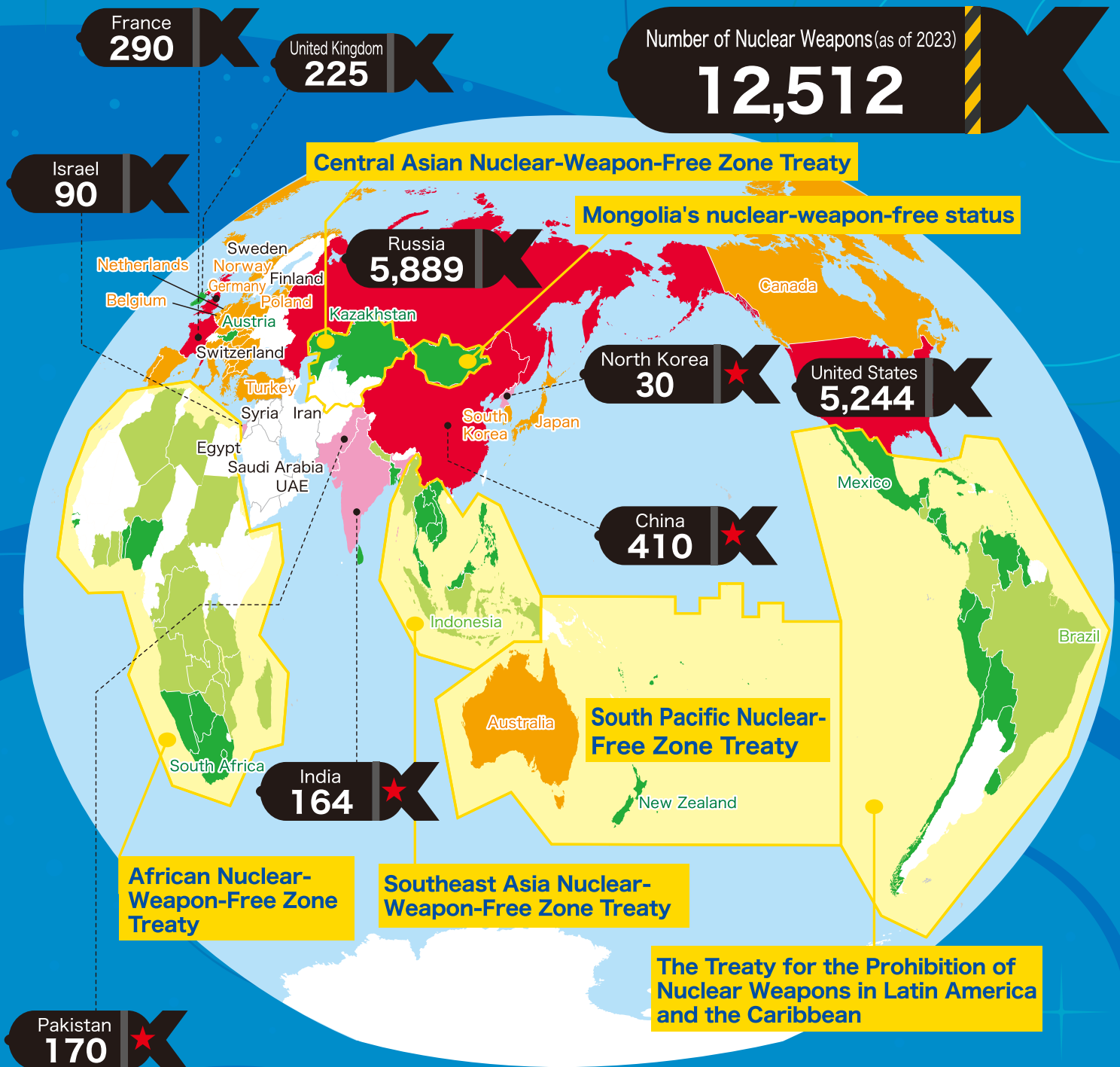


The Global Threat of Nuclear Weapons



The number of nuclear weapons (estimated) is based on *SIPRI Yearbook 2023*

- Countries that have signed the TPNW: **93**
- States Parties to the TPNW: **69**
- Nuclear-weapon states (Note 1)
- Other Nuclear-armed states (Note 2)
- Countries under the nuclear umbrella
- Nuclear-weapon-free zone
- ★ Countries which have increased the number of nuclear arsenals

(Note 1) Five countries that are officially recognized as possessing nuclear weapons by the NPT
 (Note 2) Countries other than nuclear-weapon states that (allegedly) possess nuclear weapons

The aim of this booklet, which is based on the contents of the *Hiroshima Report 2024 – Evaluation of Achievement in Nuclear Disarmament, Non-Proliferation and Nuclear Security in 2023*, is to provide a better understanding of the overall trends surrounding nuclear weapons.

International Framework for Nuclear Weapons

Nuclear Non-Proliferation Treaty (NPT)

The NPT was established based on the idea that preventing the proliferation of nuclear weapons would lead to their eventual elimination, in light of the lack of progress in negotiations regarding nuclear disarmament during the Cold War, as well as the increasing number of countries exploring to acquire nuclear weapons and/or having a potential to produce them. The NPT—with its three pillars of nuclear disarmament, nuclear non-proliferation, and peaceful use of nuclear energy—is a cornerstone of the nuclear non-proliferation regime.

【Nuclear Weapon States (NWS)/ Non-Nuclear Weapon States (NNWS)】

The NPT divides the states parties into two groups: NWS and NNWS. The NPT recognizes the possession of nuclear weapons by NWS that "had manufactured and detonated a nuclear explosive device prior to 1 January 1967." The United States, Russia, the United Kingdom, France, and China are the NWS under the NPT. All other countries are considered NNWS.

【Nuclear Disarmament】

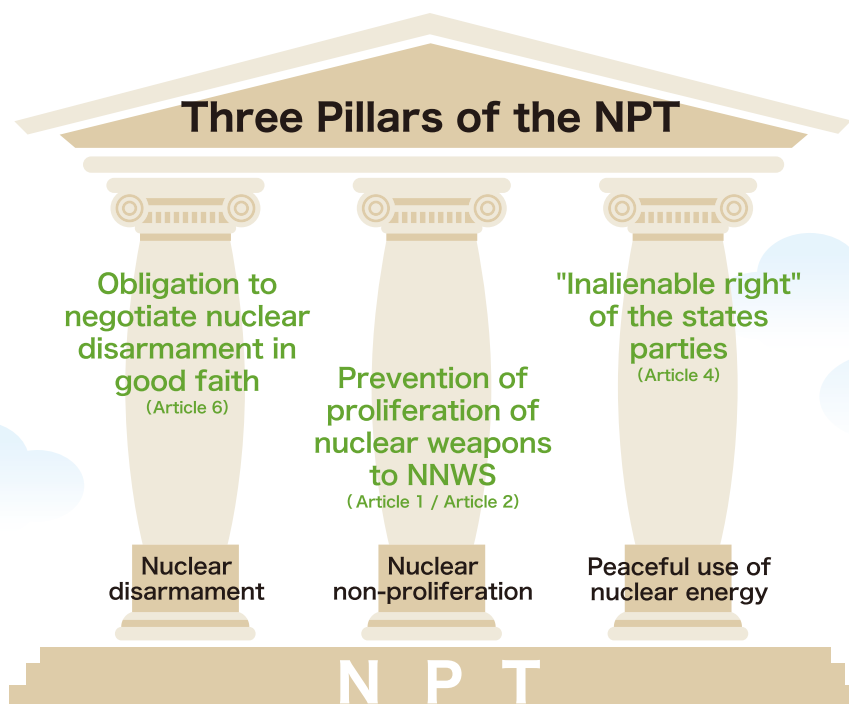
To alleviate the inequality of only five countries possessing nuclear weapons, the NPT obligates NWS to pursue negotiations in good faith on effective measures relating to nuclear disarmament.

【Nuclear Non-proliferation】

The NPT stipulates obligations for all states parties regarding nuclear non-proliferation. NNWS are prohibited from acquiring or possessing nuclear weapons. NWS are prohibited from transferring nuclear weapons to NNWS or assisting them in acquiring nuclear weapons.

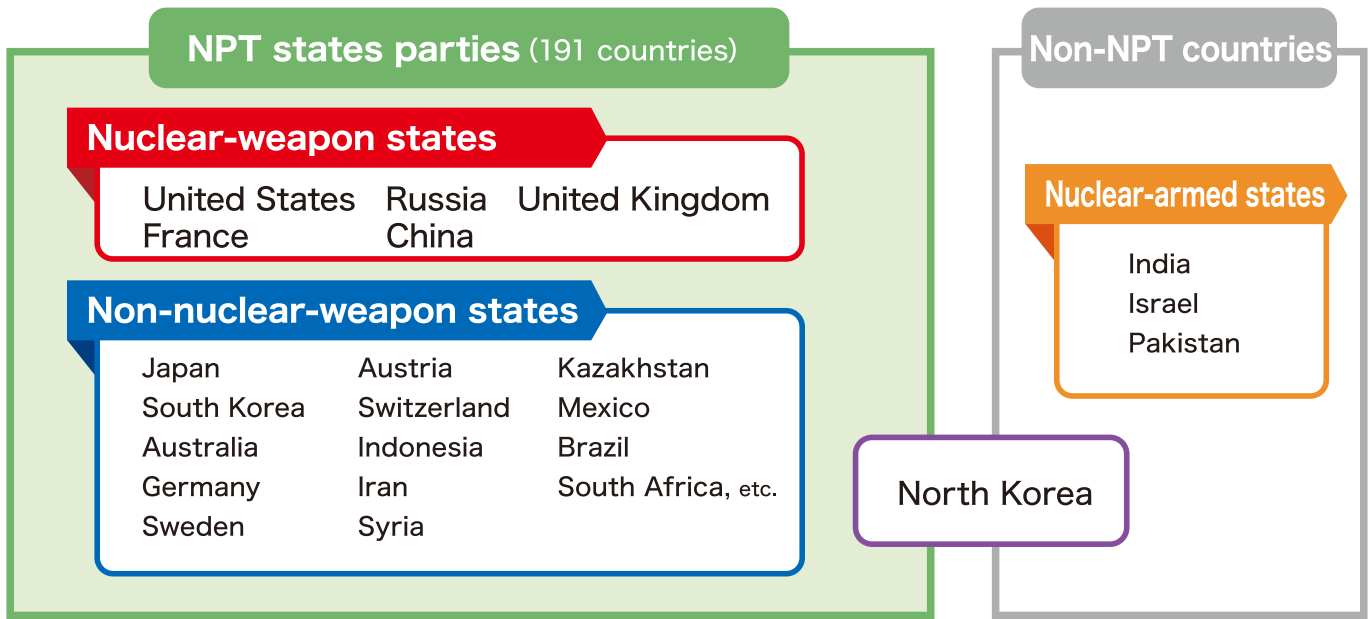
【Peaceful Use of Nuclear Energy】

The NPT recognizes the peaceful use of nuclear energy (such as nuclear power plants for electricity supply) as the "inalienable right" of all states parties. By requiring NNWS to implement International Atomic Energy Agency (IAEA) safeguards (inspections and verification), nuclear non-proliferation and nuclear activities by non-nuclear weapons states are made compatible.



Even after the establishment of the NPT in 1968 and its entering into force in 1970, some countries nevertheless continued their attempts to acquire nuclear weapons. Immediately after the end of the Cold War, South Africa eliminated its nuclear weapons and joined the NPT as a NNWS. However, India, Pakistan and Israel, which have (allegedly) possessed nuclear weapons since the Cold War era, have yet to join the NPT. These countries are called for joining the NPT as NNWS as soon as possible.

[NPT accession status] *One of the disarmament and non-proliferation treaties with the most number of signatories in the world
 *Review conferences have been held every five years since entering into force of the NPT
 *The NPT was extended indefinitely in 1995



NPT Review Conference (RevCon)

The states parties to the NPT have held the RevCons every five years since the treaty entered into force. In the conference, they review how the parties have implemented the NPT, including nuclear disarmament and non-proliferation, and discuss measures and activities to be taken in the future. At the 10th NPT RevCon held in 2022, despite opposing opinions in discussions on nuclear disarmament between NWS and NNWS as well as among NWS, a draft final document was submitted. However, due to Russia's opposition over issues related to its aggression against Ukraine in the draft, the goal of the RevCon—adopting the final document—could not be achieved.

Column

North Korea acceded to the NPT in 1985. However, its clandestine nuclear program was subsequently revealed in 1993. In 2003, North Korea for a second time declared its withdrawal from the NPT, which had been suspended in 1993. North Korea has aggressively pursued nuclear and missile development, conducting six nuclear tests and repeatedly testing various types of missiles, including intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs). Furthermore, North Korea argues that it will never renounce its nuclear forces.

Recent Developments in Nuclear Disarmament

New Strategic Arms Reduction Treaty (New START)

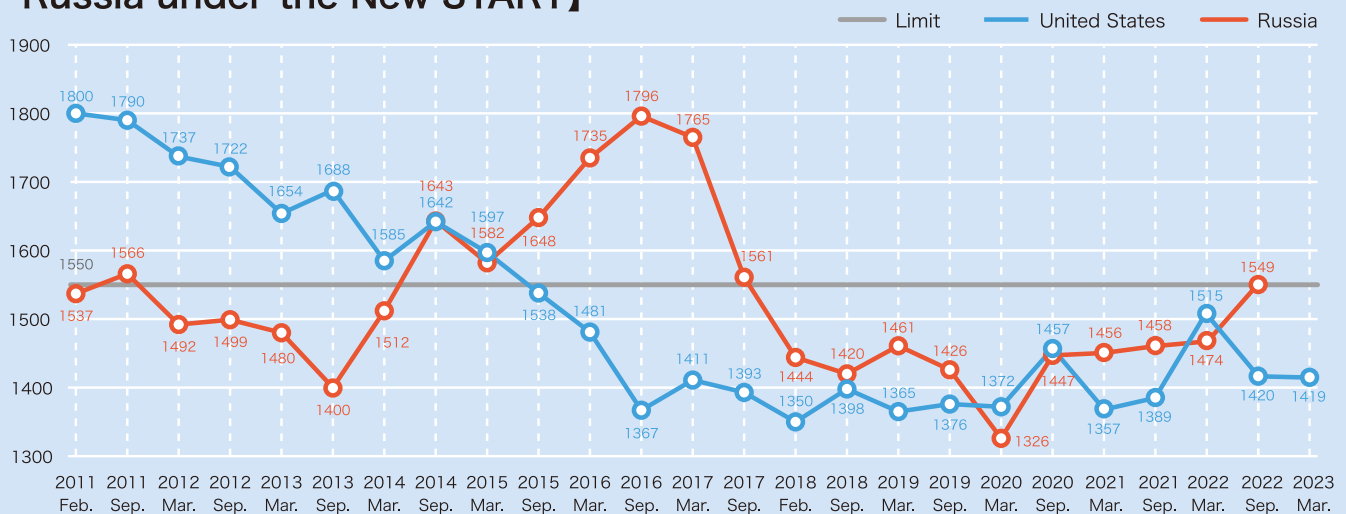
signed April 2010, entered into force in February 2011

The New START stipulates reductions in both U.S. and Russian strategic nuclear warheads and their delivery vehicles, such as intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and strategic bombers. By February 2018, their number fell below the limit stipulated in the treaty. Compliance with the obligations to reduce strategic nuclear weapons is verified bilaterally through the exchange of data, as well as mutual on-site inspections and other means.

The New START stipulates that its expiration date was on February 5, 2021, with a provision that it could be extended for up to five years. The United States and Russia held repeated discussions concerning the deadline and conditions for the extension, and shortly after the inauguration of the U.S. Biden administration, they agreed the unconditional five-year extension.





However, in 2023, Russia decided to suspend its implementation. It announced not to accept on-site inspections and not to conduct data exchange. As of 2023, the implementation of the New START has not been restored.

【Number of deployed strategic (nuclear) warheads by the U.S. and Russia under the New START】



【Strategic (nuclear) forces of the U.S. and Russia under the New START】

As of September 2022

	Deployed strategic (nuclear) warheads 	Deployed strategy (nuclear) delivery vehicles   	Deployed and non-deployed strategic (nuclear) delivery vehicles and launchers
Limits	1,550	700	800
United States	1,420	659	800
Russia	1,549	540	759

Source: The U.S. Department of State

Recent Developments in Nuclear Disarmament

Intermediate-Range Nuclear Forces Treaty (INF Treaty) — signed in December 1987, entered into force in June 1988

The INF Treaty stipulates the total elimination of U.S. and Soviet ground-launched intermediate-range (500-5,500 km) missiles. Although limited to certain categories, it was a landmark treaty that for the first time the two countries agreed to reduce or even eliminate nuclear forces.

Furthermore, the INF Treaty was the first treaty to stipulate on-site inspections between the United States and the Soviet Union.

By June 1991, the two countries had completed dismantlement of a total of 2,700 missiles.

Since then, however, countries other than the United States and the Soviet Union/Russia have continued to acquire and bolster intermediate-range missiles. Particularly China and North Korea possess high levels of missile capabilities in both quantity and quality. In addition, since 2014, the United States has claimed that Russia had tested and deployed the 9M729 ground-launched cruise missile in violation of the INF Treaty.

Mentioning the reasons above, the United States withdrew from the treaty in August 2019, and Russia subsequently announced a suspension of implementation. This effectively brought the INF Treaty to an end.

The struggle over nuclear disarmament among the U.S., Russia and China

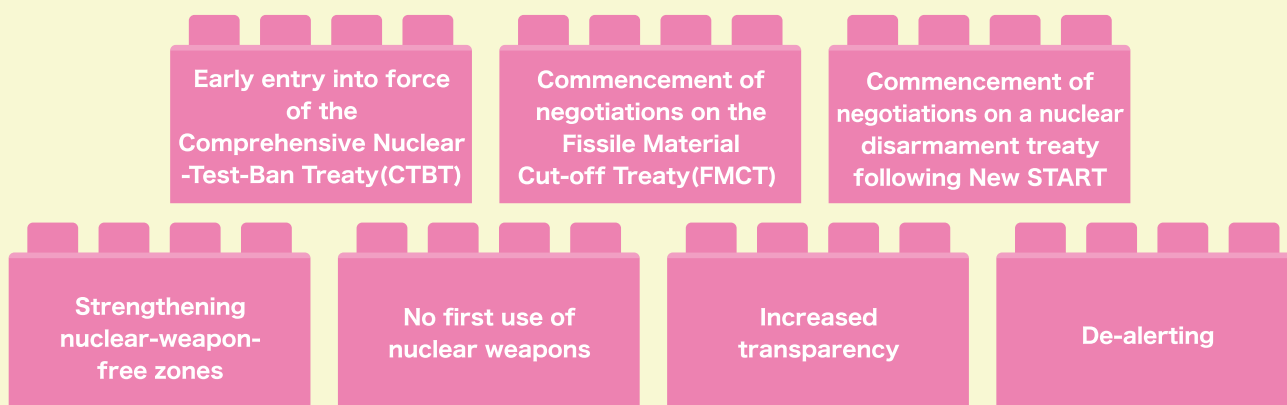
Until now, treaties stipulating the reduction of nuclear weapons have been concluded by the United States and the Soviet Union/Russia. In recent years, as China has emerged as a major power and its nuclear arsenal has expanded in both quality and quantity, the United States has called on China to join nuclear arms control talks. In response, China has reiterated that multilateral nuclear disarmament negotiations should be started only after the United States and Russia, which possess 90% of the world's nuclear weapons, would have substantially reduced their nuclear arsenals. The United States and Russia also have presented different arguments on how to proceed nuclear disarmament following the New START.



Approaches to a World Without Nuclear Weapons

No country openly opposes the goal of a "world without nuclear weapons." Meanwhile, NWS and NNWS have proposed various approaches to achieving this goal. Effective measures to promote nuclear disarmament include the following.

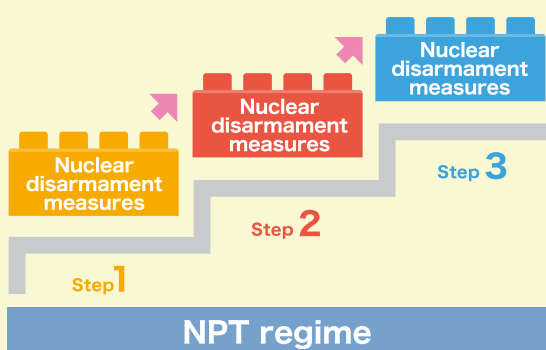
Examples of nuclear disarmament measures



(Image Diagram)

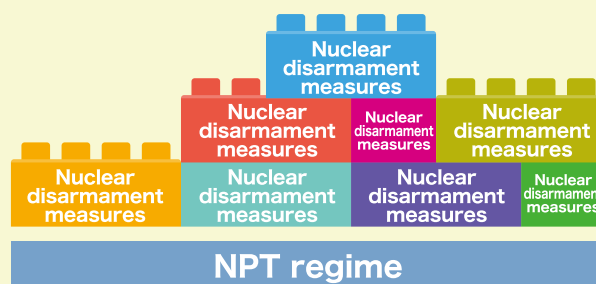
The five NWS—the United States, Russia, the United Kingdom, France, and China—have advocated a "step-by-step approach" in which these nuclear disarmament measures are accomplished one by one. NNWS that are allies and friends of the U.S., such as Japan, have emphasized the importance of a "progressive approach" in which NWS and NNWS cooperate to steadily advance nuclear disarmament measures. The essence of both approaches is that, based on the NPT regime, a most effective and pragmatic path toward a world without nuclear weapons is to consistently implement feasible measures while balancing nuclear disarmament and security.

Step-by-step approach



(Image Diagram)

Progressive Approach



(Image Diagram)

While more than 25 years have passed since the CTBT was concluded in 1996, it has yet to enter into force. Negotiations on an FMCT have not been even commenced. Since the mid-2010s, nuclear disarmament efforts have stagnated and, in some cases, even regressed. Against this backdrop, many NNWS and civil society pushed for a new approach to nuclear disarmament—the result was the adoption of the Treaty on the Prohibition of Nuclear Weapons.

Treaty on the Prohibition of Nuclear Weapons (TPNW)

The TPNW was adopted by gaining approval by 122 countries in July 2017 as a result of conferences to negotiate a treaty held at the United Nations, with the aim of establishing a legal norm banning nuclear weapons. The TPNW marks the first time in the history of nuclear disarmament that NNWS and civil society have actively led the process to adopt a treaty. The TPNW legally prohibits the development, testing, manufacturing, acquisition, possession, and use or threat of use of nuclear weapons by states parties.

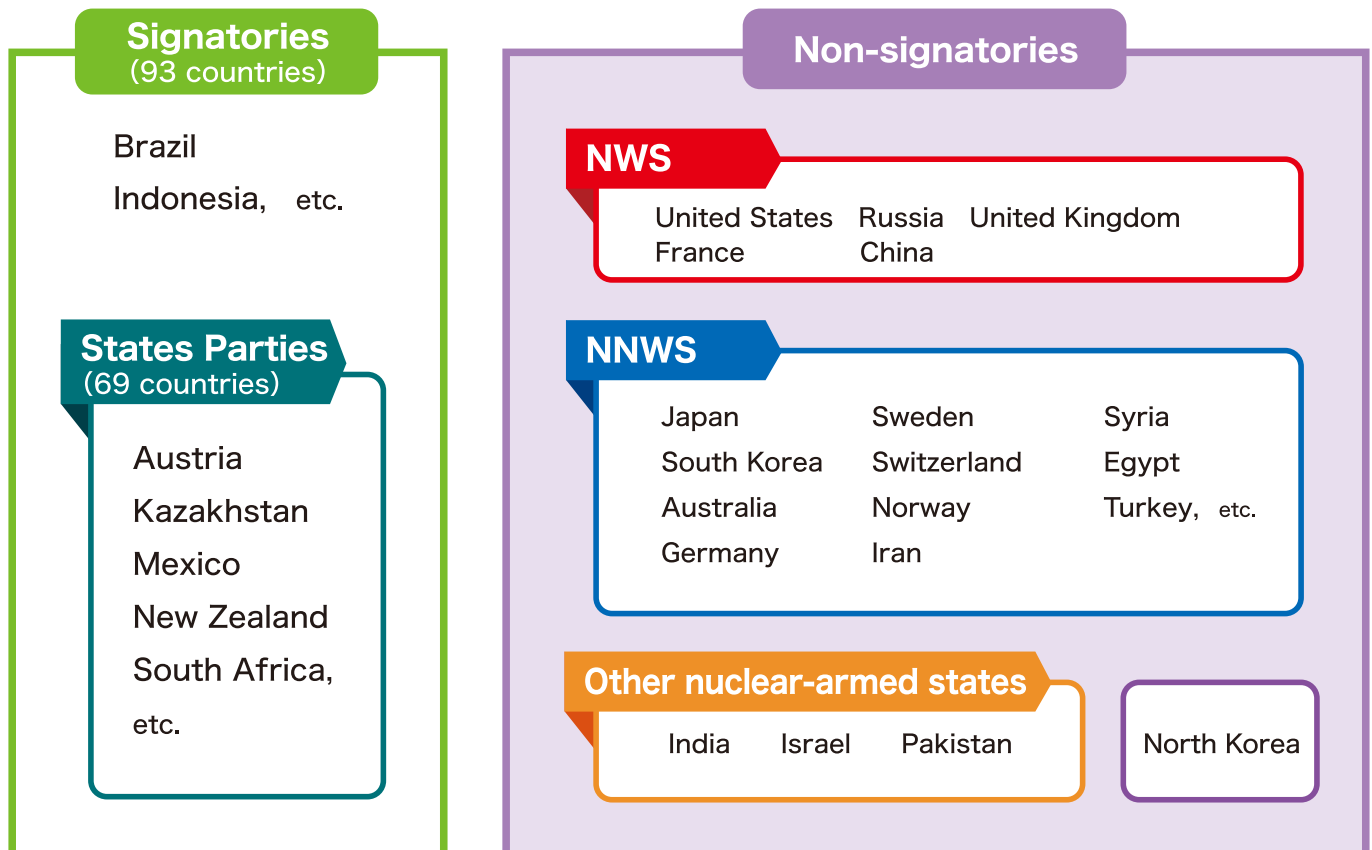
【Signatures/Ratification】

Since it was opened to be signed on September 20, 2017, the number of signatories/ratifying countries has steadily increased and entered into force on January 22, 2021, after reaching 50 ratifying countries on October 24, 2020. As of the end of 2023, the number of signatories was 93 and the number of states parties reached 69.

【Challenges】

All NWS and other nuclear-armed states, as well as NNWS allied with the United States (“nuclear umbrella states”) including Japan, have not signed the TPNW. NWS oppose an immediate ban on nuclear weapons for their respective national security reasons. “Nuclear umbrella states” also argue that nuclear disarmament should be pursued with the participation of NWS.

【Status of signatories and states parties to the TPNW】 (as of the end of 2023) See world map on p. 1



Evaluation by the Hiroshima Report

The *Hiroshima Report 2024* studies, analyzes, and evaluates trends regarding nuclear issues among selected countries in 2023.

【Methodology】

Three areas—nuclear disarmament, nuclear non-proliferation and nuclear security—are studied, analyzed and evaluated, based on open source materials and other available information.

- Nuclear disarmament: Reduction and eventual elimination of nuclear warheads and their delivery vehicles, and creation of an environment conducive to such reduction and elimination.

41 items (quantity of nuclear weapons, voting behavior at the UN General Assembly, etc.)

- Nuclear non-proliferation: Not increasing the number of countries possessing nuclear weapons; and cooperating in the peaceful use of nuclear materials.

19 items (accession to the NPT, cooperation with the IAEA, etc.)

- Nuclear security: Prevention of terrorist activities using nuclear or other radiological materials.

18 items (quantity of nuclear material, membership status in relevant conventions, etc.)

【Countries Evaluated】

- NWS under the NPT (5): U.S., Russia, U.K., France, China

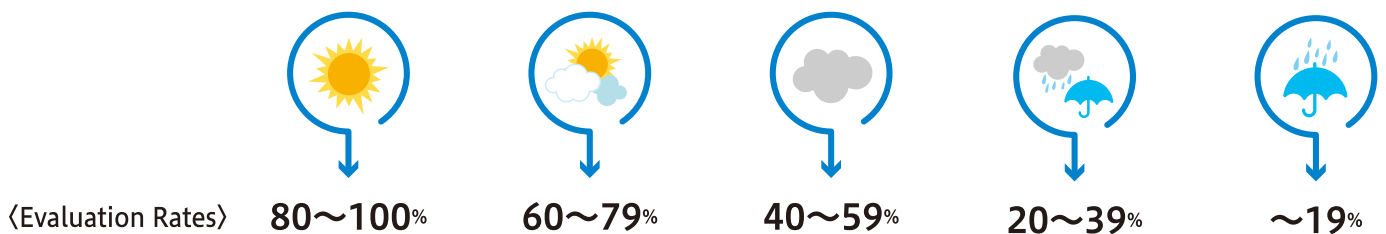
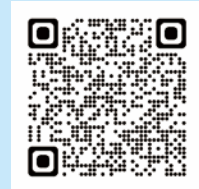
- Nuclear-armed states outside the NPT (3): India, Israel, Pakistan

- NNWS (22 for nuclear disarmament and non-proliferation, 18 for nuclear security)
: Japan, Germany, Austria, Iran, South Africa, etc.

- Other: North Korea

The following are the evaluation rates for the countries evaluated, quantifying the status of their efforts in each area. For NNWS, representative countries are selected.

For more information about the Hiroshima Report, read here (official website of Hiroshima for Global Peace)



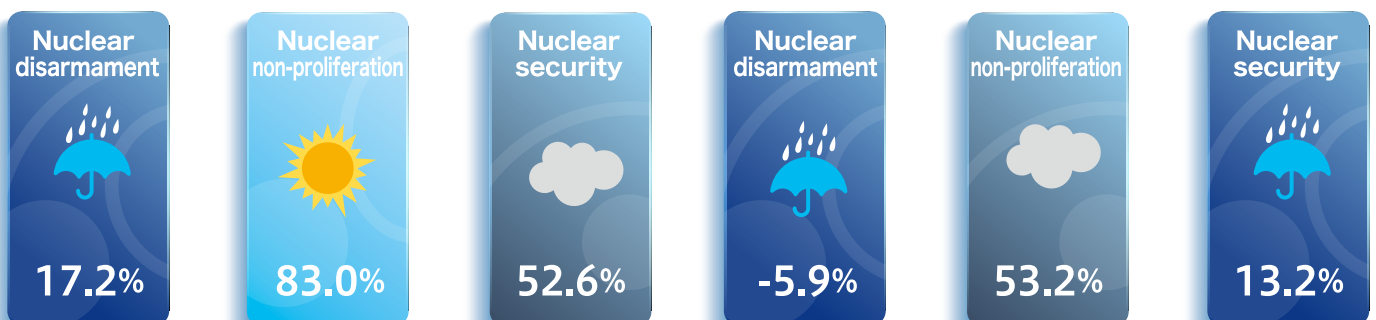
5 Nuclear-Weapon States



United States



Russia



5 Nuclear-Weapon States



United Kingdom



France



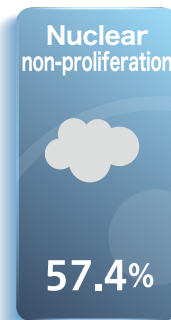
Other Nuclear-Armed States



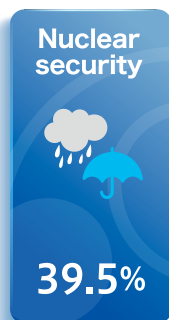
India



China



Israel



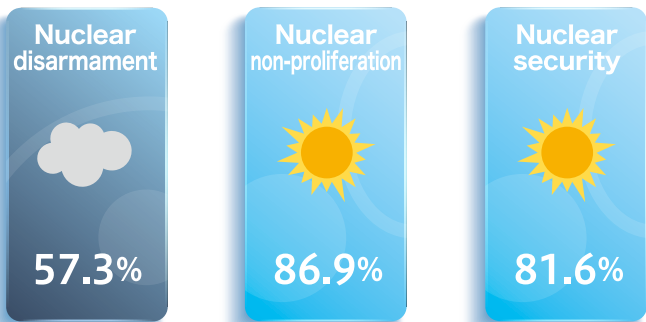
Pakistan



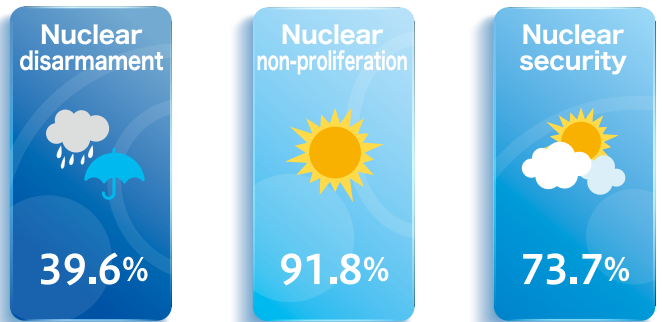
Non-Nuclear-Weapon States



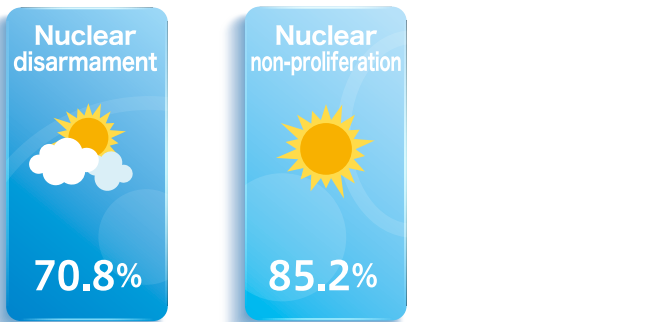
Japan



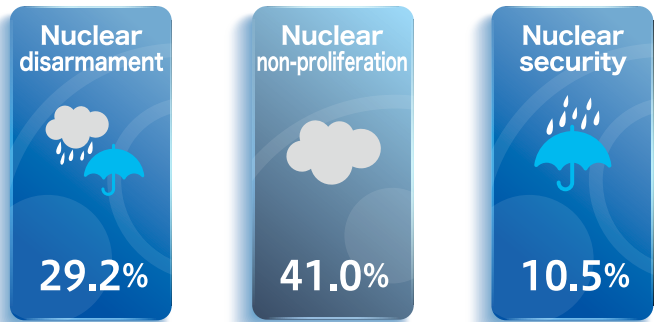

Germany



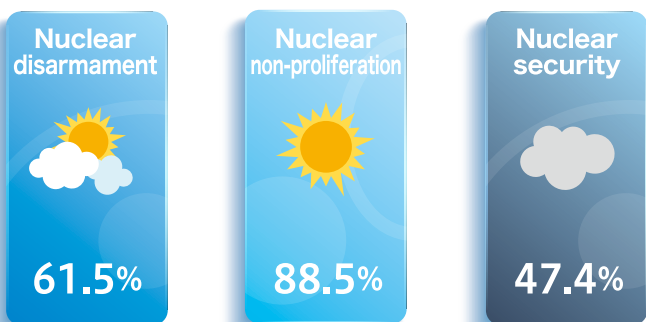

Austria



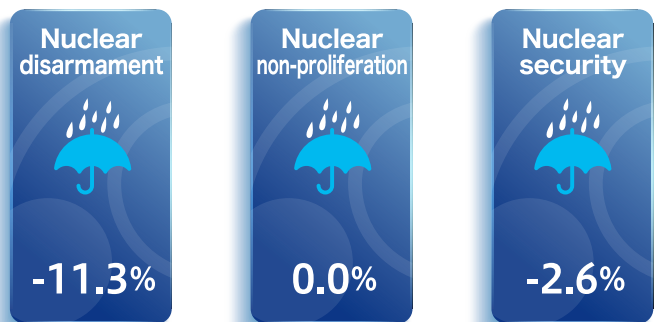

Iran




South Africa




North Korea



Other

Key Nuclear Issues in 2023

G7 Hiroshima Summit

At the G7 Hiroshima Summit held in May 2023, the “G7 Leaders’ Hiroshima Vision on Nuclear Disarmament (Hiroshima Vision)” was adopted. This document is the first G7 Leaders’ statement focused on nuclear disarmament. While the reaffirmation of the commitment to a “world without nuclear weapons” was recognized as an important achievement to an extent, some criticized the lack of a concrete roadmap to a total elimination of nuclear weapons, as well as the adoption of language regarding nuclear deterrence, which would be perceived as endorsing the status quo. During the Summit, the leaders of the G7 and invited countries and representatives of international institutions as well as Ukrainian President Zelensky visited the Peace Memorial Museum, engaged in dialogue with atomic bomb survivors, and laid flowers at the Cenotaph for the Atomic Bomb Victims.

Russia’s Invasion and Nuclear Issues

In its invasion of Ukraine that began in February 2022, Russia has repeatedly made nuclear intimidation, instilling a strong sense of crisis in the international community that nuclear weapons might be used for the first time since the atomic bombings of Hiroshima and Nagasaki. Furthermore, the Russian attacks on and occupation of the Zaporizhzhia nuclear power plant—despite knowing it was still in operation—called attention to an additional challenge: namely, the safety of nuclear facilities threatened by a state in the event of armed conflict.

The Disarmament Fora

The Second Meeting of the States Parties to the Treaty on the Prohibition of Nuclear Weapons (TPNW) was held in November to December, and reached a consensus on the declaration and the decisions. The meeting was attended by 56 state parties, 122 non-governmental-organizations, and 33 countries as observers. At the first Preparatory Committee for the 2026 NPT Review Conference held from July to August, where the seriousness of the rifts between NWS and NNWS, as well as among NWS themselves, was seen once again.

Stagnation in Nuclear Disarmament

As the international security environment has grown increasingly tense, NWS have reaffirmed their belief in the importance of nuclear deterrence, and continued to modernize their nuclear forces. Nuclear disarmament efforts continue to stagnate, or in some cases even regress. Russia suspended the implementation of the New START, and revoked to ratify the CTBT. Discussions on further reduction of nuclear weapons between the United States and Russia following the New Strategic Arms Reduction Treaty (New START)—or among multilateral partners, including China—have failed to progress. NNWS allied with NWS are also increasing their reliance on extended deterrence, including the nuclear umbrella.

Nuclear Proliferation Concerns

With the aim of strengthening its nuclear deterrent capability, North Korea has continued to conduct missile launch tests and drills frequently, and has also alluded to potential introduction of tactical nuclear weapons. Indirect negotiations between the United States and Iran to revive the Iranian nuclear deal have made no progress, and during this time, Iran has even increased its stockpile of enriched uranium as well as enhanced the level of its enrichment.

Civil Society

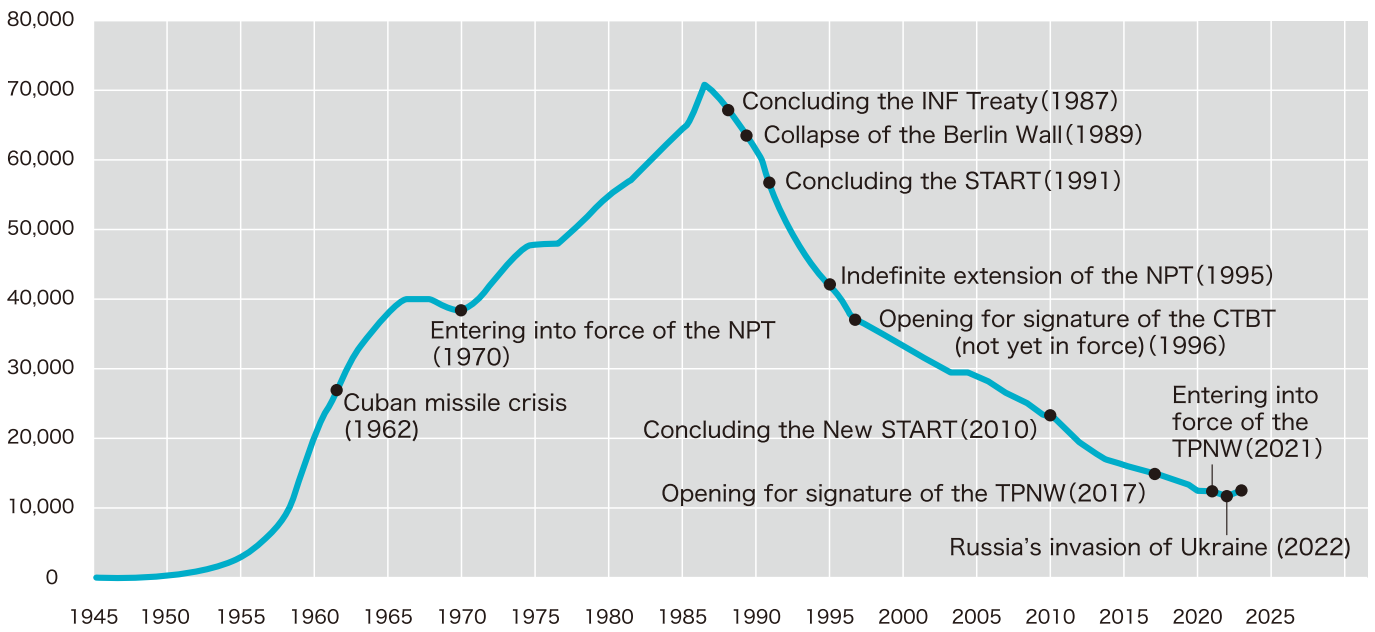
At the NPT Preparatory Committee, the Meeting of the States Parties to the TPNW, and various other forums, many countries, NGOs and other actors emphasized the importance of disarmament and non-proliferation education, diversity and inclusion (including gender), further participations of civil society, and increased opportunities for more people—especially younger generation and leaders—to learn firsthand the realities of nuclear weapon use.

Nuclear Weapons in the World

In July 1945, the United States conducted the world's first successful nuclear test, and the following month atomic bombs were dropped on Hiroshima (August 6) and Nagasaki (August 9). Since then, nuclear weapons have not been used in actual warfare for over 75 years. Nevertheless, the United States, Russia, the United Kingdom, France, China, India, and Pakistan currently possess nuclear weapons, and Israel is widely believed to possess them as well. Furthermore, in the 2000s, North Korea conducted nuclear tests, and has publicly stated that it possesses nuclear weapons.

During the Cold War, when the nuclear arms race between the United States and the Soviet Union was at its peak, there were as many as 70,000 nuclear weapons on the Earth. The number has been reduced with the end of the Cold War. However, an estimated 12,512 nuclear weapons still exist in 2023. The pace of reduction of such weapons has slowed in recent years. Rather, the pace of China's nuclear buildup has accelerated, and India and Pakistan are estimated to have increased at a rate of about 10 warheads per year over the past several years. North Korea's nuclear arsenal is also highly likely to be increasing.

World Nuclear Arsenals:1945-2023 (estimated)



Source:1945-2006 from Bulletin of the Atomic Scientists; 2007-2023 from SIPRI Yearbook

In addition, all NWS/other nuclear-armed states continue to modernize their nuclear weapons and their delivery vehicles, such as missiles. Some of them have conducted subcritical experiments and computer simulation that do not involve nuclear explosions, and in some cases even nuclear test explosions.

As international and regional security environments become increasingly unstable, NWS/other nuclear-armed states consider that nuclear deterrence is essential for ensuring their respective national security, and re-emphasize the role of nuclear weapons. In order to achieve a "world without nuclear weapons," it is necessary to improve the international and regional security environment, and reduce the role of nuclear weapons.

At the same time, given that the use of nuclear weapons would have devastating humanitarian consequences, it is important to convey the reality of the atomic bombings, and to establish a norm that nuclear weapons must be eliminated.



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