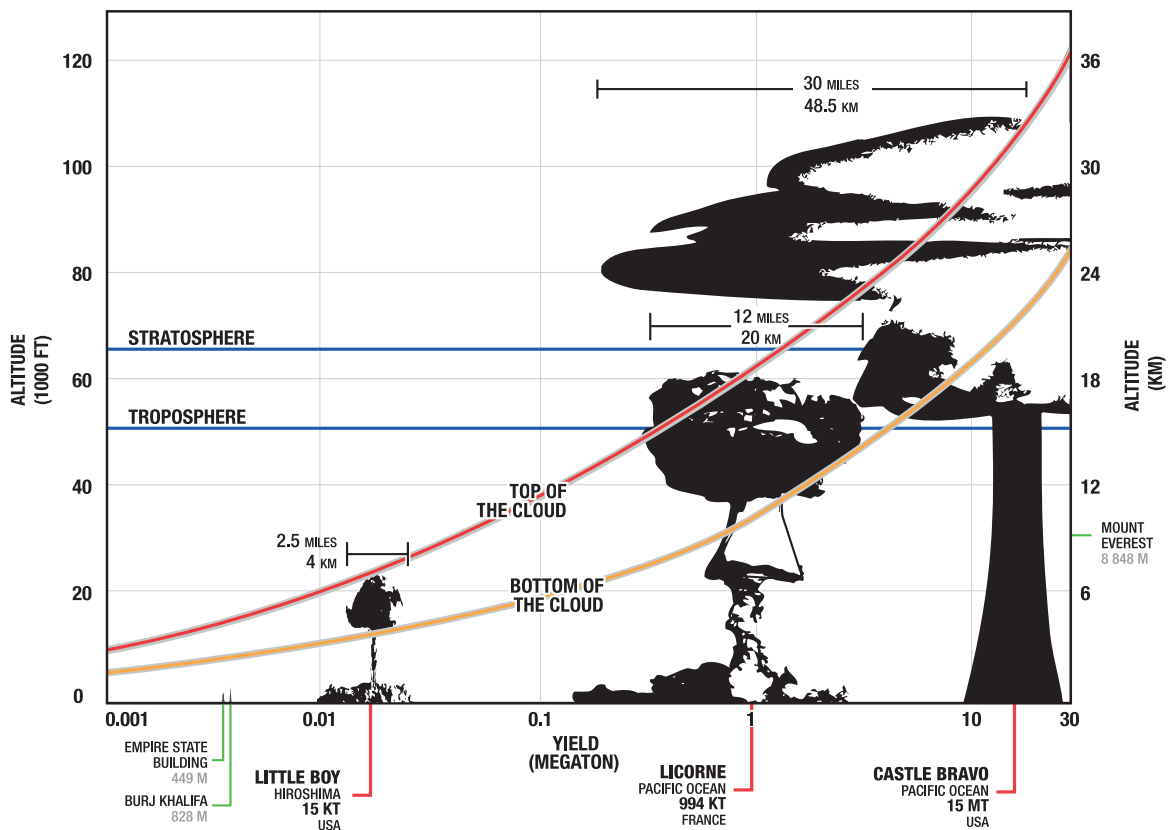


## STOCKPILE REDUCTIONS

*The 2009 IPU resolution on nuclear non-proliferation and disarmament starts by calling “on all nuclear-armed States to make deeper, faster and irreversible cuts to all types of nuclear weapons”.<sup>46</sup>*

There are approximately 19,000 nuclear weapons in the stockpiles of nine nuclear-weapon-possessing States. They have a combined explosive yield of 6 billion tonnes (6,000 megatons of TNT). This is 500,000 times more destructive than the bombs that destroyed Hiroshima and Nagasaki in 1945. The blast, radiation and climatic consequences of the possible use of these weapons continue to pose the most destructive human-made threat to the planet.

**Figure 2:** Surface detonation cloud height vs. explosive yield.



Source: Nucleardarkness.org

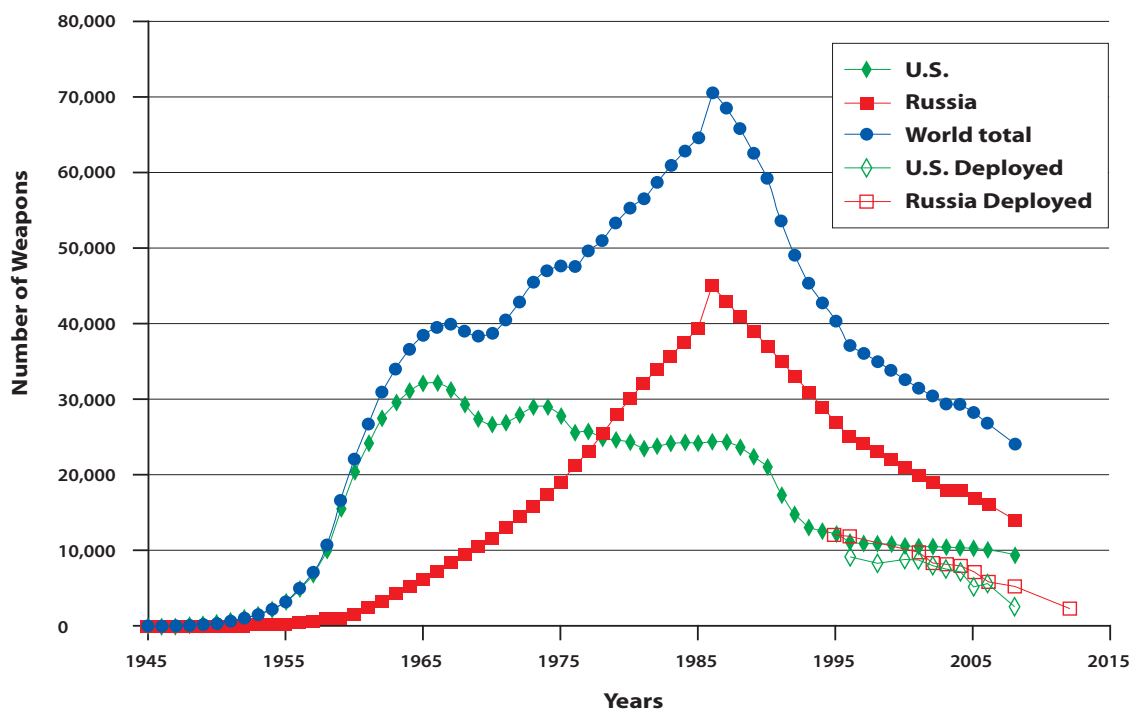
At the height of the Cold War, there were nearly three times as many nuclear weapons.

At the historic 1986 Reykjavik Summit, US President Reagan and Soviet General Secretary Gorbachev rejected the nuclear orthodoxy of the time, which was to continue expanding the size, type and number of nuclear weapons. They halted the nuclear arms race and came close to a deal to eliminate all their nuclear weapons. The summit paved the way for a series of far-reaching arms control treaties and agreements between both countries. As a result, the United States and the Russian Federation have steadily, substantially and verifiably reduced their nuclear forces and stockpiles since the end of the Cold War.

Other nuclear-weapon States have also reduced their arsenals, while yet other States that inherited nuclear weapons after the dissolution of the Soviet Union, or had advanced nuclear-weapon programmes themselves, have dismantled and destroyed their stockpiles.

In addition, the number of nuclear weapons deployed on foreign territories, most notably US nuclear weapons in NATO Member States, has been reduced by 95 per cent since the height of the Cold War, with

**Figure 3:** Worldwide, US and Russian nuclear stockpile.



(Source: Alan Robock, Rutgers University, 2010)

complete removal from at least one State in which such weapons were formerly deployed. Currently, about 200 US nuclear weapons remain deployed in NATO States.

Further sizeable reductions in the arsenals of Washington and Moscow – which between them control more than 90 per cent of the world’s nuclear weapons – are critical to achieving vital nuclear security goals. So too are reductions in the stockpiles of the other nuclear-weapon States, all five of which agreed at the 2010 NPT Review Conference to commence a process of multilateral negotiations to:

- rapidly move to an overall reduction in the global stockpile of all types of nuclear weapons; and
- address the question of all types of nuclear weapons regardless of the type and location.<sup>47</sup>

Such reductions would lower the threat of a large-scale nuclear war and build confidence between the nuclear-weapon States. It would also demonstrate that they have the political will to implement their disarmament obligations, which would assist in moving other countries towards tighter non-proliferation controls. The basic agreement in the NPT was that non-nuclear States would not acquire nuclear weapons and would accept non-proliferation controls in return for the nuclear-weapon States moving systematically towards nuclear disarmament.

Such reductions, in the short to medium term, could be hastened by changes in the nuclear deterrence policies and practices of the nuclear-weapon States, including moving to sole purpose, taking all nuclear forces off alert, abandoning launch-on-warning, and rejecting the arguably illegal doctrine of massive retaliation.

With regard to nuclear weapons deployed in NATO countries (tactical or sub-strategic weapons), some NATO governments have tended to link progress on reductions and complete removal of these weapons with an agreement by the Russian Federation to reduce its much larger number of tactical weapons. Others argue that unilateral reductions of NATO nuclear weapons would not threaten their security and could prompt the Russian Federation to take measures similar to the successful unilateral Presidential Nuclear Initiatives of 1991 (see below). Another point to focus on is the process to eliminate nuclear stockpiles and achieve complete nuclear disarmament, which would be greatly facilitated by the

rejection of nuclear deterrence and/or its replacement by other security policies. (See **Nuclear stockpiles: How many nukes are needed for nuclear deterrence?** below.)

## Nuclear Stockpiles: How many nukes are needed for deterrence? 1 500, 150, 15, 5 or 0?

In some ways this question is similar to the one that perplexed religious philosophers centuries ago: “How many angels can you fit on the head of a pin?” The answer has more to do with security perspectives than any empirical reality. If nuclear deterrence indeed works – and opinions vary on this – a few nuclear weapons could be deemed sufficient, as those few weapons could threaten another country with “unacceptable” damage in retaliation for any potential or actual act of aggression. The Democratic People’s Republic of Korea, for example, now has a deterrence policy based on low numbers of nuclear weapons – less than 10. However, there is no defined quantification of what “unacceptable” damage means. How much of the enemy’s military forces, territory and assets would need to be threatened in order to deter an otherwise determined aggressor country?

There is also a wide range of perspectives on what – and how many – targets there need to be for a nuclear arsenal. Current nuclear doctrines require multiple purposes for nuclear weapons – to deter a nuclear attack, plus to address potential development of chemical weapons, biological weapons and even to counter threats from conventional weapons. In addition, military planners require further nuclear weapons if they feel that some of their nuclear weapons could be destroyed by ballistic missile defences, or by a first strike from the other side. Such a first strike appears feasible because both the United States and the Russian Federation have policies of first use and their weapons poised on high alert. A move to sole purpose (nuclear weapons would only serve to deter other nuclear weapons), no first use, de-alerting, moving nuclear weapons to submarines (fairly invulnerable to a first-strike attack) and controls on ballistic missile defences would relieve the perceived military need for large numbers of nuclear weapons.

Thus, there are a variety of perspectives on the number of nuclear weapons required for nuclear deterrence, including by the United States and the Russian Federation, ranging from a dozen to over 1,000.

If nuclear-weapon-possessing States take into consideration international law in their nuclear planning, then it is likely that they would not be able to possess very many nuclear weapons, if any at all, as laws applicable in time of war preclude using weapon systems that indiscriminately harm civilians, cause long-term and severe damage to the environment, violate neutral territory or cause unnecessary suffering (including long-term illness) to combatants. This would definitely rule out the use of nuclear weapons against or near cities, and probably in most other locations as well, with only limited use against military targets possibly conforming to the law.

(See **Chapter 9. Laws and norms: Towards non-use and prohibition**).

A key question is whether deterrence in the 21<sup>st</sup> century requires any nuclear weapons at all. Deterrence is a process of persuading an opponent that the costs of any act of aggression would be too high in relation to any benefits gained, and thus preventing the potential aggressor from undertaking such an act. Such costs could include a range of possible responses to aggression – including diplomatic penalties, targeted sanctions, criminal charges, broad-based sanctions, and/or military action. The majority of States have never included nuclear weapons as part of their security policies and deterrence strategies. A growing number of high-level former policymakers argue that although nuclear weapons were a fundamental part of deterrence for the nuclear-weapon-possessing States and their allies during the Cold War, nuclear weapons are no longer necessary for deterrence in the emerging globalized world.

(See **Chapter 5. Nuclear deterrence and security**).

**Good Practice****NWPS****Examples**

- A. 1987 Intermediate-Range Nuclear Forces Treaty**  
Verifying disarmament of an entire class of weapons
- B. 1991 Presidential Nuclear Initiatives**  
Demonstrating the value of unilateral measures
- C. 1991 Strategic Arms Reduction Treaty (START I)**  
Verifying disarmament of strategic weapons
- D. Belarus, Kazakhstan, Ukraine and South Africa**  
Relinquishing possession of nuclear weapons
- E. 2010 United Kingdom Strategic Defence and Security Review**  
Unilateral reductions
- F. 2010 Strategic Arms Reduction Treaty (New START)**  
Deeper verified cuts

**A****1987 Intermediate-Range Nuclear Forces Treaty****Verifying disarmament of an entire class of weapons**

*Required the United States and the Soviet Union to eliminate and permanently forswear all of their nuclear and conventional ground-launched ballistic and cruise missiles with ranges of 500 to 5,500 kilometres. As a result of the INF Treaty, the parties destroyed a total of 2,692 short-, medium-, and intermediate-range missiles. Neither country currently deploys such systems.<sup>48</sup>*

The 1987 INF Treaty, which entered into force on 1 June 1988, marked the first time the superpowers agreed to reduce their nuclear arsenals, abolish an entire class of nuclear weapons – though only missiles, not nuclear warheads – and accept previously inconceivable intrusive on-site inspections for verification.<sup>49</sup> As a result of the INF Treaty, Washington and Moscow had destroyed a total of 2,692 short-, medium-, and

intermediate-range missiles by the treaty's implementation deadline of 1 June 1991. Neither country currently deploys such systems.

Both in Washington and Moscow, the treaty was endorsed by the foreign affairs committees and enjoyed high-level support as of its signing. After the US Senate ratified the treaty (93-5), the Supreme Soviet followed suit.

The 2009 IPU resolution on nuclear non-proliferation and disarmament recognizes the importance of the INF Treaty and “[c]alls on all States to support the initiatives aimed at globalizing the obligations set forth in the [INF Treaty] and to promote cooperative approaches to the issue of missile defence, beginning with a joint assessment of possible threats”.<sup>50</sup>

## B

### 1991 Presidential Nuclear Initiatives

#### Demonstrating the value of unilateral measures

*Unilateral (but reciprocal) measures by the United States and the Soviet Union to, among other things, take all nuclear bombers off alert status, remove tactical nuclear weapons from surface ships, and halt the further development of multiple-entry vehicles (multiple warheads on a single missile).*

In September 1991, US President George Bush announced unilateral nuclear disarmament measures, including the elimination of all US ground-launched short-range nuclear weapons, the withdrawal of all tactical nuclear weapons from US surface ships and attack submarines, de-alerting of all nuclear-armed strategic bombers (taking the bombs off the planes), and cancellation of the further development of multiple re-entry vehicles.

The following month, Soviet President Mikhail Gorbachev reciprocated by announcing similar nuclear disarmament steps by the Soviet Union, plus additional steps, including decommissioning of all nuclear-armed anti-aircraft missiles and destruction of all nuclear mines.

These were steps that both leaders believed they could take on a unilateral (but reciprocal) basis in order to demonstrate good faith and avoid lengthy negotiations. By taking unilateral measures, each side



stimulated the other to match, or even surpass, such measures, changing the arms race into a disarmament race, contingent, of course, on security concerns and cautions. The unilateral measures complemented the ongoing negotiations on reductions in numbers of deployed strategic nuclear weapons and their delivery systems, intercontinental ballistic missiles (ICBMs).

Parliamentarians in nuclear-weapon States can encourage their leaders to engage in creative thinking and take additional unilateral steps in order to break negotiating deadlocks and foster disarmament action on all sides.

## C

### 1991 Strategic Arms Reduction Treaty (START I)

#### Verifying disarmament of strategic weapons

*Barred the Soviet Union and United States from deploying more than 6,000 nuclear warheads atop a total of 1,600 ICBMs, SLBMs and heavy bombers. In addition, START I required the Soviet Union to reduce its heavy SS-18 ballistic missiles by 50 per cent.<sup>51</sup>*

On 31 July 1991, after almost 10 years of complicated talks, the United States and the Soviet Union signed START I. Five months later, the Soviet Union broke up, leaving four independent States in possession of strategic nuclear weapons: Belarus, Kazakhstan, the Russian Federation and Ukraine. On 23 May 1992, the United States and the four nuclear-capable successor States signed the Lisbon Protocol, which made all five nations party to START I.<sup>52</sup>

Intended to be a way to decrease the threat of nuclear warfare by verifiably reducing the amount of large, deployed arsenals that the United States and the Soviet Union (Russia, Belarus, Kazakhstan and Ukraine) could possess, START I called for each party to reduce its strategic nuclear forces to 1,600 deployed ICBMs, SLBMs and heavy bombers, and to reduce its warheads to 6,000 – only 4,900 of which could be on ballistic missiles – in seven years. In addition, START I required the Soviet Union to reduce its heavy SS-18 ballistic missiles by 50 per cent.<sup>53</sup>

One of the major achievements of the treaty was its strong emphasis on constant monitoring, including 12 types of on-site inspections.<sup>54</sup> In



addition, START I provided for regular data exchanges and extensive notifications of new nuclear developments. These measures were crucial to building mutual trust and enhancing transparency.

The US Senate ratified START I on 1 October 1992, and the Supreme Soviet on 4 November that same year. After the parliaments of Kazakhstan (2 July 1992), Belarus (4 February 1993) and Ukraine (18 November 1993) ratified START I, the three countries joined the NPT as non-nuclear States. START I entered into force on 5 December 1994, and seven years later the United States and the Russian Federation successfully reached the START I levels of 6,000 deployed warheads.<sup>55</sup> Belarus, Kazakhstan and Ukraine have completely eliminated or removed from their territories the nuclear arsenals left over from the Soviet Union.

## D

### Belarus, Kazakhstan, Ukraine and South Africa Relinquishing possession of nuclear weapons

*Setting the right example – countries that have voluntarily abandoned their nuclear weapon capability*

After the collapse of the Soviet Union, Ukraine, Kazakhstan and Belarus inherited nuclear arsenals, thus becoming the third, fourth and eighth largest nuclear-weapon powers in the world. Both the 1987 INF Treaty and the 1991 START I were amended to include these successor States as parties. As a result, all three States eliminated or removed from their territory INF facilities and strategic offensive arms, and joined the NPT as non-nuclear-weapon States.

Similarly, in 1989 South Africa voluntarily dismantled its nuclear-weapon programme (which included six constructed nuclear weapons and one under construction). In 1991 it acceded to the NPT.

**E****2010 United Kingdom Strategic Defence and Security Review****Unilateral reductions**

*Reduces the number of warheads on board each submarine from a maximum of 48 to a maximum of 40, trims the number of operational warheads from fewer than 160 to no more than 120, and cuts the United Kingdom's nuclear-weapon stockpile by 25 per cent, to a maximum of 180.<sup>56</sup>*

As outlined in the 2010 Strategic Defence & Security Review, the UK Government has committed to reducing the capability of its Trident submarine-based nuclear-missile system. The number of warheads on board each submarine will be reduced from a maximum of 48 to a maximum of 40, the number of operational missiles on the Vanguard Class submarines will be reduced to no more than eight, the number of operational warheads will be reduced from fewer than 160 to no more than 120, and the United Kingdom's nuclear-weapon stockpile will be set at a maximum of 180 – a cut of 25 per cent.

These moves are an example of unilateral disarmament steps that can be taken when a government determines that such steps do not undermine its security. More importantly, the review was undertaken with a full debate in Parliament. On the other hand, the review did not reflect the view, widely supported in Parliament, that the government should make a stronger commitment to negotiations for a global ban on nuclear weapons (under a nuclear weapons convention), and take stronger unilateral steps, including completely relinquishing nuclear weapons as both unnecessary for security and a burden on the public purse.

**F****2010 New Strategic Arms Reduction Treaty (New START)****Deeper verified cuts**

*Each party is allowed a maximum of 1,550 accountable deployed strategic nuclear warheads and bombs. Deployed and non-deployed ICBM launchers, SLBM launchers and heavy bombers are limited to 800. Deployed ICBMs, SLBMs and heavy bombers assigned to nuclear missions are limited to 700.<sup>57</sup>*

New START was signed on 8 April 2010 by US President Barack Obama and Russian President Dmitry Medvedev, and entered into force on 5 February 2011.<sup>58</sup>

New START stipulates that seven years after its entry into force (February 2018), each party is allowed a maximum of 1,550 accountable deployed strategic nuclear warheads and bombs. Deployed and non-deployed ICBM launchers, SLBM launchers and heavy bombers are limited to 800. Deployed ICBMs, SLBMs and heavy bombers assigned to nuclear missions are limited to 700. Each bomber is counted as one warhead.<sup>59</sup> Like START I, New START does not track or limit warheads or bombs once they have been removed from deployed launchers. Non-deployed missiles are monitored but not limited in number.

Importantly, the treaty establishes a comprehensive verification regime, including regularly updated data exchanges, an extensive list of nuclear weapon activities requiring notifications, and authorization for 18 on-site inspections annually.

Both in the United States and the Russian Federation, New START received strong, bipartisan support, and relevant expert committees approved and recommended ratification. The US Senate ratified the treaty on 22 December 2010, and the Russian State Duma followed suit on 25 January 2011.<sup>60</sup>

US and Russian policymakers have indicated that they are preparing talks to seek further reductions.



## Recommendations for Parliamentarians

- Encourage your government to urgently pursue and support further transparent, substantial and irreversible nuclear stockpile reductions under unilateral, bilateral or multilateral frameworks.
- Legislators from the P5 countries (China, France, Russian Federation, United Kingdom and United States) could call on their governments to use the P5 process agreed at the 2010 NPT Review Conference to commit to specific stockpile reductions and other pluri-lateral measures, and announce such commitments at NPT meetings.
- US and Russian legislators can seize the opportunity created by New START to address issues that could assist additional US-Russian arms control agreements, such as further controls on operational tactical (non-strategic) nuclear weapons, ballistic missile defences and conventional weapons.

**Good Practice****ALLIES OF NWS****Examples****A. Canada and Greece**

Unilateral removal of deployed tactical weapons

**B. Five NATO States**

Call for removal of tactical weapons

**C. Japan**

Encouraging stockpile reductions

**A****Canada and Greece****Unilateral removal of deployed tactical nuclear weapons**

It was widely known (but never formally acknowledged) that from the mid-1960s until 1984 Canada hosted a number of US nuclear weapons on its territory and others deployed with Canadian forces in Europe. These included BOMARC CIM-10 surface-to-air missiles, Honest John rocket systems armed with W31 nuclear warheads, nuclear W25 Genie rockets carried by 54 CF-101 Voodoos and tactical nuclear warheads assigned to 6 CF-104 Starfighter squadrons (about 90 aircraft). Canadian popular opinion against these deployments first found traction in 1972, when three of the systems were withdrawn under the tenure of Prime Minister Pierre Trudeau. The last nuclear weapon system was withdrawn in 1984.

Greece hosted a variety of nuclear weapon systems from the early 1960s at the Araxos Air Base. These included Nike Hercules missiles and nuclear-armed A-7 fighter bombers. In 2001, Greek reluctance to upgrade the fighter-bombers to US F-16s led to the withdrawal of the remaining US nuclear weapons in Greece.

The withdrawal of nuclear weapons from Canada and Greece without any apparent negative impact on their security or their relationship with the United States could indicate the possibility of similar unilateral withdrawals of nuclear weapons from other host countries.

**B****Five NATO States****Call for the removal of tactical nuclear weapons**

The *Bulletin of Atomic Scientists* notes that between 150 and 200 US tactical nuclear weapons are deployed in Europe and stored at six bases in five countries: Belgium, Germany, Italy, the Netherlands and Turkey.<sup>61</sup> These countries have nuclear-sharing agreements with the United States, under which they train in the use of nuclear weapons and have the authority to take control of such weapons during wartime.

The Russian Federation is estimated to have about 2,000 active tactical nuclear warheads, most of which are probably deployed to the western part of the country.<sup>62</sup> The Weapons of Mass Destruction Commission warns that these tactical weapons “would be easier [than strategic weapons] for outsiders to use, such as a terrorist group,” and that “[t]here is a risk of theft or diversion during transport or storage in the field”.<sup>63</sup> It therefore recommends that the United States and the Russian Federation “should agree to withdraw all non-strategic nuclear weapons to central storage on national territory, pending their eventual elimination”.<sup>64</sup>

Recent developments in Europe have given cause for optimism that the deployment of tactical nuclear weapons in Europe and the western Russian Federation might soon come to an end.

From 2005 to 2007, a number of parliamentary initiatives sought to raise the issue of deployed nuclear weapons in Europe. These included:

- resolutions adopted in the Belgian and German parliaments calling on NATO governments to work for the removal of US nuclear weapons from Europe;
- a joint statement from parliamentarians from Belgium, Germany, Italy, the Netherlands and the United Kingdom calling for the end of nuclear-sharing arrangements between the United States and NATO;
- a written declaration from Members of the European Parliament on the withdrawal of US nuclear weapons from Europe; and
- writs delivered by parliamentarians to commanders of nuclear-weapon deployment sites asserting that the deployment of such

weapons violated the NPT and the laws against the use of nuclear weapons in warfare affirmed by the International Court of Justice in 1996.

In addition, in 2004 the Science and Technology Commission of the NATO Parliamentary Assembly advised NATO in a report on nuclear-weapon proliferation to come up with “a proposal on a phased and verifiable withdrawal of tactical nuclear weapons from Europe”, as they “do not add substantially to the security of Europe”.<sup>65</sup> As a follow-up, a 2010 NATO Parliamentary Assembly report on US non-strategic nuclear weapons in Europe examined all possible options regarding such weapons, including unconditional withdrawal, partial withdrawal, withdrawal being conditional upon dismantlement by the Russian Federation of its tactical nuclear weapons, and maintaining the status quo.<sup>66</sup>

There is a growing perception in NATO countries that deployed tactical nuclear weapons no longer serve any practical military purpose. Moreover, it could be argued that their deployment in European countries is in violation of Articles I and II of the NPT, which establish that nuclear-weapon States shall not “transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly,” and that non-nuclear-weapon States commit “not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices”.<sup>67</sup> Most importantly, their removal could invite reciprocal action from Moscow on its tactical nuclear weapons in Western Russia and open the door to further US-Russian nuclear arms control and disarmament agreements.

A recent report by IKV Pax Christi indicated that 14 NATO States (50 per cent) actively support withdrawal, 10 NATO States would accept such withdrawal, and only three NATO States oppose such withdrawal.<sup>68</sup>

Another factor that may affect the feasibility of continuing to host US tactical nuclear weapons in these States is the requirement to renew the fleet of fighter-bombers needed for their delivery. Parliamentarians in these countries have an important role to play in influencing and overseeing such procurement and budget decisions. (See also **Chapter 8. Nuclear spending, corporations and scientific research.**)



For example, the Greek decision not to upgrade the country's fleet of aircraft led to the withdrawal of US tactical nuclear weapons from Greece (see Good practice, above).

## C

## Japan

## Encouraging stockpile reductions

The United States has security agreements with Japan under which the former provides “extended nuclear deterrence” for the latter, but without any deployment of nuclear weapons on Japanese territory or any nuclear-sharing arrangements (thus differing from the situation with NATO nuclear-sharing countries). During the 2009-2010 US Nuclear Posture Review, US senators opposed to nuclear-weapon cuts argued that the United States needed to maintain its existing range and numbers of nuclear weapons in order to protect its allies. Some argued that reducing US extended nuclear deterrence capacity could lead allies, particularly Japan, to lose confidence, and push them towards deciding to acquire nuclear weapons to ensure a deterrent. This could be the case in particular if the United States weakened its options to threaten to use nuclear weapons with respect to attacks by conventional weapons, as some allies faced threats of such conventional attacks.

Japanese Foreign Minister Katsuya Okada, in order to clarify the Japanese position, sent a letter to US Secretary of State Hillary Clinton supporting President Obama's commitment to a nuclear-weapon-free world, calling for the United States to adopt a sole-purpose doctrine (i.e. that the sole purpose of nuclear weapons should be to deter other nuclear-weapon States), and indicating that Japan would not oppose reduction of specific weapon systems such as the Tomahawk Cruise missile, which is considered by many analysts to be the main nuclear-weapon system deployed for extended nuclear deterrence in North-East Asia.

The letter was backed by a similar cross-party letter from 204 Japanese parliamentarians to President Obama that also called on the United States to ratify the CTBT and to continue nuclear-stockpile-reduction negotiations with the Russian Federation.

President Obama, in the final Nuclear Posture Review Report<sup>69</sup> – presented to Congress in April 2010 – announced a shift in policy



to “primary purpose” (with a commitment to move to sole purpose), a commitment to enhance non-nuclear aspects of regional security alliances, and a decision to decommission the Tomahawk Cruise missiles.



## Recommendations for Parliamentarians

- Request information from your government on the presence, numbers, role and operational readiness of tactical nuclear weapons.
- Adopt resolutions and statements – either in your parliament or in conjunction with parliaments from other NATO Member States, on the removal of tactical nuclear weapons.
- Initiate parliamentary debate and oversight of government decision-making regarding the renewal of fighter-bombers necessary for the continued hosting of tactical nuclear weapons under nuclear-sharing arrangements, including related budgetary implications.
- Engage in parliamentary assemblies, notably the NATO Parliamentary Assembly, to pursue a revision of the Alliance’s strategic concept, to promote non-nuclear security in support of NATO’s commitment to create the conditions to achieve a nuclear-weapon-free world.