



Comprehensive Nuclear Test Ban Treaty

[Source: IE](#)

Why in News?

Russia has recently indicated that it is moving towards **revoking its ratification of the [Comprehensive Nuclear Test Ban Treaty \(CTBT\)](#)**.

What is the Comprehensive Nuclear Test Ban Treaty (CTBT)?

▪ Genesis of the CTBT:

- The CTBT is a multilateral treaty aimed at **banning all nuclear explosions, whether for military or peaceful purposes**.
- The roots of the CTBT can be traced back to the [Cold War](#) era when the United States and the [Soviet Union](#) were engaged in a [nuclear arms race](#), conducting numerous nuclear tests.
 - Between **1945 and 1996, over 2,000 nuclear tests took place globally**, with the **U.S. conducting 1,032 tests and the Soviet Union conducting 715 tests, among others**.
- In response to concerns about the **environmental and health impacts of nuclear tests**, the international community made efforts to limit testing.
- The **Limited Nuclear Test-Ban Treaty (LTBT) of 1963** prohibited nuclear testing in the **atmosphere, outer space, and underwater but allowed underground tests**.
- The **Threshold Test Ban Treaty (TTBT) of 1974** prohibits **underground nuclear weapons tests** and establishes a nuclear "threshold," yet it falls short of providing a comprehensive ban on all nuclear testing.

▪ Breakthrough with the CTBT:

- The end of the Cold War and the **dissolution of the Soviet Union** created a conducive environment for comprehensive arms control measures.
- The CTBT was negotiated at the **Conference on Disarmament in Geneva in 1994**.
- In 1996, the [United Nations](#) **adopted the CTBT**, which imposed a complete ban on nuclear weapons testing, closing the gaps left by previous treaties.
- The CTBT became available for signature in September 1996, signifying a major advancement in the global endeavour to halt nuclear testing across the world.
 - The CTBT will enter into force 180 days after it has been **ratified by all 44 states listed in Annex 2 to the treaty**, which are states that possessed nuclear reactors or research reactors at the time of its adoption.

▪ Current Position:

- It has been signed by 187 nations and ratified by 178. However, the treaty cannot formally enter into force until it is **ratified by 44 specific nations**. Eight of these nations have yet to ratify the treaty:
 - China, India, Pakistan, North Korea, Israel, Iran, Egypt, United States.

Treaties Against Nuclear Weapons

Part - I

Nuclear Weapons

- The most dangerous weapons on earth; a **bomb or missile that uses nuclear energy to cause an explosion.**
- Nuclear weapons release energy either by **nuclear fission (atomic bombs) or nuclear fusion (hydrogen bombs).**
- Even a single weapon is potent of **destroying a whole city**, potentially **killing millions**, **jeopardising the natural environment** and lives of future generations.
- They were used for the **first and last time in WW-II** by the US in 1945 on **Hiroshima and Nagasaki.**

Treaty on the Non-Proliferation of Nuclear Weapons (NPT 1970)



- **Objective:**
 - Prevent the spread of nuclear weapons and its technology
 - Foster peaceful uses of nuclear energy
 - Further the goal of nuclear disarmament
- **Member States:**
 - 191 with **5 nuclear-weapon states (NWS)** (US, Russia, UK, France & China)
- **Nuclear-Weapon States:**
 - Those who **manufactured & exploded** a nuclear weapon or nuclear explosive device **before 1st January 1967**
- **Significance:**
 - **Only binding treaty** to the goal of disarmament by the NWS
- **India and NPT:**
 - India (along with Pakistan, Israel, North Korea, and South Sudan) is **not a member**
 - Opposes it as a **discriminative disarmament policy**
 - India's policy - **No First Use against NWS** and **no use against non-NWS**
- **NPT Review Conference:**
 - **Undertakes review** of the treaty's implementation **quinquennially**



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The Vision

Missile Technology Control Regime (MTCR) (1987)

- An informal and voluntary partnership
- Not legally binding
- Established in 1987 by G7 countries

Objective: To prevent the proliferation of missile and UAV (Unmanned Aerial Vehicle) technology capable of carrying >500 kg payload for range >300 km

MTCR Categories

Category I Items

- Complete rocket and UAV systems (>500 kg payload for >300 km)
- Such items are subjected to unconditional strong presumption of denial for export

Category II Items

- Less-sensitive and dual-use missile related components and other complete missile systems (range >300 km)
- Their export is subject to licensing requirements

35 Member Countries

India inducted into the MTCR in 2016 as the 35th member

China not a member

Mandate on Members

- Prohibition from supplying missiles and UAV systems controlled by the MTCR to non-members.
- In 1992, the ambit was extended to all Weapons of Mass Destruction - nuclear, chemical & biological.

Secretariat: No formal Secretariat; France serves as MTCR's Point of Contact

MTCR and UN: No formal linkage but remains committed to the UN's non-proliferation and export control efforts

Significance for India

- Can procure high-end missile technology
- Can run joint programmes for development of UAVs with other countries

Comprehensive Nuclear-Test-Ban Treaty (CTBT) (1996)

Objective: Ban all nuclear explosions - everywhere, by everyone

Negotiated At: Conference on Disarmament in Geneva 1996 (adopted by UNGA)

185 Signatories

Out of 44, 36 countries have ratified

Treaty will enter into force after all 44 States listed in Annex 2 will ratify it (States having nuclear facilities at the time the Treaty was negotiated and adopted)

8 Annex-2 Countries Not Ratified

- China, North Korea, Egypt, India, Iran, Israel, Pakistan and the US
- India, North Korea and Pakistan haven't also signed the Treaty

CTBT Organisation

- Promotes the Treaty so that it can enter into force
- Headquartered in Vienna



UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. What is/are the consequence/consequences of a country becoming the member of the 'Nuclear Suppliers Group'? (2018)

1. It will have access to the latest and most efficient nuclear technologies.
2. It automatically becomes a member of "The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)".

Which of the statements given above is/are correct?

- (a) 1 only
 (b) 2 only
 (c) Both 1 and 2
 (d) Neither 1 nor 2

Ans: (a)

Q. Consider the following countries: (2015)

1. China
2. France
3. India
4. Israel
5. Pakistan

Which among the above are Nuclear Weapons States as recognized by the Treaty on the Non-Proliferation of Nuclear Weapons, commonly known as Nuclear Non-Proliferation Treaty (NPT)?

- (a) 1 and 2 only
 (b) 1, 3, 4 and 5 only
 (c) 2, 4 and 5 only

(d) 1, 2, 3, 4 and 5

Ans: (a)

Mains

Q. In what ways would the ongoing U.S-Iran Nuclear Pact Controversy affect the national interest of India? How should India respond to this situation? **(2018)**

Q. With growing energy needs should India keep on expanding its nuclear energy programme? Discuss the facts and fears associated with nuclear energy. **(2018)**

Q. Give an account of the growth and development of nuclear science and technology in India. What is the advantage of fast breeder reactor programme in India? **(2017)**

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