



## Dual Use Defence Technology

**For Prelims:** [Dual-Use Technology](#), [SCOMET Items](#), [Stockholm International Peace Research Institute \(SIPRI\)](#), [European Union \(EU\)](#), [Global Positioning Satellites](#), [Wassenaar Arrangement \(WA\)](#), [Nuclear Suppliers Group \(NSG\)](#), [Nuclear Non-Proliferation Treaty](#), [Missile Technology Control Regime \(MTCR\)](#), [National Export Control List](#), [Chemical Weapons Convention \(CWC\)](#), [Biological and Toxin Weapons Convention \(BWC\)](#)

**For Mains:** India's Position Related to Trade and Export of Dual-Use Goods and Technologies and Balancing it with National Interests.

**Source:** [IE](#)

### Why in News?

Recently, United States (US) government officials are sensitising Indian companies and exporters to deter them from supplying [dual-use technology](#) to Russia.

- Exporting chemicals, aeronautic parts, and components that can be used in defence equipment can attract Western sanctions.

### What are Dual Use Goods/Technologies?

- **About Dual Use Goods:**
  - Dual-use goods are items that can be used both for **civilian and military applications**.
  - Examples of dual-use goods and technology include [global positioning satellites](#), missiles, nuclear technology, chemical and biological tools, **night vision technology**, thermal imaging, drones etc.
- **Examples of Dual-Use Technologies:**
  - **Hypersonics:** [Hypersonic systems](#) fly at or above 5 times the speed of sound. They could be used for **low-cost satellite launches and as a backup if satellites fail**.
  - **Integrated Network Systems-of-Systems:** It allows governments to better integrate many diverse mission systems and provide **fully networked command, control**, and communication that is capable, resilient, and secure.
  - **Microelectronics:** Every military and commercial system relies on **microelectronics** for creation of personal computers, cell phones and defence equipment.
- **Export Controls Provisions Related to Dual Use Goods/Technologies:** Their trade and export are regulated by multilateral dual-use export control regimes.
  - **Wassenaar Arrangement (WA):** It aims to contribute to regional and international security and stability, by promoting **transparency** and greater **responsibility** in transfers of **conventional arms and dual-use goods and technologies**.
    - **India** was inducted to the [Wassenaar Arrangement](#) in **2017** as the **42nd member**.
  - **Nuclear Suppliers Group (NSG):** [NSG](#) is a group of **nuclear fuel/technologies supplier countries** that seeks to contribute to the non-proliferation of nuclear weapons.

- **India is not a member** of the NSG as India's non-signatory status to the [Nuclear Non-Proliferation Treaty](#).
  - Although **India** is not a member of the NSG, it **voluntarily practices non-proliferation of nuclear technologies**
- **Australia Group:** It is an informal forum of countries which, through the harmonisation of export controls, seeks to ensure that exports do not contribute to the development of [chemical or biological weapons](#).
  - India joined the [Australia Group](#) in 2018.
- **Missile Technology Control Regime (MTCR):** [MTCR](#) is an informal and voluntary partnership among 35 countries to prevent the proliferation of **missile and unmanned aerial vehicle technology** capable of carrying greater than 500 kg payload for more than 300 km.
  - **India** was inducted into the Missile Technology Control Regime in **2016**.
- **CWC and BWC:** **India is a signatory to international conventions on disarmament and non-proliferation, viz. the [Chemical Weapons Convention \(CWC\)](#) and [Biological and Toxin Weapons Convention \(BWC\)](#).**
- **UN Security Council Resolution 1540:** The [United Nations](#) requires member countries to **control the export of goods that could cause harm to humanity** and the pursuit of global peace.

## What are Key Developments in Dual-Use Defence Technology in Relation to Russia?

- **Fear of Sanctions:** Indian companies are at a risk of facing sanctions from the US under the [Countering America's Adversaries Through Sanctions Act \(CAATSA\)](#).
- **Limiting Financial Access:** **U.S. Treasury officials** have advised Indian banks and financial institutions that doing business with **Russia's military-industrial base** could risk their access to the U.S. financial system.
- **India's Position on Dual-Use Exports:** The items identified by the US are not **Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET) items**, which require licensing for trade.
  - Dual-use goods are categorised under the SCOMET list in India.
- **India's Role and US Concerns:** The US believes certain [SCOMET items](#) are entering the Russian defence manufacturing system.
  - **India's exports** to Russia increased by 40% in 2023, surpassing **USD 4 billion**. **Engineering goods** played a major role, with exports nearly doubling from **USD 680 million** in 2022 to USD 1.32 billion in 2023.
- **China's Role and US Concerns:** The US said that China is the top supplier of machine tools, [microelectronics](#), and nitrocellulose, which are critical for manufacturing munitions and [rocket propellants](#).
  - The US has blacklisted over 300 companies, citing China as the top supplier of critical dual-use items to Russia.
  - **Iran has supplied Russia with munitions**, artillery shells, and drones.

### Note:

- **Russia's Increased Defense Spending:** Russia's military spending grew by 24% in 2023 to an estimated USD 109 billion, as per the [Stockholm International Peace Research Institute \(SIPRI\)](#).
- As per the [World Bank](#), economic activity in Russia was influenced by a significant increase in military-related activity in 2023.

## What is India's Strategic Trade Control System?

- **About:** Strategic Trade Controls are **laws and regulations** on managing the flow of dual-use goods, services and technologies across national borders.
  - **Important Legislations Include**
    - [Weapons of Mass Destruction and their Delivery Systems \(Prohibition of Unlawful Activities\) Act, 2005](#)
    - [Arms Act, 1959](#)
    - [Atomic Energy Act, 1962](#)
    - [Chemical Weapons Convention Act, 2000](#)
    - [Explosives Act 1884](#), etc.
  - These laws and regulations primarily focus on controlling the export of such items to balance the country's **commercial and security considerations**.
- **SCOMET List:** India regulates the exports of dual-use items, nuclear-related items, and military items, including software and technology under the SCOMET list.
  - The SCOMET list is our **National Export Control List** of dual-use items, munitions and nuclear-related items, including software and technology

## Conclusion

Balancing the **export control** of dual-use goods with **national interests** is crucial for India. While it's essential to comply with **international regulations** and avoid sanctions, especially in sensitive geopolitical contexts like those involving Russia, India must also protect its **economic interests** and maintain **strategic autonomy**. Strengthening oversight and industry awareness ensures that export policies align with international standards, fostering both innovation and national security.

### **Drishti Mains Question**

Q. What are dual-use goods and technologies? Discuss India's national and international commitment in non-proliferation of dual-use goods and technologies.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### ***Prelims:***

**Q. Recently, the USA decided to support India's membership in multilateral export control regimes called the "Australia Group" and the "Wassenaar Arrangement". What is the difference between them? (2011)**

1. The Australia Group is an informal arrangement which aims to allow exporting countries to minimize the risk of assisting chemical and biological weapons proliferation, whereas the Wassenaar Arrangement is a formal group under the OECD holding identical objectives.
2. The Australia Group comprises predominantly Asian, African and North American countries whereas the member countries of Wassenaar Arrangement are predominantly from the European Union and American Continents.

**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: (d)**

**Q. Consider the following statements: (2008)**

1. The Nuclear Suppliers Group has 24 countries as its members.
2. India is a member of the Nuclear Suppliers Group.

**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: (d)**

**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)**

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### **Mains**

**Q.** With growing energy needs should India keep on expanding its nuclear energy programme?

**Q.** Discuss the facts and fears associated with nuclear energy. **(2018)**