbied one-third of the PTBT depository governments to support a proposal to amend the Treaty.³⁵ Prospects for negotiating a CTBT increased after the Soviet Union declared a moratorium on nuclear testing in 1991, followed by the UK and the US imposing moratorium legislation until 1993, and subsequently through 1994.³⁶ The CTBT was opened for signature in 1996 and prohibits all forms of nuclear testing, including peaceful tests. The Treaty however does allow for subcritical nuclear tests where no actual nuclear explosion occurs.³⁷ While the CTBT has not yet entered into force, the NWS signing it have formally undertaken to follow the treaty’s provisions. Thus, no NPT-recognised NWS have conducted any nuclear tests since either their unilateral moratoriums declared in the early 1990s or with CTBT signature.³⁸

³³ See: Vienna Convention on the Law of Treaties, Art. 38, May 23, 1969, 1155 U.N.T.S. 331 (noting the possibility that rules set forth in treaties may become binding on third states as rules of customary international law).

³⁴ Notably, China and France did not sign the PTBT and carried out atmospheric testing until 1980 and 1974 respectively. Nearly 2,050 nuclear tests were conducted in the period 1945-1995. Of these, more than 500 were conducted in the atmosphere, under water or in space and the rest tested underground. See the Comprehensive Test Ban Treaty Organization’s Preparatory Commission website: www.ctbto.org (under Nuclear Testing, ‘World Overview’).

³⁵ Therefore, the UK and the US were obligated to convene the 1991 PTBT Amendment Conference.

³⁶ Provided that no other country tested.

³⁷ A subcritical test implies testing of fissile materials that can be used for nuclear weapons in amounts that do not reach a critical mass, meaning the nuclear reaction cannot sustain itself and the explosion fails. One way to conduct subcritical tests is by using smaller amounts of fissile materials (ie. A kilogram or so of weapons-grade uranium or plutonium) which is compressed by conventional explosive materials in a construction at least in some ways resembling the real nuclear weapon.

³⁸ France, Russia and the UK have ratified the CTBT while China and the US have signed, but not yet ratified the treaty. The Soviet Union’s last nuclear test took place on 24 October 1990; the UK last tested on 26 November 1991; the US on 23

Although 182 states have signed, and 153 states have ratified the CTBT as of 1 August 2011,³⁹ the CTBT can only enter into force after ratification by the forty-four states in the world with nuclear power or research facilities (so-called Annex II states). Of these forty-four states, three (India, Pakistan and North Korea) have not yet signed the treaty, with seven others (China, Congo, Egypt, Indonesia, Iran, Israel and the US) signing, but not yet ratifying the treaty. Unlike the PTBT, the CTBT does provide for verification designed to detect any nuclear explosion whether underground, underwater or in the atmosphere. This International Monitoring System (IMS) consists of 321 monitoring stations and sixteen laboratories which will operate in eighty-nine countries that use seismic, hydroacoustic and infrasound stations to monitor the underground, the oceans and atmosphere respectively. Additionally radionuclide stations detect radioactive debris from atmospheric explosions or vented by underground or underwater explosions. Denmark hosts two (already certified) stations in Greenland: an infrasound station at Qaanaaq and an auxiliary seismic station at Sondre Stromfjord. The Preparatory Commission for the Comprehensive Nuclear-Test Ban Treaty Organization (CTBTO), established in 1996 with its headquarters in Vienna, serves as an interim organisation tasked with building up the CTBT's verification regime in preparation for the treaty's entry into force. To date, 264 stations have been certified by the CTBTO.⁴⁰

Convention on the Physical Protection of Nuclear Material

The Convention on the Physical Protection of Nuclear Materials (CPPNM) was signed in 1980 and entered into force in February 1987. The Convention is the only international legally binding treaty in the area of physical protection of nuclear materials, and establishes measures related to the prevention, detection and enforcement of offences relating to nuclear materials. The Convention was amended in July 2005 to strengthen its provisions by making it legally binding for States Parties to protect nuclear facilities and materials for peaceful uses, storage and transport. It also provides for expanded cooperation between and amongst states regarding rapid measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological effects of sabotage and prevent combat-related offences. The Amendments thereby will apply more thorough and systematic measures to protect a States Party's domestic nuclear activities against criminal or terrorist attack, and criminalises inter alia sabotage of nuclear facilities and trafficking. These amendments however have not yet taken effect as they require ratification by two-thirds of its States Parties.⁴¹ UN Security Council Resolution 1887, adopted unanimously on 24 September 2009 called for universal adherence to the CPPNM and its 2005 Amendment. Currently, 145 states are party to the Convention (including all Member States of the EU) with forty-nine that have accepted, approved or ratified the amendment. Denmark approved the amendment in May 2010.

September 1992, France in January 1996 and China in July 1996 (the latter two both conducted their tests before signing the CTBT). France also closed and dismantled all its nuclear tests sites in the 1990s – the only NWS to date that has done so.

³⁹ Thirteen states have yet to sign the treaty.

⁴⁰ See the CTBTO's World Map at: <http://www.ctbto.org/map/#ims>

⁴¹ After the amendments enter into force the treaty will become known as the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities.

b. Legality of the Threat or Use of Nuclear Weapons

ICJ Advisory Opinion

The efforts of the World Court Project (WCP) – a loosely organised international citizens' initiative – began an international campaign in 1992 with the objective to persuade the UN to use Article 96 of the UN Charter to request the International Court of Justice (ICJ) to address, for the first time, the legal status of nuclear weapons. Indonesia and the countries of the Non-Aligned Movement (NAM) tabled a resolution on the topic to the UN First Committee on Disarmament and International Security in 1993. In response, the US, UK and France sent delegations to many NAM capitals threatening trade and aid if the resolution was not withdrawn. According to a Swedish delegate at the time: “during my twenty years' experience as a UN delegate, I have never seen such supreme power politics openly being used as during the fall of 1993.”⁴² A month later, Indonesia deferred the action. The WCP however kept its momentum and in 1994, a final vote of the resolution was adopted by 78 votes to 43, with 38 abstentions and 25 not voting.⁴³

Upon request by the UN General Assembly, the ICJ provided an Advisory Opinion regarding the legality of the threat or use of nuclear weapons on 8 July 1996. The ICJ opinion concluded unanimously that neither customary nor conventional international law authorises the threat or use of nuclear weapons. International law does not declare nuclear weapons are illegal; but the ICJ did state (in a split decision) that the threat or use of nuclear weapons would generally be contrary to rules of international law applicable in armed conflict. The Court however was not able to conclude whether threat or use would be lawful or unlawful in “an extreme circumstance of self-defence, in which the survival of a State would be at stake.” Accordingly, the issue of self-defence was left open – continuing the ambiguity about what type of ‘extreme circumstance’ would prompt a retaliatory nuclear strike. Not only does international law leave this issue to interpretation, but also academically and politically the topic is barely addressed. To this end, the legality of the threat or use of nuclear weapons has not yet been determined completely. It has been argued that this inability to delineate the legal boundaries of using nuclear technology in international law poses as much of a challenge to human safety and security as the weapons themselves.⁴⁴ Notably, however, the ICJ opinion unanimously concluded that an obligation exists to pursue and bring to a conclusion negotiations leading to nuclear disarmament under strict and effective international control. This obligation applies to those states outside of the NPT as well as the NPT-recognised nuclear powers.

Since the 1996 ICJ opinion, some courts have recognised the legality of disarmament actions. In October 1999, a Scottish judge dismissed a case against three women who had caused damage at a base which was part of a Trident nuclear submarine programme. The judge cited the ICJ opinion and claimed that the women were justified in their actions because they were attempting to thwart the use of nuclear weapons. In June 1999, a jury in the state of Washington found four activists not guilty of blocking into a Trident

⁴² Speech at WCP Implications Seminar, Episcopal Church Center, New York, 19 April 1995.

⁴³ China did not vote, which was embarrassing for the other nuclear states. Reportedly it did consider supporting the resolution, but backed off when its UN mission was advised that “threat” implied possession. See: Kate Dewes and Commander Robert Green (Retd), “The World Court Project: How a Citizen Network can Influence the United Nations,” *Pacifica Review*, La Trobe University, Melbourne, October/November 1995.

⁴⁴ Decision by The Hague International Model UN 2011, “Follow-up on the Advisory Opinion of the International Court of Justice on the Legality of Threat or Use of Nuclear Weapons,” 23-28 January 2011.

nuclear submarine base, relying on international law, including the ICJ opinion in its judgment.⁴⁵ In response to the US government asking the court to reconsider its earlier ruling, the court noted in November 2010 that “since any use of a nuclear weapon could cause indiscriminate harm and unnecessary suffering, the threat of such use is illegal. Reprisal/retaliation is not a justification for use of any nuclear weapon system; humanitarian law applies in that circumstance as others.” The Washington court also noted that the Trial Chamber of the International Criminal Tribunal for the Former Yugoslavia stated: “No circumstances would legitimise an attack against civilians even if it were a response proportionate to a similar violation perpetrated by the other party.”⁴⁶

Other attempts at using the ICJ opinion however have been mixed. As examples, in 1999, eleven members of a citizen weapons inspection team calling themselves Raytheon Peacemakers were sentenced to one year unsupervised probation, plus \$25 witness protection fee or seven hours community service while one man was sentenced to 41 months and another for 30 months in federal US prison for sabotage, conspiracy and destruction of government property following their Ploughshares action in August 1998.⁴⁷ The latter initially facing between 63-97 months, sentencing guidelines were downgraded by the judge on the basis of arguments that there were reasonable motives for the offence on moral grounds and the ICJ opinion.⁴⁸

General Assembly Resolutions and Human Rights Committee

The first resolution adopted by the UN General Assembly (UNGA) in 1946 was on nuclear weapons, specifically providing for the establishment of an Atomic Energy Commission tasked with formulating proposals to eliminate nuclear weapons. While the emphasis remained on disarmament, the wartime use of weapons and the implications for their use for fundamental human rights, including the right to life, began to appear in UN bodies in the 1960s. In 1961, UNGA adopted resolution 1653 (XVI) which declared that the use of nuclear and thermonuclear weapons is in violation of the UN Charter which states that “indiscriminate suffering and destruction to mankind and civilisation... is contrary to the rules of international law and to the laws of humanity.”⁴⁹ This resolution was reaffirmed in 1978, 1979 and 1981. Similarly, the UN Human Rights Committee has noted that “the designing, testing, manufacture, possession and deployment of nuclear weapons are among the greatest threats to the right to life which confront mankind today. This threat is compounded by the danger that the actual use of such weapons may be brought about, not only in the event of war, but even through human or mechanical error or failure.”⁵⁰ Furthermore, the Committee commented that the production, testing, possession, deployment and use of nuclear weapons “should be prohibited and recognised as crimes against humanity”⁵¹ and called on states to make steps to eliminate them.⁵² The UN Millennium Declaration (September 2000) also underscored the desire to “strive for the elimination of weapons of mass destruction, particularly nuclear weapons, and to keep all options open for achieving this aim...”⁵³

⁴⁵ United States District Court Western District of Washington at Tacoma, Case N. CR10-5586 BHS, Response to Government’s Request for a Motion in Limine and Motion to Reconsider Court’s Earlier Ruling on Necessity, November 2010.

⁴⁶ Ibid, p. 2.

⁴⁷ For hammering and pouring blood on the launching pad of a Minuteman III nuclear missile.

⁴⁸ See “Court Cases” on the Lawyers Committee on Nuclear Policy website: <http://lcnp.org/wcourt/Court%20cases.htm>

⁴⁹ UN General Assembly Resolution 1653 (XVI), 1961.

⁵⁰ UN Human Rights Committee, General Comment 14: Nuclear Weapons and the Right to Life (Art. 6), 1984, para 4.

⁵¹ UN Human Rights Committee, General Comment 14, para 6.

⁵² UN Human Rights Committee, General Comment 14, para 7.

⁵³ UN General Assembly Resolution 55/2 of 8 September 2000.

Since the 1980s, some states have argued in various international forums that the use of nuclear weapons is prohibited by Article 6 of the International Covenant on Civil and Political Rights (ICCPR). Many NGOS have also asserted in communications submitted to the Human Rights Committee, that Article 6 also prohibits the possession, testing and deployment of nuclear weapons. Article 6 expresses that every human has the inherent right to life, that this right shall be protected by law, and that no one shall be arbitrarily deprived of his or her life. According to the Committee, the right is “basic to all human rights”⁵⁴ and no derogation from it is permitted “even in time of public emergency which threatens the life of the nation.”⁵⁵ It is generally considered to be a norm of *jus cogens*. Significantly, Article 6 requires States Parties actively protect the life of their citizens and to avert threats to their life.⁵⁶ Analytically then, while the ICJ opinion was unable to conclude whether nuclear use would be lawful or unlawful in an extreme circumstance of self-defence, Article 6 of the ICCPR applies the right to life even when the life of the nation is at risk.

In 2008, the International Campaign to Abolish Nuclear Weapons (ICAN) submitted a paper to the UN Human Rights Committee examining Australia's compliance with Art. 6 of the ICCPR in relation to nuclear weapons. In its paper, ICAN outlined several policies of the Australian Government concerning nuclear weapons to be inconsistent with the ICCPR. Specifically, ICAN argued that Australia's reliance on extended US nuclear deterrence and its allowance of US nuclear-armed submarines coupled with the presence of the US Joint Defence Space Research Facility in central Australia place people within the territory at a heightened risk of nuclear attack and therefore a violation of Australia's obligations under ICCPR's Art. 6. For ICAN, respecting the right to life requires governments to minimise the danger that its population would be directly targeted by nuclear weapons, whether by states or non-state actors. Accordingly, ICAN argues that the Australian government needs to reduce the role of nuclear weapons in its own security policies, eschewing any policy supportive of the proposition that nuclear weapons bring security, including reliance on nuclear deterrence.⁵⁷

c. UN Security Council resolutions

UNSC 1540

In April 2004, the UN Security Council (UNSC) adopted Resolution 1540 under Chapter VII of the UN Charter, obliging States, inter alia, to refrain from supporting by any means non-state actors from developing, acquiring, manufacturing, possessing, transporting, transferring or using nuclear, chemical or biological weapons and their delivery systems. The Resolution imposes binding obligations on all states to establish domestic controls to prevent the proliferation of nuclear, chemical and biological weapons and their means of delivery, although it does not define nor outline the scope of sufficient export controls. Not surprisingly, for many states, the obligations accruing from the resolution are simply not clear which is reflected in its various reporting requirements. For example, Yemen's submission is only five lines long while others have done even less: according to a report from the 1540 Committee to the Security Council

⁵⁴ UN Human Rights Committee, General Comment 14, para 1.

⁵⁵ UN Human Rights Committee, General Comment 6, para 1.

⁵⁶ See *Dermit Barbato v Uruguay*, Communication No 84/1981 (21 October 1982); *Bleier v Uruguay*, Communication No 30/1978 (29 March 1982); *Herrera Rubio v Colombia*, Communication No 161/1983 (2 November 1987).

⁵⁷ ICAN, “Australia, Nuclear Weapons and the Right to Life: Australia's Compliance with Article 6 of the International Covenant on Civil and Political Rights in respect of Nuclear Weapons,” 26 October 2008.

in April 2006, roughly a third of the UN membership (62 countries) had yet to submit their first national report by the end of the panel's original two-year term.⁵⁸ On 20 April 2011, the UNSC extended the mandate of the 1540 Committee for ten years, until 25 April 2021.

UNSC 1887 on nuclear security

At a historic summit meeting presided over by US President Barack Obama, the Security Council pledged to support broad progress on efforts to curb the proliferation of nuclear weapons and ensure reductions in existing stockpiles, as well as control of fissile material. Under the Resolution, the UNSC reaffirmed its support for the NPT and called on all States Parties and those involved in “major challenges to the non-proliferation regime”⁵⁹ to comply fully with its obligations. The text underlined the right to pursue peaceful nuclear energy under IAEA supervision and urged states to limit the export of nuclear-related material to countries that had terminated their compliance with Agency safeguard agreements. Additionally, the UNSC called for all States to refrain from nuclear testing and to ratify the CTBT, and for the Conference on Disarmament (CD) in Geneva to negotiate a treaty banning the production of fissile materials for explosive devices. In essence, the resolution reaffirms many of the disarmament commitments—non-legally binding political statements—by the NWS during both the 1995 Non-Proliferation Treaty (NPT) Review and Extension Conference and the 2000 NPT Review Conference, some of which ignored and even rejected by subsequent leaders.⁶⁰ As the balance between measures to promote nuclear disarmament and enhance nonproliferation efforts in the document clearly favours the latter objective, Resolution 1887 represents mixed signals from the Obama administration. The president's disarmament agenda espouses a general reinvigoration of multilateral efforts to work towards the security of a world without nuclear weapons, which did result in modest dividends in the context of the 2010 NPT Review Conference. However, the nonproliferation focus of the resolution evinces a studied pragmatism that recognizes the difficulty in seeking such a document through the consensus based NPT review process. The resolution called for the convening of a Nuclear Security Summit in 2010 which was hosted by the US in April 2010 with another security summit planned in Seoul, South Korea in March 2012. Forty-seven governments were invited to attend the first; but Denmark, as a non-nuclear energy and non-nuclear weapons state, has not been invited to participate in the summits.⁶¹

Resolutions and Sanctions on DPRK and Iran

North Korea has been the focus of UN Security Council Resolutions in 2009 (UNSCR 1874) which condemned DPRK's nuclear test in May of that year and called on Pyongyang to renounce nuclear weapons, join the NPT as a non-nuclear weapons state and sign the CTBT. Previous resolutions such as resolution 825 (1993) had called on DPRK to reconsider its withdrawal from the NPT and to allow IAEA

⁵⁸ The resolution established the 1540 Committee to report to the UNSC on implementation of the Resolution. Resolution 1810 (2008) called upon all states that have not yet presented a first draft report on steps taken or intentions to implement the resolution to submit such a report to the 1540 Committee without delay.

⁵⁹ The Resolution did not name specific countries.

⁶⁰ See Lawrence Scheinman, “Disarmament: Have the Five Nuclear Powers Done Enough?” *Arms Control Today*, Arms Control Association, January/February 2005, and Sharon Squassoni, “Grading Progress on 13 Steps Toward Disarmament,” *Policy Outlook*, Carnegie Endowment for International Peace, May 2009.

⁶¹ This serves as a source of frustration for many Danish officials, but the rationale for its exclusion is in many respects valid as Denmark is not a nuclear energy country (and therefore, as an example, is not listed in the CTBT's Annex 2 states required for CTBT entry into force). And while Denmark has provided funding for nuclear security assistance to the IAEA, it does not actively engage in bilateral assistance. Indeed much of Denmark's international profile on non-proliferation has been reduced over the years (see Section 7 on Danish Law and Policy on Nuclear Weapons).

inspectors back into the country; resolution 1695 (2006) which banned the selling of materials to DPRK that would further the ability of its ballistic missiles programme; and resolution 1718 (2006) which imposed a series of economic and commercial sanctions. Similarly, concerns over Iran's nuclear programme have led to the UN Security Council to pass seven resolutions on Iran:

- Resolution 1696 (2006) – demanding Iran suspend its uranium enrichment activities, invoking Chapter VII of the UN Charter to make that demand legally binding on Iran.
- Resolution 1737 (2006) imposing sanctions after Iran refused to suspend enrichment activities; freezing assets of a number of persons and organisations linked to Iran's nuclear and missile programs and established a committee to monitor sanctions implementation.
- Resolution 1747 (2007) expanded the list of sanctioned Iranian entities and welcomed the proposal by the permanent five member of the Security Council plus Germany for resolving issues regarding Iran's nuclear programme.
- Resolution 1803 (2008) extended sanctions to additional persons and entities, imposed travel restrictions on sanctioned persons and bars exports of nuclear and missile-related dual-use goods to Iran.
- Resolution 1835 (2008) reaffirmed the preceding four resolutions, the only one of seven not to invoke Chapter VII.
- Resolution 1929 (2010) imposed a complete arms embargo on Iran and banned Tehran from any activities related to ballistic missiles and authorised the inspection and seizure of shipments violating these restrictions and extended the asset freeze to the Iranian Revolutionary Guard Corps (IRGC) and the Islamic Republic of Iran Shipping Lines (IRISL). A number of countries imposed measures to implement and extend these sanctions, including the US, EU, Australia, Canada, Japan, Norway, South Korea and Russia.
- Resolution 1984 (2011) extends for a further 12 months the mandate of the Panel of Experts established under Resolution 1929.

6. Multilateral Export Control Mechanisms

Multilateral export controls noted below are informal mechanisms and therefore voluntary (except for the EU regulation) and not governed by international treaty. They contain neither secretariats nor binding obligations. Many states argue that these mechanisms are discriminatory and impede implementation of Art. IV of the NPT on the right to peaceful uses of nuclear technology. While most of the trade in nuclear materials, equipment and technology involves members of these mechanisms or involves an NSG member as a buyer or seller, new non-member countries are entering the market and are selling to both members and non-members. Additionally, an exemption by the Nuclear Suppliers Group (NSG) to open trade to India, a non-NPT state, has added a new and thirsty importer to the global market challenging how foreign

partners can continue to apply their existing export controls. In other words, the spread of nuclear dual-use technology has grown beyond the NSG and has become a global phenomenon.

Given that there are no global export control standards outside of the NSG and Zangger Committee, there is a concern that a further tightening of multilateral mechanisms can risk creating new opportunities for other forms of cooperation among non-members. To this end, there are some non-proliferation and disarmament groups that examine the role of industry to help manage the growing nuclear challenges faced and look to them in assisting the development of internationally agreed arrangements for effective control of sensitive nuclear technology (enrichment and reprocessing) and the development of a comprehensive 'code of conduct' ranging from responsible uranium supply to support for the development of proliferation-resistant fuel cycle technologies.⁶² Until that time, many supplier states will continue to follow the general guidelines of the following informal multilateral export controls.

Nuclear Suppliers Group (NSG)

After the 1974 nuclear explosion by India, the supplier countries of nuclear technology formed the Nuclear Suppliers Group (NSG) as an informal grouping to apply guidelines for Participating Governments to help ensure that nuclear transfers would not be diverted to unsafeguarded nuclear fuel cycle or nuclear explosive activities. The NSG Guidelines are implemented by the Participating Governments in accordance with their own national laws and practices. Accordingly, decisions on export applications are made at the national level in line with its national export licensing requirements. Forty-six states are currently part of the group, with the European Commission participating as an observer.⁶³ In 2008 the NSG granted a waiver to India, allowing nuclear materials and NPT-trade with India, a non-party to the NPT. The exemption has created yet another tier within the multilateral and international governance of nuclear weapons and is complicating further issues within the Conference of Disarmament, the world's only forum for disarmament negotiations, specifically on negotiations leading to a Fissile Material Cut-off Treaty. In this case, Pakistan is arguing that negotiations cannot start until agreement that all fissile material production be stopped, not just 'cut-off' and that it also must be verified. Pakistan is also arguing that the NSG exemption can allow India to divert its materials and technologies to increase its NW stockpile while imports from outside feed its nuclear energy programme. The exemption also has implications for many states on how to implement their existing controls with countries such as Australia – a country that will not export uranium to a non-NPT state – having to reconcile proliferation risks with commercial ones.

Missile Technology Control Regime (MTCR)

The Missile Technology Control Regime (MTCR) is also an informal and voluntary association of countries which seek to coordinate national export licensing efforts of unmanned delivery systems capable of delivering WMD. Originally established in 1987 by the Group of Seven (G7) countries (Canada, France, Germany, Italy, Japan, the UK and US), the number of MTCR partners today stands at thirty-four. The MTCR applies a common list of controlled items (MTCR Equipment, Software and Technology Annex) with national export licensing measures on these technologies curbing another's ability to acquire and produce unmanned means of WMD delivery. The Annex is divided into 'Category I' and 'Category II' items. Category I items are those where greatest restraint is applied and includes complete rocket systems

⁶² See for example, Martine Letts and Fiona Cunningham, "The role of the civil nuclear industry in preventing proliferation and in managing the second nuclear age," Paper prepared for the Second Meeting of the International Commission on Nuclear Nonproliferation and Disarmament (ICNND), Washington, 13-15 February 2009.

⁶³ See the homepage of the NSG: <http://www.nuclearsuppliersgroup.org>

(including ballistic missiles, space launch vehicles and sounding rocks) and unmanned air vehicle systems (ie. cruise missile systems, target and reconnaissance drones) with capabilities exceeding 300-500km range/payload threshold along with production facilities for such systems and major sub-systems including rocket stages, re-entry vehicles, rocket engines, guidance systems and warhead mechanisms. Category II items include rocket systems and unmanned vehicles not covered in item I, capable of a maximum range equal to or greater than 300 km. It also includes a wide range of equipment, material and technologies, most of which have other uses than for missiles capable of delivery WMD. While partners agree to exercise restraint in exports or transfers of Category II items, the regime allows for greater flexibility in the treatment of such transfer applications.

The Regime's MTCR Guidelines define the purpose of the group and provide the overall structure and rules to guide member countries and those adhering unilaterally to the Guidelines. The Guidelines state that the Regime "is not designed to impede national space programs or international cooperation in such programs as long as such programs could no contribute to delivery for systems for weapons of mass destruction."⁶⁴ Accordingly, MTCR partners are careful with space-launch vehicle (SLV) equipment and technology transfers since the technology used in an SLV is virtually identical to that used in a ballistic missile and thus a genuine potential for missile proliferation.

Zangger Committee

Another voluntary export control grouping was formed following the NPT's entry into force to serve as a "faithful interpreter" of Art. III by harmonising the interpretation of nuclear export control policies for NPT States Parties. The Zangger Committee⁶⁵ maintains a Trigger List (triggering safeguards as a condition of supply) of nuclear-related strategic goods to assist NPT Parties in identifying equipment and materials subject to export controls. Attached to the Trigger List is an annex which clarifies or defines the equipment and material in some detail. The evolution of developments in technology have meant the Committee has been periodically engaged in considering revisions to the trigger list and the original annex with eight clarification exercises taken to date. The Committee has thirty-eight members including the five NPT-recognised NWS. The Committee's understandings are published by the IAEA in the INFIRC/209 series.

EU dual-use regulation (2000, strengthened 2009)

In May 2009, the European Council adopted a regulation setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.⁶⁶ The regulation replaces an earlier dual-use regulation from 2000⁶⁷ and introduces EU-wide powers to control transit and brokering for dual-use items that may be intended for use in a WMD programme, or their delivery systems. The regulation defines dual-use items as "items, including software and technology, which can be used for both civil and military purposes, and shall include all goods which can be used for both non-explosive uses and assisting in any way in the manufacture of nuclear weapons or other nuclear explosive devices."⁶⁸ The regulation lays down rules for information exchange and consultation between EU Member States, sets-up a Coordination Group to address application questions, introduces the Community Export Authorisation, makes use of a

⁶⁴ MTCR Guidelines for Sensitive Missile-Relevant Transfers: <http://www.mtcr.info/english/guidetext.htm>

⁶⁵ See the homepage of the Zangger Committee: <http://www.zanggercommittee.org/Seiten/default.aspx>

⁶⁶ 7815/09, 7815/09 COR1.

⁶⁷ EC No 1334/2000.

⁶⁸ EC No 428/2009, 5 May 2009, Art. 2.

'catch-all clause' and lists subjects for intra-Community transfer and control. Note: in Denmark, one does not need a license to produce dual-use items domestically, but a license is required for their export (see next section on Danish Law and Policy on Nuclear Weapons).

Other mechanisms

The Proliferation Security Initiative (PSI) was launched by the US in 2003 with the mission to stop shipments of biological, chemical and nuclear weapons, as well as missiles and goods that could be used to deliver or produce such weapons to non-state actors and countries of proliferation concern. The initiative is designed to make it more costly and risky for proliferators to acquire the weapons or materials they seek. PSI however is limited in stopping WMD shipments and dual-use goods as it does not empower countries to do anything that they previously could not do. PSI does not grant governments any new legal authority to conduct interdictions in international waters or airspace. Such interdictions may take place, but they must be confined to what is currently permissible under international law. For example, a ship can be stopped in international waters if it is not flying a national flag or properly registered. It cannot be stopped simply because it is suspected of transporting WMD or related goods. PSI is primarily intended to encourage participating countries to take greater advantage of their own existing national laws to intercept shady trade passing through their territories. Some PSI participants are working to expand their legal authority to interdict shipments by signing bilateral boarding agreements with select countries to secure expedited processes of pre-approval for stopping and searching their ships at sea. The US has concluded such agreements with Belize, Croatia, Cyprus, Liberia, Malta, the Marshall Islands, and Panama.⁶⁹

PSI is an informal arrangement with no list of criteria by which interdictions are to be made (except that the cargo is destined to a recipient that use it to harm the US or other countries). Ten countries⁷⁰ originally joined with the US with an additional 73 countries, including Russia, since publicly joining the initiative. PSI participants however have downplayed the concept of membership, explaining that PSI is an activity, not an organisation.⁷¹

7. Danish Law and Policy on Nuclear Weapons

This section assumes that Danish companies are quite familiar with Danish domestic controls on nuclear or other weapons of mass destruction (particularly if exporting dual-use materials) and as such briefly details existing legal acts; but introduces them in context to Denmark's nuclear weapons policy which has shifted from highly vocal on the topic to less so over the years.

a. The Legacy of Footnotes

Denmark's position as a non-nuclear weapons/non-nuclear energy country gives it added legitimacy in terms of nuclear non-proliferation and disarmament. At the same time, Denmark is also as a member of NATO – a nuclear military alliance and therefore under the umbrella of extended nuclear deterrence by the US. This tension between Danish identity as a non-nuclear state but also a member of a nuclear alliance however has been difficult to reconcile at various times during Danish history. Early on, Denmark added

⁶⁹ Panama (and Liberia) possess the largest fleets of registered ocean-going vessels in the world.

⁷⁰ Australia, France, Germany, Italy, Japan, the Netherlands, Poland, Portugal, Spain and the UK.

⁷¹ See: "The Proliferation Security Initiative at a Glance," Arms Control Association:

<http://www.armscontrol.org/factsheets/PSI>

three restrictions to its NATO membership.⁷² These were further expanded during the so-called 'footnote policies' of the 1980s when the opposition in Christiansborg sought a political weakening of the NATO alliance through inserting footnotes containing reservations or objections into NATO documents that Denmark agreed upon. In May 1987 however, the Foreign Minister declared that he would no longer insert more footnotes in NATO communiqués, irrespective of what Parliament might decide, leading to a fierce debate on foreign policy when the opposition majority challenged the government in April-June 1988.

Prompted by two NATO warships visited Copenhagen's harbour in the fall of 1987, a resolution was passed by the opposition majority in the spring of 1988 in an attempt to tighten Denmark's official policy on banning nuclear weapons in Danish waters and ports. In response, the Prime Minister called parliamentary elections after having a majority against it on foreign policy, which marked a break with the government's previous policy where on 22 occasions during six years it had accepted being out-voted in Parliament on foreign policy without resigning.⁷³ The result of elections however changed little in terms of representation: those parties that had voted for the resolution lost seven seats, but still held a majority while the government was left exactly the same number of seats as before. To break up parliamentary opposition and put an end to the footnote policy, the Conservatives, Liberals and Social Liberals reached an understanding on Denmark's foreign policy, especially that disarmament and arms control should be conducted through an *active* NATO membership. Thereby the opposition majority on foreign policy was eliminated.

The legacy of the footnote policy however still lingers with many of Denmark's politicians reticent to engage publicly on nuclear weapons issues.⁷⁴ Indeed, the Left spectrum of Christiansborg has distanced itself from the footnote policy. That said, Denmark has engaged in non-proliferation and disarmament programmes such as the *G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction* launched at the G8 Summit at Kananaskis in 2002. Under the initiative, Denmark committed more than 18 million EUR as part of the larger US\$20bn initiative to address non-proliferation, disarmament, counter-terrorism and nuclear safety issues. With project contributions through international bodies such as the IAEA and the European Bank for Reconstruction and Development (EBRD) or non-governmental organisations such as Green Cross and Bellona Foundation, the funding was primarily focused on nuclear safety and security issues, with small funding in support of chemical weapons destruction in Russia.

Supporting the efforts of international organisations is appropriately vital to Danish foreign policy; but by focusing solely on assistance through third-party organisations, Denmark missed out on the benefits of direct bilateral non-proliferation assistance and a place at the table with large donors to focus on areas where Danish expertise has a specific advantage. Denmark however has not made any commitments to the G8 initiative since 2004 and staffs only 2.5 people to focus specifically on non-proliferation and disarmament issues in the Ministry of Foreign Affairs.⁷⁵

⁷² First, in 1953 when it introduced a 'no bases policy.' Second in 1957 when Denmark declared that nuclear weapons could not be deployed in its territory during peacetime and third stating that no NATO exercises were allowed on certain parts of the territory that were strategically sensitive for the USSR.

⁷³ Frederik Doeser, "Domestic Politics and Foreign Policy Change in Small States: The Fall of the Danish 'Footnote Policy'," *Cooperation and Conflict*, (Vol. 42: 222), 2011, p. 228-230.

⁷⁴ Cindy Vestergaard and Sine Tårby Christensen, "Mother Pie and Apple Cake: Denmark's Non-proliferation and Disarmament Policies" DIIS Report, forthcoming 2011.

⁷⁵ Denmark has unfortunately not used its domestic nuclear, biological and chemical expertise to gain international recognition. As an example, the Danish National Institute of Radiation Protection has unique expertise in the creation of

b. Domestic Law

The War Equipment Act

According to the War Equipment Act, Section 2 it is prohibited without a license from the Minister of Justice to manufacture “equipment designed for military use and having no civilian application,” including “components and parts that are designed to used in equipment etc, as specific above and which have no civilian application.”

The Weapons Act

The Weapons Act states that it is “illegal to import, export, transport, purchase, transfer, possess, carry, use, produce, develop, or to research with the aim of developing chemical, biological, radiological or nuclear weapons and [their] delivery systems.”⁷⁶ Furthermore, Section 4, Subsection 3, cf. the Order on Weapons and Explosives Etc, Section 15 prohibits the possession or use of chemical weapons.⁷⁷ Denmark’s UNSC Resolution 1540 Report underscores that along with the above mentioned provisions, national provisions are in accordance with the NPT, the Biological and Toxin Weapons Convention (BWC) and the Chemical Weapons Convention (CWC). In other words, licenses for nuclear, chemical and biological weapons cannot be granted.⁷⁸ Additionally, UN arms embargoes are implemented in accordance with the Weapons Act No 752 of 11 August 1994 with subsequent amendments by Law No 350, No 411 and No 363. It is therefore prohibited without a specific license from the Minister of Justice to export weapons (of any kind) as well as defence-related material to a third country, no matter whether the transfer takes place in relation to export, transit, trans-shipment or re-export. That implies that export licenses are not issued to countries that have been imposed sanctions by the UN Security Council. It is also prohibited, without a license, as a broker to negotiate or arrange transactions that involve the transfer of weapons between countries outside of the EU. Violating Section 7 and a UN arms embargo is a criminal offence.

Radioactive Materials

According to Act No. 94 of 31 March 1953 on radioactive materials, production, importation, possessing etc of radioactive materials are subject to prior authorization by the National Institute of Radiation Hygiene under the National Board of Health. All radioactive substances, whether in free mode or in combination with other materials or built in machinery and equipment require authorisation by the Institute.

Special Provisions in the Criminal Code

The legal basis for control of dual-use items in Denmark is EU-regulation 1334/2000 (and updated 2009) which is supplemented by national legislation describing the national administration of the regulation,

anational database to track the some 11,000 radiation sources in Denmark – this know-how as well as expertise could be used to enhance world-wide nuclear control and security. Additionally, Denmark’s biosafety/biosecurity measures, and in particular its approach to disease surveillance which is conducted openly and in partnership between the government and industry are unparalleled internationally. This is an area specifically that many countries are requesting assistance with developing and implementing. See: Cindy Vestergaard, “Modern Non-proliferation and Disarmament: Denmark and the G8 Global Partnership,” *DIIS Report*, 2009.

⁷⁶ The Weapons Act No 704 of 22 June 2009, and Amended No. 538 of 26 May 2010, Article 5.

⁷⁷ For a full accounting see Denmark’s report to the 1540 Committee: “Report by the Government of Denmark. Drafted in accordance with UN Security Council Resolution 1540, 28 October 2004.

⁷⁸ Report by the Government of Denmark, Drafted in accordance with UN Security Council Resolution 1540, 28 October 2004.

including penal sanctions in case of violation. The maximum penalty related to this act is imprisonment and/or an unlimited fine⁷⁹ When the offence is related to WMD, it is covered by the Criminal Code.⁸⁰ The Criminal Code, Section 192, relates to offences concerning an individual who “imports, produces, owns, carries, uses or transfers weapons or explosives which because of their highly dangerous character are suitable to causing significant damage” or carries out “research in solids, liquids, or gasses, which by diffusion have harmful, anaesthetising or irritating effects.” According to section 114a, any person who directly or indirectly provides financial support; procures or collects means; or places money, other assets or financial or similar means to a group or an association which commits or intends to commit acts of terrorism are liable for up to ten years of imprisonment.

Armaments cannot be exported without a license, and components for weapons are registered as arms by the Minister of Justice. Components that have a dual-use element are governed separately and considered for their potential to be misdirected. Examples of such items include equipment to measure vibration, which also can measure vibrations in a rocket motor.

8. Current Trends

President Obama delivering his now famous speech at Prague on nuclear weapons disarmament in 2009, the call for disarmament has gained increased traction from London to New Delhi and Tokyo to Sao Paulo with NGOs and advocacy groups calling for states to negotiate a Nuclear Weapons Convention that universally and verifiably bans the possession, production, development, acquisition and transfer of nuclear weapons. They argue that the only way to secure a world without the repeated use of nuclear weapons – by states or non-state actors – is to ensure that they no longer exist. Any such treaty would require not only a robust verification system to ensure confidence in NW destruction, but also a globally-recognised system of transparency and export controls on sensitive nuclear technology. The nuclear security agenda in the US leaning more toward strengthening non-proliferation versus real disarmament efforts, there is a growing sense among NAM (and many Western) countries that there is a need for both to be implemented at the same time. Without it, advocates argue, the right to peaceful uses will be at risk as will overall international peace and security.

Other issues are also of concern, particularly from a dual-use technology perspective. Issues related to missile defences, laser technology (which is necessary also for missile defence), and chemical and biological weapons are also controversial within international relations. Missile defence for example uses space applications that concern China and Russia (among others) which have led both to re-assert their calls for a treaty on the Prevention of an Arms Race in Outer Space (PAROS). Similarly, laser technology has the potential to create weapons that can slice through cities and possibly leave entire populations blinded. The revolution in biological sciences also raises a host of concerns among states parties to the Biological and Toxin Weapons Convention (BWC) – a disarmament treaty that contains no definitions of biological weapons, nor scope of what activities would be deemed peaceful or hostile. It also lacks verification measures and third-party oversight, leaving many to lack confidence in the biological activities of some states under the rubric of biodefence. Less controversial but important is the unwillingness of states parties to discuss the use of non-lethal chemicals under the Chemical Weapons Convention. Accordingly,

⁷⁹ Consolidated Act No 612 of 25 June 2003.

⁸⁰ Consolidated Act No 814 of 30 September 2003.

while nuclear weapons dominate the field of international security, other weapons are not only closely linked in their indiscriminate nature but also in their nature to create strategic tensions. Moreover, all of these weapons are controversial in their application, creating new strategic defence/offence implications that move science, technology and dual-use items beyond already-existing treaties and mechanisms.

9. Conclusion

A report by the International Commission of Nuclear Nonproliferation and Disarmament (ICNND) in 2009 noted that: "much of the world's nuclear industry is multinational, with significant public/private cross-ownership where commercial interests, non-proliferation interests and national strategic interests can overlap or collide. Yet governments have tended to manage proliferation as a political issue with virtually no industry involvement other than an expectation that it comply with directives which themselves can be difficult to follow or implement."⁸¹ As noted in the ICNND report, governments rarely include industry representatives in proliferation information exchanges or policy discussions in groups such as the NSG except through occasional outreach activity; yet industry is at the front line of developing and trading dual-use nuclear technology and therefore has the capacity to prevent, limit or place conditions upon such proliferation while also the ability to report on transfers and to influence the type of nuclear technology to be developed in the future. While the disarmament debate has been minimal in its emphasis on the role of the nuclear fuel cycle industry, attention through CSR issues has been gaining ground as has the resurfaced call for zero nuclear weapons in the civilian oversight by NGOs and citizens groups regarding NW financing. This report attempts to stimulate debate on CSR and nuclear weapons. It notes that the international situation is complex in its nuclear weapons narrative; but that the disarmament movement is opening up a space for engagement not only for industry, but governments and citizens alike in the role of nuclear weapons in international relations.

⁸¹ Martine Letts and Fiona Cunningham, 2009.

Annex I: Links to Treaties, Texts and Agreements

Antarctic Treaty: <http://www.ats.aq/e/ats.htm>

Biological and Toxin Weapons Convention:

[http://www.unog.ch/80256E5525B50871CAEC1257188003BDDD6/\\$file/BWC_Text_Additional_Understandings.pdf](http://www.unog.ch/80256E5525B50871CAEC1257188003BDDD6/$file/BWC_Text_Additional_Understandings.pdf)

Chemical Weapons Convention: www.opcw.org

Comprehensive Test Ban Treaty: http://www.ctbto.org/fileadmin/content/treaty/treaty_text.pdf

IAEA Safeguards Overview: Comprehensive Safeguards Agreements and Additional Protocol:

http://www.iaea.org/Publications/Factsheets/English/sg_overview.html

ICJ Opinion on the Threat or Use of Nuclear Weapons: <http://www.icj-cij.org/docket/index.php?p1=3&p2=4&k=e1&p3=4&case=95>

ING Defence Policy:

http://www.ingforsomethingbetter.com/our_approach/managing_our_business_impact/Finance_and_investment_policies/defence_policy/

Missile Technology Control Regime: <http://www.mtcr.info/english/index.html>

Nuclear Nonproliferation Treaty: <http://www.un.org/en/conf/npt/2005/npttreaty.html>

Nuclear Suppliers Group: www.nuclearsuppliersgroup.org

Outer Space Treaty: <http://www.state.gov/www/global/arms/treaties/space1.html>

Partial Test Ban Treaty: http://www.un.org/disarmament/WMD/Nuclear/pdf/Partial_Ban_Treaty.pdf

Seabed Treaty:

<http://disarmament.un.org/treatystatus.nsf/44e6eeabc9436b78852568770078d9c0/14f35cd4f3cd01f0852568770079dd98?OpenDocument>

UN General Assembly Resolutions on Missiles:

http://www.un.org/disarmament/WMD/Missiles/GA_Resolutions.shtml

UN Resolution 1540: <http://www.un.org/sc/1540/index.shtml>

World Nuclear Association, Sustaining Global Best Practices in Uranium Mining and Processing:

<http://www.world-nuclear.org/WorkArea/DownloadAsset.aspx?id=16982>

Zangger Committee: www.zanggercommittee.org

Annex II: Multilateral fuel cycle initiatives

Global Nuclear Power Infrastructure – A Russian proposal to develop global infrastructure ensuring access to nuclear energy supplies. The International Uranium Enrichment Centre at Angarsk was established as part of the proposal, and international reprocessing and storage facilities are also envisaged. Fuel supply contracts would be guaranteed by the IAEA, and the stocks of fuel placed under IAEA control.

Global Nuclear Energy Partnership (GNEP) – A US proposal to develop proliferation-resistant technologies and limit the number of enrichment and reprocessing facilities to those already in existence, in order to facilitate an economically viable and proliferation-safe expansion in nuclear energy. The partnership includes 21 countries and industry, national laboratories, universities and local business in the USA.

Six-Country Proposal – The Multilateral Mechanism for Reliable Access to Nuclear Fuel is a system of enriched uranium supply assurances, proposed by the six countries with commercial enrichment facilities (France, Germany, the Netherlands, Russia, the United Kingdom and United States). Recipients of the assurances would be required to forego enrichment and reprocessing capabilities.

Fuel Suppliers' Registry – Japan proposed the IAEA Standby Arrangements System for the Assurance of Nuclear Fuel Supply, a registry of uranium and enriched uranium suppliers disseminated by the IAEA to assist in the prevention of fuel supply disruptions. The system would complement the Six-Country Proposal.

US HEU Proposal – The United States offered to set aside excess HEU, which would be down-blended and available as a strategic reserve for countries foregoing enrichment and reprocessing.

IAEA Fuel Bank Proposal – The Nuclear Threat Initiative (NTI) proposed an international fuel reserve, owned and managed by the IAEA, the fuel to be used in the event of a disruption to the international market. The proposal has received financial support from the United States, European Union, United Arab Emirates and Norway, to match that already provided by NTI.

IAEA Multilateral Enrichment Facility – Germany proposed a multilateral enrichment facility administered by the IAEA but operating on a commercial basis and situated in an extraterritorial or neutral location.