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Jansatta

“You are not lazy—you’re just too comfortable with delay.”

Russia expresses readiness to boost oil, LNG supplies to India

Russian Deputy PM Manturov discusses trade, fertilizers, connectivity, people-to-people ties with Modi; Russia cites 'particular attention' paid to cooperation in sectors like oil, gas; joint project for production of urea under development, says Manturov

Kallol Bhattacharjee
NEW DELHI

Amid the oil shock and supply chain disruptions triggered by the U.S.-Israel war on Iran, Russia has assured that its energy companies have the capacity to "steadily increase" the supply of oil and liquefied natural gas (LNG) to India, and also "continue" to address India's fertilizer needs.

Russian Deputy Prime Minister Denis Manturov, on a two-day visit, called on Prime Minister Narendra Modi on Thursday and discussed the supply of fertilizers.

"We discussed our mutually beneficial cooperation in trade, fertilizers, connectivity and people-to-people ties," said Mr. Modi, who "welcomed sustained efforts from both sides" to realise the agreements of the 23rd India-Russia Annual Summit hosted here in December 2025.

The visit is being seen as part of the preparations by the two sides ahead of the



Narendra Modi interacts with Russian Deputy Prime Minister Denis Manturov in New Delhi on Thursday. ANI

upcoming BRICS summit to be hosted by India and the India-Russia annual summit scheduled in Russia this year.

According to the Russian embassy, Mr. Manturov said that Russia has increased supplies of "in-demand mineral fertilizers to India by 40% and is ready to continue meeting India's needs for this product".

He also mentioned that a joint project for the production of carbamide (urea) is "under development". "Particular attention was paid to cooperation in the oil and gas sector. Manturov con-

firmed that Russian companies have the capacity to steadily increase supplies of oil and liquefied natural gas to the Indian market," said the embassy readout.

Mr. Manturov also met with External Affairs Minister S. Jaishankar, Finance Minister Nirmala Sitharaman and National Security Advisor Ajit Doval, and the leaders discussed continued energy supply to India.

In a press note, the External Affairs Ministry said Mr. Jaishankar and Mr. Manturov "exchanged views on regional and global developments, including the conflict in West

India-bound oil heads to China?

CHENNAI

Ping Shun, an Iranian crude oil carrier that had been showing it was heading to India, for three days after crossing the Strait of Hormuz, is heading to China, as per marine logistics and commodity markets analytics firm Kpler. » PAGE 11

Asia." Mr. Manturov said Russia will deepen nuclear cooperation with India. Other topics such as industrial cooperation, space and educational projects were discussed in the meetings.

Mr. Manturov's Delhi visit, which ended on Friday, took place days after Russian Foreign Minister Sergei Lavrov and Mr. Jaishankar addressed a conference on bilateral relations through a video link on March 23, during which Mr. Lavrov indicated Russia's preparations for the annual summit.

Mr. Lavrov had expressed Russia's support

for the BRICS where India is the current Chair.

The group has attracted attention in recent weeks as it has not made a statement on the evolving situation in West Asia, though Russia, India and China, who form a trilateral subgroup called RIC, have indicated that they will work closely within BRICS, Shanghai Cooperation Organisation and the UN on issues that affect common interests of the Global South.

This was followed by the March 30 Foreign Office Consultations between India and Russia led by Foreign Secretary Vikram Misri and Russia's Deputy Foreign Minister Andrey Rudenko.

This week, the Indian side hosted Vladimir Yakushev, First Deputy Chairman of the Federation Council (Upper House) of the Federal Assembly of Russia. On Thursday, Mr. Yakushev met Deputy Chairman of the Rajya Sabha Harivansh Narayan Singh and Lok Sabha Speaker Om Birla.

- **Russian Deputy PM Denis Manturov visited New Delhi** and met PM Modi, EAM Jaishankar, FM Sitharaman, and NSA Ajit Doval.
- **रूसी उप-प्रधानमंत्री डेनिस मंटुरोव** ने नई दिल्ली का दौरा किया और PM मोदी, EAM जयशंकर, FM सीतारमण और NSA अजीत डोवाल से मुलाकात की।
- Russia assured India of **steady increase in oil and LNG supplies** amid global oil shock triggered by the U.S.-Israel war on Iran.
- रूस ने भारत को **तेल और LNG आपूर्ति में स्थिर वृद्धि** का आश्वासन दिया, अमेरिका-इजराइल-ईरान युद्ध से उत्पन्न वैश्विक तेल संकट के बीच।
- Russia increased supply of **mineral fertilizers to India by 40%** and is developing a **joint urea (carbamide) production project**.
- रूस ने भारत को **खनिज उर्वरकों की आपूर्ति 40% बढ़ाई** और एक **संयुक्त यूरिया (कार्बामाइड) उत्पादन परियोजना** विकसित कर रहा है।
- Visit is seen as **preparation for the upcoming BRICS summit** (hosted by India) and **India-Russia Annual Summit** (in Russia).
- यह दौरा **आगामी BRICS शिखर सम्मेलन** (भारत की अध्यक्षता में) और **भारत-रूस वार्षिक शिखर सम्मेलन** (रूस में) की तैयारी के रूप में देखा जा रहा है।
- An **Iranian crude oil carrier (Ping Shun)** reportedly redirected to China after crossing Strait of Hormuz — raising questions about India-bound oil diversion.
- एक **ईरानी कच्चे तेल का वाहक (Ping Shun)** होर्मुज जलडमरूमध्य पार करने के बाद चीन की ओर मुड़ गया — भारत-बाध्य तेल के डायवर्जन पर सवाल उठाते हुए।

- India depends heavily on **imported oil and gas** to run its economy — refineries, factories, transport all need energy.
- भारत अपनी अर्थव्यवस्था चलाने के लिए **आयातित तेल और गैस** पर अत्यधिक निर्भर है — रिफाइनरी, कारखाने, परिवहन सभी ऊर्जा की मांग करते हैं।
- After Russia was **sanctioned by the West** (due to Ukraine war), India started buying **discounted Russian crude oil** — a smart strategic move.
- रूस पर **पश्चिमी प्रतिबंधों** (यूक्रेन युद्ध के कारण) के बाद, भारत ने **रियायती रूसी कच्चा तेल** खरीदना शुरू किया — एक चतुर रणनीतिक कदम।
- Now Russia wants to **deepen this partnership** — more oil, LNG (liquid natural gas), fertilizers, nuclear cooperation, space and industrial cooperation.
- अब रूस इस **साझेदारी को और गहरा** करना चाहता है — अधिक तेल, LNG (तरल प्राकृतिक गैस), उर्वरक, परमाणु सहयोग, अंतरिक्ष और औद्योगिक सहयोग।
- India is also the **current Chair of BRICS** — making this meeting diplomatically very significant.
- भारत वर्तमान में **BRICS का अध्यक्ष** है — इस मुलाकात को कूटनीतिक रूप से बेहद महत्वपूर्ण बनाता है।

D5. Why Important for India? / भारत के लिए क्यों महत्वपूर्ण?

- **Energy Security:** India imports ~87% of its crude oil needs; Russia is now India's top oil supplier.
- **ऊर्जा सुरक्षा:** भारत अपनी कच्चे तेल की ~87% जरूरत आयात करता है; रूस अब भारत का शीर्ष तेल आपूर्तिकर्ता।
- **Food Security via Fertilizers:** India's agriculture is heavily dependent on urea; Russia is a major fertilizer exporter — 40% increase is critical for farmers.
- **उर्वरक के माध्यम से खाद्य सुरक्षा:** भारत की कृषि यूरिया पर भारी निर्भर; रूस एक प्रमुख उर्वरक निर्यातक — 40% वृद्धि किसानों के लिए महत्वपूर्ण।
- **Strategic Autonomy:** India balancing between Russia (traditional partner) and the West (economic partner) — a delicate multi-alignment.
- **रणनीतिक स्वायत्तता:** भारत रूस (पारंपरिक भागीदार) और पश्चिम (आर्थिक भागीदार) के बीच संतुलन — एक नाजुक बहु-संरेखण।
- **Nuclear Cooperation:** Russia building **Kudankulam Nuclear Power Plant** in Tamil Nadu — deepening nuclear cooperation is important.
- **परमाणु सहयोग:** रूस तमिलनाडु में **कुडनकुलम परमाणु ऊर्जा संयंत्र** का निर्माण कर रहा है — परमाणु सहयोग गहरा करना महत्वपूर्ण।
- **Cheap Imports:** Discounted Russian oil has helped **control India's inflation and current account deficit (CAD)**.
- **सस्ते आयात:** रियायती रूसी तेल ने **भारत की मुद्रास्फीति और चालू खाता घाटे (CAD) को नियंत्रित** करने में मदद की।
- **Defence:** India's major defence equipment is of Russian origin (MiG, Su-30, T-90 tanks, S-400); sustained relations needed for spares and upgrades.
- **रक्षा:** भारत के प्रमुख रक्षा उपकरण रूसी मूल के हैं (MiG, Su-30, T-90 टैंक, S-400); स्पेयर और अपग्रेड के लिए संबंध बनाए रखना जरूरी।



D6. Why Important for the World? / विश्व के लिए क्यों महत्वपूर्ण?

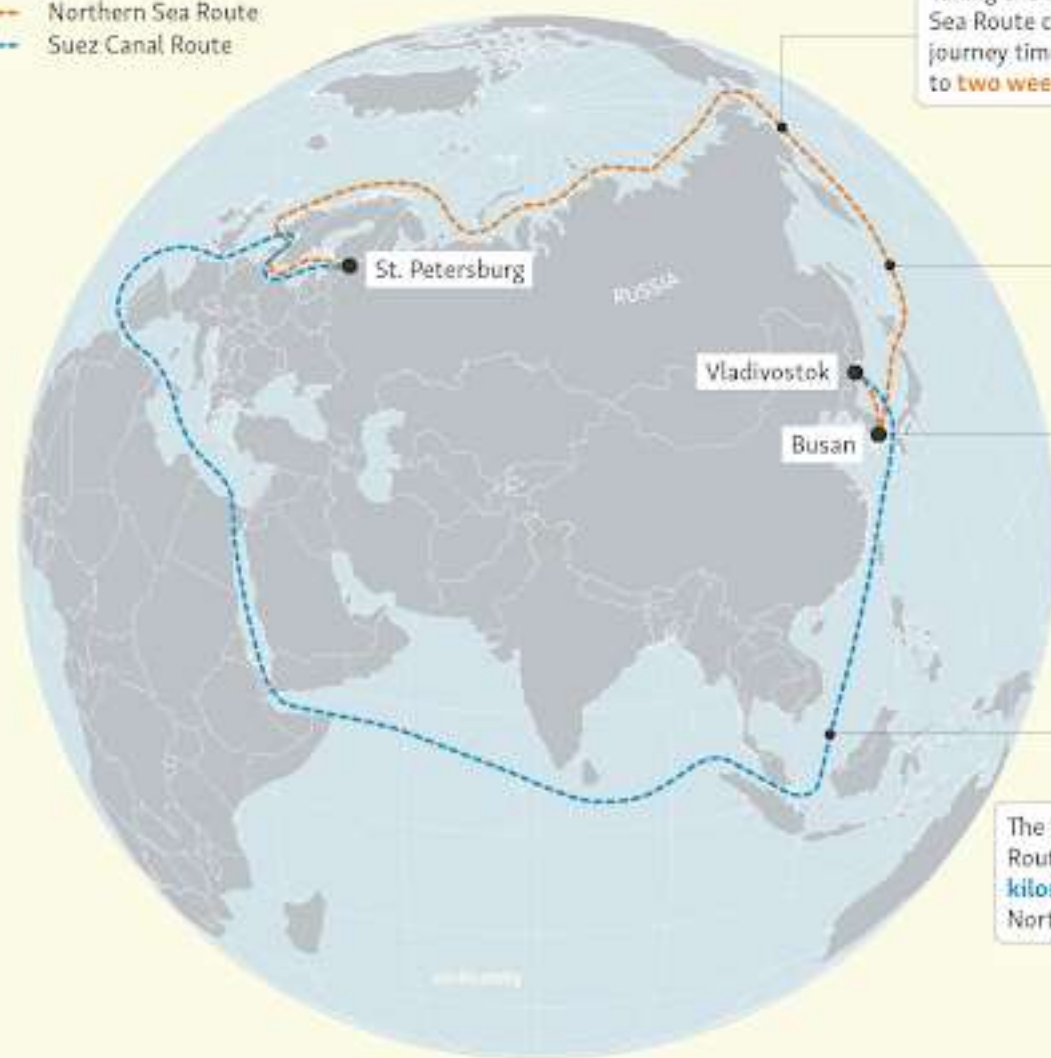
- India-Russia trade shows that **Global South countries are building their own energy networks** bypassing Western sanctions.
- भारत-रूस व्यापार दिखाता है कि **वैश्विक दक्षिण देश पश्चिमी प्रतिबंधों को दरकिनार कर अपने ऊर्जा नेटवर्क बना रहे हैं।**
- **BRICS expansion** (now includes Egypt, Ethiopia, Iran, UAE, Saudi Arabia) — new oil-producing members create alternative global energy architecture.
- **BRICS विस्तार** (अब मिस्र, इथियोपिया, ईरान, UAE, सऊदी अरब शामिल) — नए तेल उत्पादक सदस्य वैकल्पिक वैश्विक ऊर्जा संरचना बनाते हैं।
- **West Asia conflict** threatens global oil prices, shipping routes, and food supply chains — India-Russia energy partnership provides stability.
- **पश्चिम एशिया संघर्ष** वैश्विक तेल कीमतों, शिपिंग मार्गों और खाद्य आपूर्ति श्रृंखलाओं को खतरा देता है — भारत-रूस ऊर्जा साझेदारी स्थिरता प्रदान करती है।



Northern Sea Route: A New Shipping Highway?

Maersk, the world's biggest shipping company, is preparing to send a cargo vessel through the Russian Arctic for the first time. This is how the passage compares to the traditional Suez Canal route.

— Northern Sea Route
— Suez Canal Route



Taking the Northern Sea Route can cut the journey times by up to **two weeks**.

The passage is now feasible for **three months a year**, but this might change due to even more of the ice melting.

The Venta Maersk departed Vladivostok and is stopping in Busan, South Korea, before making its trial journey.

The traditional Suez Canal Route is more than **8,000 kilometers longer** than the Northern Sea passage.

The India-Middle East-Europe Economic Corridor

THE ECONOMIC CORRIDOR

--- Sea Route
— Rail Route



Image Credit: VajiramAndRavi

F3. Future Implications / भविष्य के प्रभाव

- **Best Case:** India secures long-term discounted energy supply from Russia; joint urea project reduces India's fertilizer import dependence; BRICS summit strengthens India's global leadership position.
- **सर्वोत्तम स्थिति:** भारत रूस से दीर्घकालिक रियायती ऊर्जा आपूर्ति सुरक्षित करता है; संयुक्त यूरिया परियोजना भारत की उर्वरक आयात निर्भरता कम करती है; BRICS शिखर सम्मेलन भारत की वैश्विक नेतृत्व स्थिति मजबूत करता है।
- **Worst Case:** Western pressure on India to reduce Russia ties intensifies; Rupee-Ruble payment issues remain unsolved; West Asia conflict disrupts all oil routes simultaneously.
- **सबसे खराब स्थिति:** रूस संबंध कम करने के लिए भारत पर पश्चिमी दबाव बढ़ता है; रुपया-रुबल भुगतान समस्याएं अनसुलझी रहती हैं; पश्चिम एशिया संघर्ष एक साथ सभी तेल मार्गों को बाधित करता है।
- **India's strategic challenge:** Balancing Russia (defence, energy, fertilizers) vs West (technology, investment, trade).
- **भारत की रणनीतिक चुनौती:** रूस (रक्षा, ऊर्जा, उर्वरक) बनाम पश्चिम (प्रौद्योगिकी, निवेश, व्यापार) के बीच संतुलन।

Key Organisations / प्रमुख संगठन

Organisation	HQ	Founded	Key Fact
BRICS	No permanent HQ	2009	India Chair 2025
SCO	Beijing	2001	India member since 2017
RIC	No formal HQ	2002	Russia-India-China trilateral
OPEC	Vienna	1960	Russia not a member; OPEC+
ROSATOM	Moscow	2007	Builds Kudankulam

संगठन	मुख्यालय	स्थापना	मुख्य तथ्य
BRICS	कोई स्थायी मुख्यालय नहीं	2009	भारत 2025 अध्यक्ष
SCO	बीजिंग	2001	भारत 2017 से सदस्य
RIC	कोई औपचारिक मुख्यालय नहीं	2002	रूस-भारत-चीन त्रिपक्षीय
OPEC	वियना	1960	रूस सदस्य नहीं; OPEC+
ROSATOM	मास्को	2007	कुडनकुलम बनाता है

Q. Consider the following statements regarding India-Russia energy relations: निम्नलिखित कथनों पर विचार करें:

1. Russia is currently India's largest supplier of crude oil. रूस वर्तमान में भारत का सबसे बड़ा कच्चे तेल का आपूर्तिकर्ता है।
2. The Kudankulam Nuclear Power Plant is located in the state of Kerala. कुडनकुलम परमाणु ऊर्जा संयंत्र केरल राज्य में स्थित है।
3. India is the current Chair of BRICS (2025). भारत वर्तमान में BRICS का अध्यक्ष है (2025)।
4. LNG is natural gas compressed to high pressure for transport. LNG प्राकृतिक गैस है जिसे परिवहन के लिए उच्च दबाव पर संपीड़ित किया जाता है।

Options:

- (a) 1 and 3 only / केवल 1 और 3
- (b) 1, 2, and 3 only / केवल 1, 2 और 3
- (c) 2 and 4 only / केवल 2 और 4
- (d) 3 and 4 only / केवल 3 और 4

IN BRIEF

Indigenous stealth frigate
INS Taragiri commissioned

In a significant boost to India's maritime security and the 'Aamir' initiative, the guided missile stealth frigate INS Taragiri was commissioned into the Indian Navy at the Eastern Naval Command base in Visakhapatnam on Friday. The ceremony, attended by Defence Minister Rajnath Singh, Chief of Defence Staff General Anil Chawhan, and Chief of the Naval Staff Admiral Dinesh K. Tripathi, marked the induction of a vessel that represents a generational leap in naval engineering. Powered by a combined diesel or gas propulsion engine and equipped with supersonic surface-to-surface missiles and advanced anti-submarine suites, the frigate is now a cornerstone of the Eastern Fleet.

Ganderalh encounter: J&K
L-G orders magisterial inquiry

Jammu and Kashmir Lieutenant-Governor Manoj Sinha on Friday ordered a magisterial inquiry into the Ganderalh encounter, in which the Army claimed to have killed a terrorist in an overnight operation on March 31-April 1. "The inquiry will examine all the aspects related to the incident and ensure that justice is served," said Mr. Sinha, in a post on X. The Jammu & Kashmir Home Department has given seven days to the District Magistrate, Ganderalh, to investigate the incident and submit the report. Maginal had Maghal was killed in a cord and search operation conducted by the Army's 02 Assam Rifles, 24 Rashtriya Rifles, CRPF's 49 battalion, and the J&K Police, Ganderalh.

INS Aridhman, nuclear-powered
submarine, enters India's naval fleet

Rajnath Bhattachajee
VISAKHAPATNAM

Defence Minister Rajnath Singh presided over a brief ceremony to formally commission the country's third nuclear submarine, INS Aridhman (04), which is the third in the Aridhman class of SSBNs (submersible ballistic nuclear submarines) on Friday at Visakhapatnam.

The vessel, being part of the strategic weapons programme, falls under the domain of the Strategic Forces and is part of the country's nuclear triad. As per sources in the Navy, the commissioning was not made public and was carried out quietly, but Mr. Singh dropped enough hints to acknowledge the commissioning of the vessel. While the event was



The nuclear submarine INS Aridhman ahead of its commissioning ceremony in Visakhapatnam.

conducted by Mr. Singh's visit to Visakhapatnam for the commissioning of the stealth guided-missile frigate INS Taragiri. The closely guarded SSBN project, initially launched as the Advanced Technology Vessel (ATV) project, is being executed by the Ship Builders' Corporation of India (SBCI) at Visakhapatnam. The first vessel was launched in July 2009 and was quietly commissioned in 2016. The second indigenous SSBN, INS Arighat, was commissioned in August 2024. While Arighat and Arighat are smaller vessels of about 6,000 tonnes, Aridhman (04) and 04 are bigger vessels of about 7,000 tonnes. The 04 (which may be named Aridhant) is currently undergoing sea trials.

Compared to its predecessors, Aridhman and its successor 04 will have more firepower. India is already one of the nations, along with the U.S., Russia, China, and France, to possess a nuclear submarine. The capability, which means it has the ability to launch nuclear-tipped missiles from air, land, and sea.

Compliance eased for
managing plastic waste

Companies that fail to meet their targets can carry forward the shortfall for up to three years; they can also meet their obligations by purchasing credits from others that exceed their targets

Jacob Kishor
NEW DELHI

India's latest amendment to its Plastic Waste Management Rules leaves headline recycling targets unchanged, but introduces a series of provisions that allow companies to shift their compliance deadlines. These provisions include allowing companies that fail to meet their targets in 2025-26 to carry forward the shortfall for up to three years, provided they make up at least a third of the deficit annually. Prior to this, companies were bound to comply annually.



New rules require companies to collect and process the equivalent of 100% of the plastic they introduce into the market. A.S. GURU

The 2026 amendment retains a phased-out target for recycled content and sets a 30% recycled material requirement in plastic packaging, continuing the trajectory first introduced under the Extended Producer Responsibility (EPR) framework in 2022, which for the first time specified collection targets for plastic waste producers and users of plastic packaging. For 2025-26, producers and importers of rigid plastic packaging Category 1 contain at least 30% recycled material, rising to 60% by 2029-30. Flexible plastics Category 2 are subject to a 10% requirement in 2025-26, increasing to 30% thereafter, while multi-layered plastic for recycled content and set to rise to 10% in 2025-26, rising to 30% in 2029-30. In parallel, the rules mandate reuse obligations for rigid packaging.

flexibility and may reduce compliance costs, it also was less strict on recycling targets for plastic waste producers and users of plastic packaging. Targets also do not apply where other regulations or standards - restrict the use of recycled plastic. This could exclude significant segments of packaging from the mandate, particularly in the food and beverage sector. The 2026 amendment also formalises a phased-out target for recycled content and sets a 30% recycled material requirement in plastic packaging, continuing the trajectory first introduced under the Extended Producer Responsibility (EPR) framework in 2022, which for the first time specified collection targets for plastic waste producers and users of plastic packaging. For 2025-26, producers and importers of rigid plastic packaging Category 1 contain at least 30% recycled material, rising to 60% by 2029-30. Flexible plastics Category 2 are subject to a 10% requirement in 2025-26, increasing to 30% thereafter, while multi-layered plastic for recycled content and set to rise to 10% in 2025-26, rising to 30% in 2029-30. In parallel, the rules mandate reuse obligations for rigid packaging.

Rajasthan High Court
expunges remarks
on Transgender Act

Aarathi Bhamik
NEW DELHI

The Rajasthan High Court has modified its March 30 order to expunge certain portions criticising the transgender Persons (Protection of Rights) Amendment Act, 2026, in a clarificatory order issued on Thursday. The court said that its observations that the amendment diluted constitutional guarantees had been included "by mistake" and were "neither intended nor necessary".

The March 30 ruling on a petition filed by a transgender woman included an epilogue authored by Justice Aron Murgu, which observed that the new law, by curtailing the right to gender self-identification, departs from the "constitutional baseline" set by the Supreme Court's 2019 ruling in National Legal Services Authority v. Union of India. It noted that the amendment risked reducing what the top court had recognised as an "inviolable aspect of personhood" to a "contingent, state-enforced entitlement". The transgender Persons (Protection of Rights) Bill was passed in Parliament last week and became law with the signing ceremony on Monday. In its Thursday order, the High Court Bench ob-

served that certain portions had been inadvertently included in the epilogue of the earlier judgment and directed the deletion of paragraphs which stated that the rights of transgender persons must not be "rendered illusory by procedural constraints" and which criticised the amendment for making legal recognition of gender identity contingent upon "certification, scrutiny or other forms of administrative endorsement".

"Upon re-reading of the epilogue, it appears that by mistake the following text was included therein, although it was neither intended nor necessary," said the Bench, which included Justice Yogendra Kumar Purohit. However, the judge declined a request that the epilogue be excluded from the judgment or disregarded for precedential purposes. In the revised epilogue, the Bench retained its position that the right to self-identify one's gender is an "intrinsic facet of dignity, autonomy, and personal liberty under Articles 14, 15, 16 and 21" and "not a matter of right". It, however, added that the epilogue is to be treated as a "statement of facts in the process of a changing legal landscape".

The Hindu Group, SRMIST
to host deep tech summit

The Hindu Bureau
CHENNAI

The Hindu Group, in association with the SRM Institute of Science and Technology (SRMIST), will host the two-day Deep Tech Summit 2026 on April 6 and 7, bringing together policymakers, investors, and leaders of industry, academia, and start-ups, aimed at shaping the future of deep technology in the country. The first day will feature fringe chats with government leadership on India's deep tech vision and with IIT Madras Professor Anshok Bhargava on innovation ecosystems. Expert panels will discuss "The Future of Deep Tech in India: Navigating the Next Revolution" and "Bio-engineering Academic Research for Industrial Agility".

On day two, the highlights include a keynote address by the Minister of Electronics and Information Technology, and a panel discussion on "Aligning Academic Excellence with Industry Needs: The Role of Deep Tech in India's Growth". The summit will be held at the Four Seasons Hotel, Chennai on April 6 and 7. Participants, investors, start-ups, and innovation ecosystem leaders are invited to register at <https://www.fourseasons.com/india/deeptechsummit2026>. There will also be a master class by Parag Agarwal, CEO, UniversityTech, and workshops by IIT Madras Foundation for Cobotics, the technology innovation hub of IIT Madras, and the Credit Guarantee Scheme for Startups. Start-up pitch contests will also be held throughout the day on both days.

Bihar hooch
tragedy: toll
rises to five,
12 arrested

The Hindu Bureau
PATNA

The death toll in the unregulated hooch tragedy in Bihar rose to five on Friday as four more people died. Deputy Inspector-General of Police (Chhapra) Range, Rajesh Kishore Rai said, in all, 12 people have so far been arrested. Six people are undergoing treatment, while seven were discharged after initial treatment, the police said. Sources said several of those undergoing treatment have lost their eyesight. A Special Investigation Team has been formed to probe the incident. Tarkauliya Police Station Station House Officer Umashankar Maugh has been suspended.

THE CROSSWORD



- Across
1. Leading doctor's intellectual property (8 letters)
4. Quarter-finals always leads to a medical condition (3,3)
9. Heads from Gulf Union Free Trade Zone (4)

Solve this puzzle online and
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<https://www.thehindu.com/crossword>

- 12. Secret cult boss leader, English Prime's successor (10)
13. Type of pistol to ignore, returned to back-night priority (4,6)
14. Perform people to a dungeon as five (5)
16. A soft caduce found in Switzerland and Alaska by knight (1)

- 17. Warm, square, intense and highly successful (7)
18. Games for American children with five acts after final briefing (7)
19. Collision at Indian festival no good, cheap assembly (7)
24. Instead of a lot of the subject (10)
25. A little outfit, one made in the middle house (10)

SUDOKU

8 9 4 | | 2 | |
6 | | | | | | |
| 5 8 | | | 3 | |
| 8 | 7 | 6 5 2 | |
2 5 6 | 4 | 3 | |
5 | | | 3 9 | | |
9 | 6 | | | | 5

8 9 4 | | 2 | |
6 | | | | | | |
| 5 8 | | | 3 | |
| 8 | 7 | 6 5 2 | |
2 5 6 | 4 | 3 | |
5 | | | 3 9 | | |
9 | 6 | | | | 5

FAITH

Salvation within reach
Jesus' parable was in full public view. The State and the Temple priests decided to make an example of offenders of society, sometime on that day, it was decided that two thieves will be crucified along with Christ, whereby a message was being conveyed that Jesus was also a criminal. From the Cross, the thieves spoke to each other and to Jesus. Christ then ended the conversation, saying to one of them, "Verily, I say unto thee, thou shalt be with me in Paradise." Those near the Cross could hear the officials and the soldiers mocking Jesus Christ. One of the thieves joined them, taunting Jesus, saying, "If Thou be Christ, save Yourself and us." He believed that Jesus had to prove himself by getting down from the Cross and saving at least three of them. However, the other thief, realising that the thieves were facing the consequences of a sinful life, took steps to change his future. Turning his head, he said to Christ, "Lord, remember me when you come into Your kingdom." And Jesus said, "Today you shall be with me in Paradise." The thief received salvation by believing in Jesus and appealing for eternal life with Him.

INS Aridhaman, nuclear-powered submarine, enters India's naval fleet

Sumit Bhattacharjee

VISAKHAPATNAM

Defence Minister Rajnath Singh presided over a brief ceremony to formally commission the country's third nuclear submarine, *INS Aridhaman* (S4), which is the third in the Arihant-class of SSBNs (Submersible Ship Ballistic Nuclear), on Friday at Visakhapatnam.

The vessel, being part of the strategic weapons programme, falls under the domain of the Strategic Forces and is part of the country's nuclear triad. As per sources in the Navy, the commissioning was not made public and was carried out quietly, but Mr. Singh dropped enough hints to acknowledge the commissioning of the vessel.

While the event was



The nuclear submarine *INS Aridhaman* ahead of its commissioning ceremony in Visakhapatnam. PTI

kept under wraps, Defence Minister Rajnath Singh posted a cryptic message on X, describing the submarine as: "It's not words but power, 'Aridhaman'!"

Sources in the Navy said that the commissioning of *INS Aridhaman* was on the cards, as the submarine had already undergone extensive sea trials, and it

coincided with Mr. Singh's visit to Visakhapatnam for the commissioning of the stealth guided-missile frigate *INS Taragiri*.

The closely guarded SSBN project, initially launched as the Advanced Technology Vessel (ATV) project, is being executed by the Ship Building Centre (SBC) in Visakha-

patnam. The first vessel was launched in July 2009 and was quietly commissioned in 2016. The second indigenously built SSBN, *INS Arighaat*, was commissioned in August 2024.

While *Arihant* and *Arighaat* are smaller vessels of about 6,000 tonnes, *Aridhaman* (S4) and S4* are bigger vessels of about 7,000 tonnes. The S4* (which may be named *Arisudan*) is currently undergoing sea trials.

Compared to its predecessors, *Aridhaman* and its successor S4* will have more firepower.

India is already one of the nations, along with the U.S., Russia, China, and France, to possess a nuclear triad capability, which means it has the ability to launch nuclear-tipped missiles from air, land, and sea.

- **INS Aridhaman (S4)** — India's third nuclear-powered ballistic missile submarine (SSBN) — was **commissioned at Visakhapatnam** by Defence Minister Rajnath Singh.
- **INS अरिधमन (S4)** — भारत की तीसरी परमाणु-चालित बैलिस्टिक मिसाइल पनडुब्बी (SSBN) — रक्षा मंत्री राजनाथ सिंह द्वारा **विशाखापत्तनम में कमीशन** की गई।
- India now becomes one of **very few nations** (U.S., Russia, China, France) to possess a complete **Nuclear Triad** — ability to launch nuclear weapons from land, air, and sea.
- भारत अब **बहुत कम देशों** (अमेरिका, रूस, चीन, फ्रांस) में से एक बन गया जिनके पास पूर्ण **परमाणु त्रिशक्ति** — जमीन, हवा और समुद्र से परमाणु हथियार दागने की क्षमता।
- Aridhaman is **larger and more powerful** than its predecessors INS Arihant and INS Arighaat (~7,000 tonnes vs ~6,000 tonnes).
- अरिधमन अपने पूर्ववर्तियों INS अरिहंत और INS अरिघाट से **बड़ा और अधिक शक्तिशाली** है (~7,000 टन बनाम ~6,000 टन)।
- The commissioning was **kept quiet** — part of India's strategic weapons programme under the **Strategic Forces Command (SFC)**.
- कमीशनिंग **गुपचुप रखी गई** — **रणनीतिक बल कमान (SFC)** के तहत भारत के रणनीतिक हथियार कार्यक्रम का हिस्सा।
- Another SSBN, **S4* (likely named INS Arisudan)**, is currently undergoing sea trials — India's fourth SSBN is on the way.
- एक और SSBN, **S4* (संभवतः INS अरिसुदान नामित)**, वर्तमान में समुद्री परीक्षण कर रही है — भारत की चौथी SSBN आने वाली है।

D5. Why Important for India? / भारत के लिए क्यों महत्वपूर्ण?

- **Completes Nuclear Triad:** Land (Agni missiles) + Air (Rafale, Mirage with nuclear capability) + Sea (SSBN) — India's deterrence is now fully credible.
- **परमाणु त्रिशक्ति पूर्ण:** जमीन (अग्नि मिसाइलें) + हवा (राफेल, मिराज परमाणु क्षमता के साथ) + समुद्र (SSBN) — भारत का प्रतिरोध अब पूरी तरह विश्वसनीय।
- **Counters China's growing naval power** in the Indian Ocean — China's "String of Pearls" strategy surrounds India.
- **भारतीय महासागर में चीन की बढ़ती नौसैनिक शक्ति का मुकाबला** — चीन की "स्ट्रिंग ऑफ पलर्स" रणनीति भारत को घेरती है।
- **Second Strike Capability:** Even if India's land-based missiles are destroyed in a first strike, SSBNs ensure India can still retaliate.
- **द्वितीय प्रहार क्षमता:** यदि भारत की जमीन-आधारित मिसाइलें पहले हमले में नष्ट हो जाती हैं, SSBNs सुनिश्चित करती हैं कि भारत अभी भी जवाब दे सकता है।
- **Boosts Make in India in Defence:** Built at SBC, Visakhapatnam — showcases India's indigenous advanced nuclear submarine capability.
- **रक्षा में मेक इन इंडिया को बढ़ावा:** SBC, विशाखापत्तनम में निर्मित — भारत की स्वदेशी उन्नत परमाणु पनडुब्बी क्षमता को प्रदर्शित करता है।

- **INS Arihant (S2)** — 1st SSBN; launched 2009; commissioned 2016; ~6,000 tonnes.
- **INS अरिहंत (S2)** — पहली SSBN; 2009 में लॉन्च; 2016 में कमीशन; ~6,000 टन।
- **INS Arighaat (S3)** — 2nd SSBN; commissioned **August 2024**; ~6,000 tonnes.
- **INS अरिघाट (S3)** — दूसरी SSBN; **अगस्त 2024** में कमीशन; ~6,000 टन।
- **INS Aridhaman (S4)** — 3rd SSBN; ~7,000 tonnes; more firepower than predecessors.
- **INS अरिधमन (S4)** — तीसरी SSBN; ~7,000 टन; पूर्ववर्तियों से अधिक फायरपावर।
- **S4* (likely INS Arisudan)** — 4th SSBN; currently in sea trials; ~7,000 tonnes.
- **S4* (संभवतः INS अरिसुदान)** — चौथी SSBN; वर्तमान में समुद्री परीक्षण में; ~7,000 टन।

F1. Past Background / भूतकाल

- **1974 (Pokhran-I):** India's first nuclear test — demonstrated nuclear capability but not weaponised.
- **1974 (पोखरण-I):** भारत का पहला परमाणु परीक्षण — परमाणु क्षमता प्रदर्शित, लेकिन हथियारबद्ध नहीं।
- **1998 (Pokhran-II):** India declared itself a **nuclear weapon state** — weaponised nuclear programme.
- **1998 (पोखरण-II):** भारत ने स्वयं को **परमाणु हथियार राज्य** घोषित किया — हथियारबद्ध परमाणु कार्यक्रम।
- **1999:** India released its **Nuclear Doctrine** — NFU + Credible Minimum Deterrence.
- **1999:** भारत ने अपना **परमाणु सिद्धांत** जारी किया — NFU + विश्वसनीय न्यूनतम प्रतिरोध।
- **2003: Strategic Forces Command (SFC)** established to manage nuclear delivery systems.
- **2003: रणनीतिक बल कमान (SFC)** परमाणु डिलीवरी सिस्टम प्रबंधित करने के लिए स्थापित।
- **2009:** INS Arihant launched — ATV project bears fruit.
- **2009:** INS अरिहंत लॉन्च — ATV परियोजना फलीभूत।
- **2016:** INS Arihant commissioned quietly.
- **2016:** INS अरिहंत चुपचाप कमीशन।
- **August 2024:** INS Arighaat (S3) commissioned.
- **अगस्त 2024:** INS अरिघाट (S3) कमीशन।

Q. Consider the following statements about India's nuclear submarine programme: भारत के परमाणु पनडुब्बी कार्यक्रम के बारे में निम्नलिखित कथनों पर विचार करें:

1. INS Arihant was India's first indigenously built nuclear-powered submarine, commissioned in 2016. INS अरिहंत 2016 में कमीशन की गई भारत की पहली स्वदेश निर्मित परमाणु-चालित पनडुब्बी थी।
2. INS Aridhaman (S4) is heavier than INS Arihant and INS Arighaat at approximately 7,000 tonnes. INS अरिधमन (S4) लगभग 7,000 टन पर INS अरिहंत और INS अरिघाट से भारी है।
3. The SSBN programme is executed by the Mazagon Dock Shipbuilders in Mumbai. SSBN कार्यक्रम मुंबई में मझगांव डॉक शिपबिल्डर्स द्वारा क्रियान्वित किया जाता है।
4. India's nuclear triad consists of land-based ballistic missiles, aircraft-delivered bombs, and submarine-launched ballistic missiles. भारत की परमाणु त्रिशक्ति में जमीन-आधारित बैलिस्टिक मिसाइलें, विमान-वितरित बम और पनडुब्बी-प्रक्षेपित बैलिस्टिक मिसाइलें शामिल हैं।

Options:

- (a) 1, 2 and 4 only / केवल 1, 2 और 4
- (b) 1 and 3 only / केवल 1 और 3
- (c) 2, 3 and 4 only / केवल 2, 3 और 4
- (d) 1, 2, 3 and 4 / 1, 2, 3 और 4 सभी

• THE THREE ARIHANT-CLASS SUBMARINES

INS Arihant

Commissioned: **2016**

Firepower: **K-15 Sagarika missiles**, over 700-km range

Vertical launch tubes: **Four**

Displacement: **6,000 tonnes**

Powered by: **83 MW** pressurised light-water nuclear reactors

INS Arighaat

Commissioned: **2024**

Similar in terms of power, launch tubes and displacement but much more technologically advanced than the Arihant.

Believed to support K-4 missiles with 3,500 km range in addition to K-15s

Note: The specifications of Arihant-class submarines are classified. This sketch is an approximation. *Wikimedia Commons*

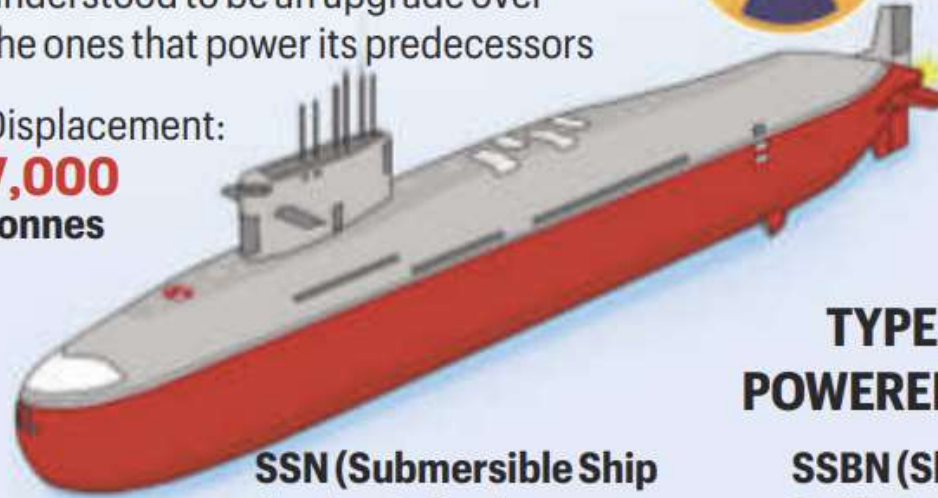
INS Aridaman

Commissioned: **2026**

Vertical launch tubes: Believed to be **eight**

More advanced reactors — understood to be an upgrade over the ones that power its predecessors

Displacement: **7,000 tonnes**



FIREPOWER*:
K-4 missiles
with
3,500 km
range

*in addition to the capability to carry more K-15 missiles

TYPES OF NUCLEAR-POWERED SUBMARINES

SSN (Submersible Ship Nuclear): Carries conventional weapons.

SSGN (Ship Submersible Guided Nuclear): Carries guided missiles with conventional warheads

SSBN (Ship Submersible Ballistic Nuclear): Capable of carrying ballistic missiles that may be nuclear armed. Typically the largest and most complex type.



The enter fields on a Series 222 investigation launched on May 1, 2010.

Patented drug tariffs: India more or less shielded

From Front of India

India is unlikely to be significantly impacted by U.S. President Barack Obama's announcement of 90% tariff cuts on certain patented drugs, as the country partly enjoys low-cost generic medicines to America, India Bank (IBR) said.

MS, Trade agreed an executive order on April 2, reducing the importation of a 20% ad valorem duty on the import of certain patented pharmaceuticals and associated plant-based ingredients.

The order builds on a Section 232 investigation launched on May 1, 2010, which cited national security risks from dependence on foreign drug exports.

The Global Trade Barometer (GTBI) said the move has led "to the largely protected, low-cost generic drug exports to the U.S." In 2010, India exported \$0.7 billion (0.04% of total exports) to the U.S.

MSMEs 'reluctant' to switch over to piped natural gas supplies

Industry officials point to deficiency in PNG supply pose war between and also infrastructure insufficiencies for hesitation to switch fuels

M. Sankaranarayanan

The MSME, Small and Medium Scale Enterprises (MSMEs) in the manufacturing sector have expressed fears about switching over to Piped Natural Gas (PNG) from conventional LPG cylinders.

The MSMEs are located in multiple clusters across the country and some of the States have PNG for these clusters for decades.

Madhulika, who runs a small MSME in Andhra Pradesh, said she is reluctant to switch over to PNG as they will have to spend on infrastructure.

"No supply guarantee" "Yes, there is 20% to 30% reduction in supply because of the gas supply they are getting in Chennai, but other in the guarantee on the consistency of supply for the MSMEs."

The capital value of PNG is a lot lower than LPG, so industries opting for PNG should have the technical knowledge and the gas supply they are getting in Chennai, he adds.

And Shankar, secretary general of the Federation of MSMEs, said the MSMEs were unhappy with the government's decision adding additional LPG cylinder customers to



MSMEs: The capital value of PNG is a lot lower than LPG, according to officials of some MSMEs. A. Sankaranarayanan

Many MSMEs shift into different sites and need cylinders for the duration.

Some MSMEs small industries in Andhra Pradesh, said it will not be economically viable for them to switch over to PNG as they will have to spend on infrastructure.

MSMEs: The capital value of PNG is a lot lower than LPG, according to officials of some MSMEs. A. Sankaranarayanan

And Shankar, secretary general of the Federation of MSMEs, said the MSMEs were unhappy with the government's decision adding additional LPG cylinder customers to

register for PNG to get the additional LPG supply.

Lack infrastructure "Not all areas of an industrial city have PNG infrastructure and when it is done it will take time."

The concept might be good and the industries may be willing, but do we have the infrastructure to do it in a hurry, how do we ensure safety standards?" he asks.

MSMEs: The capital value of PNG is a lot lower than LPG, according to officials of some MSMEs. A. Sankaranarayanan

European airlines race for Asia's direct traffic

IN BRIEF

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RBI okays Emirates NBD Bank buying up to 74% RBI stake

The Reserve Bank of India (RBI) has approved approval to Dubai-based Emirates NBD Bank to acquire up to a 74% stake in RBI, India, paving the way for the bank to become a foreign lender.

The approval from RBI came on April 3 with one year validity, RBI bank said. The deal follows Emirates NBD bank expressing interest in 2010 to buy 60% stake in RBI, Bank for 74% stake.

Jan Vishwas: govt. for minor offence case withdrawal

The Commerce and Industry Ministry want all the departments to consider withdrawing pending cases involving minor offences in light of Jan Vishwas amendment bill, as it would significantly reduce load on the judiciary and promote ease of doing business, a top official said.

Parliament on Thursday passed the Jan Vishwas (Amendment of Provisions) Bill, 2010.

HZL's output of mined metal, refined metal rises in Q4

Volvo group from HZL has reported an increase in the production of mined metal and refined metal, but a slight decrease in silver production, in the fourth quarter of 2010. HZL's annual production increased by 2% to 3,25,000 tons and its refined metal output rose by 5% to 2,82,000 tons in the January-March quarter of 2010, according to the company.

West Asia: govt. eyes boost to induction heater output

The Centre held discussions on steps to encourage direct output of induction heaters and comparable standard rating demand for the products on concerns over supply availability following the West Asia action, an official said.

The crisis disrupted the movement of ships carrying oil and gas via Strait of Hormuz, raising concern over cooling gas supplies and prompting people to buy induction heaters.

Ship carrying Iranian crude heading to India changes course to China

M. Kulkarni

Ship Shana, a Chinese oil tanker carrying Iranian crude oil, that had crossed the Strait of Hormuz and signalling that it was heading to Vietnam, India, for the past three days is now signalling it was heading to China, according to marine logistics and commodity markets analysis company IHS.

The vessel, carrying more than one lakh tonnes of crude oil, is signalling that it is heading to Dongying in northern China, according to ship tracking software. As of now, Ship Shana is heading south of the west coast of India.

Sanctioned by U.S. Ship Shana was sanctioned by the U.S. in February of the month. The vessel's notice says that the ship was involved in three crude



A shipment of Ship Shana is being managed by companies based in Shanghai, China. A. Sankaranarayanan

oil through ship-to-ship transfers with the United National Iranian Tanker Company with the motive of circumventing the U.S. ban on Iranian crude.

The tanker has delivered several shipments to China. All the U.S. had through a "general licence" that Ship Shana is owned and managed by the United National Iranian Tanker Company with the motive of circumventing the U.S. ban on Iranian crude.

Ship Shana is heading south of the west coast of India.

PNB officers' union flags mass scale IV transfers

From Front of India

PNB officers union has written to the bank's managing director to request the transfer of 1000 or more of Scale IV officers and above, with their respective information would report preparation of the letter, as a result to 300 and CEO Anand Chandra, All India National Bank Officers' Association and 1,000 Scale IV officers have given transfer request, creating huge disruption.

Care-giving firms eye therapy market for development delays

Lakshmi Mishra

World Autism Day held on 2 April highlighted growing need for autism therapy, which is being used to seek professional support for children with autism. Developmental disorders (DD) are a group of neurobiological conditions that affect a child's ability to communicate and interact with others.

According to a report by leading agency Carebridge, the Autism Spectrum Disorder (ASD) therapy market size in India is expected to expand to around \$1.2 billion by 2015, growing at a CAGR of 20% during the 2010-15 period from 1,128 crore to 1,282 crore.

Development delay is defined as autism, speech disorder, slower functioning than peers, which is being used to seek professional support for children with autism. Developmental disorders (DD) are a group of neurobiological conditions that affect a child's ability to communicate and interact with others.

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'Mounjaro brides': weight loss jobs are part of pre-wedding preparation

For adults classified as obese, or for those overweight, direct intervention with a weight-related medical condition such as diabetes, hypertension or sleep apnea.

"Mounjaro has been approved by regulators for specific medical conditions, hypertension or sleep apnea."

The lowest Mounjaro injection per dose sells for \$1,200 (Rs.1,80,000) per month in India, while the highest dose costs \$1,700.

Now, which this week saw a surge in weight loss drugs, but asked not to use their brand by Indian state to social stigma. They cited societal pressure to look a "certain way" at their wedding and men had discontinued the injections soon after.

Now and Lily launched obesity drug in India last year. The market is expected to reach 200 billion (Rs.30,000 crore) by 2010.

The Latest. With local drugmakers flooding the market with cheaper weight-loss medications, India's drug regulatory authorities began setting cheaper versions of the market's top-selling drug in a bid to curb its use as a quick fix, said the South Pradesh, founder of health care consulting firm HealthCare Clinic Live Light.

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Care-giving firms eye therapy market for development delays

Lalatendu Mishra

MUMBAI

World Autism Day held on 2 April highlighted growing awareness, which is driving families to seek professional support for children with neuro developmental disorders (NDDs) from 'for-profit enterprises'.

For-profit social enterprises such Rays of Belief Ltd. which operates under the brand name Mom's Belief, are emerging as key players in this space by offering personalised intervention programmes based on a child's develop-

mental profile and the severity of the condition.

Development delay is defined as autism, speech disorder, slower functioning of brain and body, slow to learn language or communication problem Down's Syndrome, Cerebral Palsy etc.

According to a report by rating agency CareEdge, the Autism Spectrum Disorder (ASD) therapy market size in India is expected to expand to around ₹1,893.2 crore by CY34, growing at a CAGR 6.28% during the CY25-34 period from ₹1,029 crore in CY25.

India's developmental delays therapy market is projected to reach ₹612.3 crore by CY34, growing at a CAGR of 10.99% between CY25 and CY34.

NDD market comprises Attention Deficit Hyperactivity Disorder (ADSD) constituting 33% of the whole pie; Autism Spectrum Disorder (ASD) 21%; Cerebral Palsy 18%; Communication Disorders 12%; Specific Learning Disorder 6%; Developmental Delay 5%; Speech Disorder 3%; Intellectual Disorder 2%; Down's Disorder and Motor Disorder among others.

- **World Autism Day** was observed on **2 April** — highlighted rising awareness about neurodevelopmental disorders (NDDs) in India.
- **विश्व ऑटिज्म दिवस 2 अप्रैल** को मनाया गया — भारत में न्यूरोडेवलपमेंटल विकारों (NDD) के बारे में बढ़ती जागरूकता को उजागर किया।
- India's **ASD (Autism Spectrum Disorder) therapy market** is projected to grow from ₹1,029 crore (CY25) to ₹1,893.2 crore (CY34) at a **CAGR of 6.28%**.
- भारत का **ASD थेरेपी बाजार** ₹1,029 करोड़ (CY25) से ₹1,893.2 करोड़ (CY34) तक **6.28% CAGR** से बढ़ने का अनुमान।
- India's overall **developmental delays therapy market** is expected to reach **₹612.3 crore by CY34** growing at **10.99% CAGR**.
- भारत का समग्र **विकास देरी थेरेपी बाजार** CY34 तक **₹612.3 करोड़** तक **10.99% CAGR** से बढ़ने की उम्मीद।
- **For-profit social enterprises** like **Rays of Belief Ltd. (brand: Mom's Belief)** are emerging as key players offering **personalised intervention programmes**.
- **फॉर-प्रॉफिट सामाजिक उद्यम** जैसे **Rays of Belief Ltd. (ब्रांड: Mom's Belief)** व्यक्तिगत हस्तक्षेप कार्यक्रम पेश करने वाले प्रमुख खिलाड़ी के रूप में उभर रहे हैं।
- **ADHD** constitutes the largest share (33%) of India's NDD market, followed by ASD (21%) and Cerebral Palsy (18%).
- **ADHD** भारत के NDD बाजार में सबसे बड़ी हिस्सेदारी (33%) है, इसके बाद ASD (21%) और सेरेब्रल पाल्सी (18%)।

- **Neurodevelopmental Disorders (NDDs)** are conditions where a child's brain development is affected — the child may have difficulty learning, speaking, moving, or socialising compared to others of the same age.
- **न्यूरोडेवलपमेंटल विकार (NDD)** वे स्थितियाँ हैं जहाँ बच्चे के मस्तिष्क का विकास प्रभावित होता है — बच्चे को सीखने, बोलने, चलने या उसी उम्र के अन्य बच्चों की तुलना में सामाजिक मेलजोल में कठिनाई हो सकती है।
- These disorders include **Autism, ADHD, Cerebral Palsy, Down's Syndrome, Speech Disorders, Learning Disorders** etc. — they are lifelong but can be managed with early therapy.
- इन विकारों में **ऑटिज्म, ADHD, सेरेब्रल पाल्सी, डाउन सिंड्रोम, वाक् विकार, अधिगम विकार** आदि शामिल हैं — ये आजीवन हैं लेकिन शुरुआती थेरेपी से प्रबंधित किए जा सकते हैं।
- In India, awareness about these conditions is growing — families are now seeking **professional therapy** instead of ignoring or hiding the child's condition.
- भारत में इन स्थितियों के बारे में जागरूकता बढ़ रही है — परिवार अब बच्चे की स्थिति को नजरअंदाज करने या छुपाने के बजाय **पेशेवर थेरेपी** की तलाश कर रहे हैं।
- This growing demand has attracted **for-profit companies** to enter the therapy space — raising questions about **quality, affordability, and equity** of care.
- इस बढ़ती माँग ने **फॉर-प्रॉफिट कंपनियों** को थेरेपी क्षेत्र में प्रवेश करने के लिए आकर्षित किया है — देखभाल की **गुणवत्ता, सामर्थ्य और समानता** पर प्रश्न उठाते हुए।

- India has **one of the largest NDD populations** in the world — estimated **1-2% of India's child population** may have autism alone (India has ~450 million children).
- भारत में विश्व की **सबसे बड़ी NDD आबादी** में से एक है — अनुमानित **भारत की बाल आबादी का 1-2%** अकेले ऑटिज्म से पीड़ित हो सकते हैं (भारत में ~45 करोड़ बच्चे)।
- India's **public mental health and rehabilitation infrastructure is severely inadequate** — very few government-run therapy centres, shortage of trained therapists (speech, occupational, behavioural).
- भारत की **सार्वजनिक मानसिक स्वास्थ्य और पुनर्वास अवसंरचना अत्यधिक अपर्याप्त है** — बहुत कम सरकारी थेरेपी केंद्र, प्रशिक्षित चिकित्सकों (वाक्, व्यावसायिक, व्यवहारात्मक) की कमी।
- **Social stigma** around NDDs remains high in India — families often delay seeking help or hide the condition.
- भारत में NDD के आसपास **सामाजिक कलंक** अभी भी अधिक है — परिवार अक्सर मदद लेने में देरी करते हैं या स्थिति छुपाते हैं।
- **Early intervention** (before age 5) is critical for better developmental outcomes — delay in diagnosis = worse lifelong outcomes.
- **प्रारंभिक हस्तक्षेप** (5 वर्ष से पहले) बेहतर विकासात्मक परिणामों के लिए महत्वपूर्ण — निदान में देरी = जीवन भर खराब परिणाम।

D5. Why Important for India? / भारत के लिए क्यों महत्वपूर्ण?

- **Social Justice and Inclusion:** NDDs affect millions of children — ensuring their right to therapy, education, and dignity is a Constitutional obligation (Articles 21, 21A, 41, 46).
- **सामाजिक न्याय और समावेश:** NDD लाखों बच्चों को प्रभावित करते हैं — थेरेपी, शिक्षा और सम्मान का उनका अधिकार सुनिश्चित करना संवैधानिक दायित्व (अनुच्छेद 21, 21A, 41, 46)।
- **Human Capital Loss:** Untreated NDDs reduce productivity and economic participation — India's demographic dividend is wasted if NDD children are not supported.
- **मानव पूंजी हानि:** अनुपचारित NDD उत्पादकता और आर्थिक भागीदारी कम करते हैं — भारत का जनसांख्यिकीय लाभ बर्बाद होता है यदि NDD बच्चों का समर्थन नहीं किया जाता।
- **Regulatory Gap:** For-profit entry in therapy sector raises concerns about **quality standards, ethical practice, and fraud** — need for government oversight.
- **नियामक अंतर:** थेरेपी क्षेत्र में फॉर-प्रॉफिट प्रवेश गुणवत्ता मानकों, नैतिक अभ्यास और धोखाधड़ी पर चिंता उठाता है — सरकारी निगरानी की जरूरत।
- **SDG Linkage:** SDG 3 (Good Health), SDG 4 (Quality Education), SDG 10 (Reduced Inequalities) — NDD therapy access is linked to multiple SDGs.
- **SDG संबंध:** SDG 3 (अच्छा स्वास्थ्य), SDG 4 (गुणवत्तापूर्ण शिक्षा), SDG 10 (असमानताओं में कमी) — NDD थेरेपी पहुँच कई SDGs से जुड़ी।

- **Article 21:** Right to Life with Dignity — includes right to healthcare and therapy for disabled children.
- **अनुच्छेद 21:** गरिमा के साथ जीवन का अधिकार — विकलांग बच्चों के लिए स्वास्थ्य देखभाल और थेरेपी का अधिकार शामिल।
- **Article 21A:** Right to Education (6-14 years) — includes children with special needs under **RTE Act 2009**.
- **अनुच्छेद 21A:** शिक्षा का अधिकार (6-14 वर्ष) — **RTE अधिनियम 2009** के तहत विशेष जरूरतों वाले बच्चे शामिल।
- **RPWD Act 2016:** 21 disabilities recognised; 5% reservation in higher education; 4% in government jobs; benchmark disability = 40% or more.
- **RPWD अधिनियम 2016:** 21 विकलांगताएं मान्यता प्राप्त; उच्च शिक्षा में 5% आरक्षण; सरकारी नौकरियों में 4%; बेंचमार्क विकलांगता = 40% या अधिक।
- **National Trust Act 1999:** Provides for welfare of persons with Autism, Cerebral Palsy, Mental Retardation (now Intellectual Disability), and Multiple Disabilities.
- **राष्ट्रीय न्यास अधिनियम 1999:** ऑटिज्म, सेरेब्रल पाल्सी, मानसिक मंदता (अब बौद्धिक विकलांगता) और बहु-विकलांगता वाले व्यक्तियों के कल्याण का प्रावधान।
- **UN Convention on Rights of Persons with Disabilities (UNCRPD):** India ratified in 2007 — obligates India to provide equal access to healthcare and education for disabled.
- **विकलांग व्यक्तियों के अधिकारों पर UN सम्मेलन (UNCRPD):** भारत ने 2007 में अनुसमर्थन किया — भारत को विकलांगों के लिए स्वास्थ्य देखभाल और शिक्षा तक समान पहुँच प्रदान करने के लिए बाध्य करता है।

NDD Market Composition / NDD बाजार संरचना

Disorder / विकार	Market Share / बाजार हिस्सेदारी
ADHD	33%
ASD (Autism)	21%
Cerebral Palsy	18%
Communication Disorders	12%
Specific Learning Disorder	6%
Developmental Delay	5%
Speech Disorder	3%
Intellectual Disorder	2%
Down's & Motor Disorders	Others

BEIJING

Peace talks between Afghanistan, Pakistan are advancing, says China



Peace talks between Afghanistan's Taliban regime and Pakistan are advancing, China's government said on Friday. "The situation is being steadily implemented and advanced," said China's Foreign Ministry spokesperson Mao Ning. Xi Jinping's government is mediating between Islamabad and Kabul. AFP

Ukraine

Ukraine says 10 killed in 'massive' Russian missile and drone attacks



Ukraine on Friday faced nearly 500 Russian missile and drone attacks that killed at least 10 persons, officials said, the latest in an increasing number of daytime strikes by Moscow. President Volodymyr Zelenskyy and Prime Minister Yulia Tymoshenko were ready for a truce over the Easter holidays but the Kremlin said it had not received any proposals. AFP

PESHAWAR

Suicide car bomb blast targeting police station kills five in Pakistan



A suicide car bomb blast targeting a police station in northwestern Pakistan killed five persons, including four from the same family and wounded 13 others late Thursday, police said on Friday. Police said the suicide bomber rammed his explosives-laden vehicle into the rear side of the police station in Peshawar. AFP

UNITED NATIONS

UNSC delays vote on authorising force to protect Strait of Hormuz



The UN Security Council has postponed a vote scheduled for Friday on authorising the use of "robust" force to protect shipping in the Strait of Hormuz from Iranian attacks, according to the official programme. The 15-member body was set to vote on Friday morning. No new date has been given for voting on the draft. AFP

One rescued after U.S. fighter jet shot down in Iran

This is the first known loss of a U.S. jet inside Iran since Trump ordered the war; Iranian attacks reportedly damage a Kuwaiti oil refinery and a desalination plant, while an intercepted missile causes a gas field fire in the UAE; UK, deploys counter-drone system to Kuwait as Starmac calls the violence 'reckless'; ex-Iranian Foreign Minister Zarif proposes a deal to end conflict in an American magazine

Associated Press

AGENCE FRANCE-PRESS

DUBAI/TEHRAN

A U.S. fighter jet was shot down in Iran on Friday and one crew member was rescued, officials said. The first aircraft shot down inside Iran since the war began nearly five weeks ago, it marked a major escalation in the conflict just two days after U.S. President Donald Trump said in a national address that the U.S. has "broken and completely decimated Iran" and was "going to finish the job, and were going to finish it very fast."

been under way. All spoke on condition of anonymity to discuss the sensitivity of the situation.

The U.S. Central Command in the West Asia, did not respond to requests for comment following what would be the first known loss of a U.S. jet inside Iran since Mr. Trump ordered the war. However, in an email obtained by AP, U.S. military says the American aircraft was "shot down" and White House Press Secretary Kayleigh McEnany said: "The President has been briefed."

Iranian state media said that Iran's military shot the American jet that was carrying a two-person crew consisting of a pilot and weapons



Escalating tensions: A U.S. Air Force F-15E Strike Eagle aircraft takes off for a mission supporting Operation Epic Fury during the Iran war, a view of the 91 bridge, a day after it was destroyed by a strike in Karaj, around 95 km southwest of Tehran, on Friday. AFP

system officer. "Prior to word of the rescue, a local media broadcast a message from provincial police urging the villagers to join the military fight on the channel," the report on the capture of the aircraft that may have gone down in the province.

The captured jet that was shot down in the province of Kohgiluyeh and Boyer-Ahmad province, if

you capture the enemy pilot or pilots after and hand them over to the police and military forces, you will receive a valuable reward and bonus," said a reporter on the channel.



Iranian attack caused 'material damage' to a desalination plant. Such plants are responsible for most of the drinking water for Gulf states. Sirens also sounded in Bahrain as Saudi Arabia said it had destroyed several Iranian drones, and fighters were working to control several bases. AFP

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Kuwait also said that an

Arab Emirates shut down a gas field after a missile interception reportedly rained debris on it and started a fire. One person was killed and four others wounded in the fire, the government media office said.

Activists reported strikes around Tehran and the central city of Isfahan, but it wasn't immediately clear what was hit. A day earlier, Iran said the U.S. hit a major bridge, which was still under construction, killing eight persons.

"Attacks on health" The World Health Organization warned about "multiple attacks on health" in Bahrain in recent days, while saying tribute to the Bahraini institute in the capital which was destroyed in an air strike.

Meanwhile, the U.K. deployed a counter-drone system known as Rapid Sentry to Kuwait, as British Prime Minister Keir Starmer condemned a "reckless" overnight drone attack on the Kuwaiti oil refinery. "Former Iranian Foreign Minister Mohammad Javad Zarif wrote on Friday that the issue has come to end the suffering. "Prolonged hostility will cause a greater loss of precious lives and irreplaceable resources without actually altering the existing stalemate," Mr. Zarif wrote in Foreign Affairs magazine.

Iran "should offer to place limits on its nuclear program and to reopen the Strait of Hormuz in exchange for an end to all sanctions... a deal Washington wouldn't take before but might accept now," he wrote.

American strikes on Iran may amount to war crimes: experts

REUTERS

WASHINGTON

Dozens of international law experts in the U.S. have signed an open letter saying that American strikes on Iran may amount to war crimes.

Mr. Trump, who has previously offered shifting timelines and objectives for the war, said in a televised speech on Wednesday that the war could escalate if Iran did not give in to Washington's terms with strikes on its power and desalination plants possible.

and the University of California, said in the letter released on Thursday that the conduct of U.S. forces and statements by senior U.S. officials "raise serious concerns about violations of international human rights law and international humanitarian law, including potential war crimes."

The letter particularly noted a mid-March comment from Mr. Trump where he said the U.S. may conduct strikes on Iran "just for fun". It also cited comments from Pentagon chief Pete Hegseth from early March in which he said the U.S. does not fight with "suicidal rules of engagement".

Min Aung Hlaing elected Myanmar President; to be sworn in next week

AGENCE FRANCE-PRESS

NAUPYIDAW

Myanmar's pro-military lawmakers elected junta chief Min Aung Hlaing as President on Friday, with the ex-armed forces commander set to maintain his rule in a civilian guise after snatching power by force five years ago.

The coup-leading general ousted the elected government of Aung San Suu Kyi in 2021, triggering a civil war that has killed tens of thousands of people. Parliament speaker Aung Mye Thaw announced Min Aung Hlaing was elected President, chosen by military-aligned MPs installed in a recent election overseen by the junta he leads.

While the junta ousted Parliament's reopening last month as a return of power to the people, analysts describe it as civilian rule in a civilian guise after snatching the military's continuing rule. "There is no hope for the country under his presidency. The country will only get worse," said a 50-year-old Yangon resident, who spoke on condition of anonymity.



Min Aung Hlaing secured 479 of 584 votes cast in the upper and lower houses of Parliament in the capital Naypyidaw. AFP

Min Aung Hlaing secured 479 of 584 votes cast in the upper and lower houses of Parliament in the capital Naypyidaw on Friday, a parliament official said.

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Hegseth asked U.S. Army chief of staff George to step down

AGENCE FRANCE-PRESS

WASHINGTON

U.S. Secretary of War Pete Hegseth has asked General George to step down as chief of staff of the U.S. Army, an official said on Thursday. Gen. George is the latest senior military officer to be ousted during President Donald Trump's second term.



Gen. Randy George. AFP

Pentagon spokesperson Sean Parnell later posted a statement on X that said Gen. George "will be retiring from his position... effective immediately" without specifying a reason. "The reason for the request was not immediately known, but CBS quoted a source as saying Mr. Heg-

Beyond enrichment: mapping Iran's potential sprint to a nuclear bomb

NEWS ANALYSIS

Yasoudeyan Makhadmeh

Iran is expected to have around 800 kg of uranium enriched to 60%. U-235 in the uranium isotopes used in nuclear weapons. Enrichment is the process of increasing the quantity of U-235 in the uranium mass. The rest will be U-238, which is a less efficient fission material.

the ongoing war, the U.S. and Israel attacked Natanz and Isfahan - two cities known to host facilities central to Iran's nuclear programme. However, it is not clear how many centrifuges, the devices that enrich uranium, were destroyed. Details of damages to other equipment have also been scarce.

Once uranium is enriched to 90% uranium hexafluoride gas used during enrichment needs to be purified and turned into a metal. This is generally expected to take a few weeks, although more modern technologies are known to complete it in hours. Iran may already possess them, if it doesn't, setting them up could take a few months. Other equip-

ment include a cyclone separator, steel containers, and induction furnaces used to separate the metal in a "large clover".

The latter are the words of Theodore Postol, professor emeritus of science, technology, and international security at the Massachusetts Institute of Technology (MIT), as quoted in an interview on YouTube.

Ideally, personnel handle the uranium through security checkbooks and the facility will have high-grade gloves and scrubbers to reduce exposure to toxic substances.



Critical site: A satellite image taken last month shows the Natanz Nuclear Facility in Isfahan province, in central Iran. AFP

Iran is ready with the necessary equipment and processes, it could weaponise uranium "within weeks". To this end, again in ideal conditions, ICBG personnel will need 5000 machine tools, two-axis lathes, vacuum furnaces,

and isotopic presses. According to Postol, these and other requisite operations would be "doable in a quarter with just a few hundred of square metres of floor space".

The next step is to weaponise the uranium. While the IAEA has estimated this could take up to two years, Prof. Postol argued that if

clear warhead. It will just take more fissile material: around 40 kg has been shown to suffice for a weapon with a kilotonne yield.

Prof. Postol also said Iran could deliver the bomb without having to test it first if it uses the gun-type design. This comes with a caveat. This design uses a conventional explosive to blow two subcritical masses of uranium together within milliseconds.

Once the mass is supercritical, nuclear fission begins and proceeds at an increasing pace. However, the design is inefficient. According to the International Panel on Fissile Materials (IPFM), around 80-90 kg of 90% enriched uranium is required to achieve a yield of

around 20 kilotonnes (kt). Using the more efficient but more complex implosion-type design, where one "shell" of subcritical uranium collapses on another, for the same yield will require 15-18 kt.

Finally, Iran has to deliver the bomb. Research has found that figuring out how to maintain a bomb to fit on a missile could take years. Iran's Shahab-3 missile can carry a payload of up to 1,000 kg and travel more than 1,000 km. However, it's not known if Iran has successfully made a sufficiently small nuclear warhead with the missile.

Another possibility is for Iran to load the bomb on a ship and move it close to enemy territory.

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Associated Press
Agence France-Presse
DUBAI/TEHRAN

A U.S. fighter jet was shot down in Iran on Friday and one crew member was rescued, officials said, the first aircraft downed inside Iran since the war began nearly five weeks ago. It marked a major escalation in the conflict just two days after U.S. President Donald Trump said in a national address that the U.S. has "beaten and completely decimated Iran" and was "going to finish the job, and were going to finish it very fast".

The rescue occurred as the U.S. military was conducting a search operation, a U.S. official and an Israeli official said. Three people familiar also confirmed that a search had

been under way. All spoke on condition of anonymity to discuss the sensitivity of the situation.

The U.S. Central Command (CENTCOM), responsible for military operations in the West Asia, did not respond to requests for comment following what would be the first known loss of a U.S. jet inside Iran since Mr. Trump ordered the war. However, in an email obtained by AP, U.S. military says the American aircraft was 'shot down' and White House Press Secretary Karoline Leavitt said: "The President has been briefed".

Iranian state media said that Iran's military shot down a U.S. F-15E Strike Eagle. The aircraft is a variation of the Air Force fighter jet that carries a two-person crew consisting of a pilot and weapons



Escalating tensions: A U.S. Air Force F-15E Strike Eagle aircraft takes off for a mission supporting Operation Epic Fury during the Iran war; a view of the B1 bridge, a day after it was destroyed by a strike in Karaj, around 35 km southwest of Tehran, on Friday. REUTERS/AFP



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"Dear and honourable people of Kohgiluyeh and Boyer-Ahmad province, if

you capture the enemy pilot or pilots alive and hand them over to the police and military forces, you will receive a valuable reward and bonus," said a reporter on the channel.

Iran fired on targets on Friday across the West Asia, damaging a desalination plant and setting a refinery ablaze in Kuwait,

while American and Israeli air strikes hit the Islamic Republic as the war neared the end of its fifth week.

Kuwait's Mina al-Ahmedi oil refinery came under Iranian attack, and the state-run Kuwait Petroleum Corporation said firefighters were working to control several blazes.

Kuwait also said that an

Iranian attack caused "material damage" to a desalination plant. Such plants are responsible for most of the drinking water for Gulf states. Sirens also sounded in Bahrain as Saudi Arabia said it had destroyed several Iranian drones, and Israel reported incoming missiles.

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- A U.S. Air Force F-15E Strike Eagle was shot down inside Iran — the first U.S. aircraft lost inside Iran since the war began nearly five weeks ago; one crew member rescued.
- एक U.S. Air Force F-15E Strike Eagle को ईरान के अंदर मार गिराया गया — युद्ध शुरू होने के लगभग पाँच सप्ताह बाद ईरान के अंदर मार गिराया गया पहला अमेरिकी विमान; एक चालक दल का सदस्य बचाया गया।
- President Trump declared the U.S. has "**beaten and completely decimated Iran**" and would "**finish the job very fast**" — marking major escalation in war rhetoric.
- राष्ट्रपति ट्रंप ने घोषणा की कि अमेरिका ने "ईरान को हरा दिया और पूरी तरह तबाह कर दिया" और "बहुत जल्दी काम खत्म करेगा" — युद्ध की भाषा में बड़ी वृद्धि।
- **Iran attacked Gulf states:** Kuwait's Mina al-Ahmadi oil refinery set ablaze, a desalination plant damaged, UAE gas field fire after missile interception — threatening global energy and water security.
- **ईरान ने खाड़ी देशों पर हमला:** कुवैत की मीना अल-अहमदी तेल रिफाइनरी में आग, एक विलवणीकरण संयंत्र को नुकसान, UAE में मिसाइल अवरोधन के बाद गैस क्षेत्र में आग — वैश्विक ऊर्जा और जल सुरक्षा को खतरा।
- **UK deployed Rapid Sentry counter-drone system** to Kuwait; British PM Keir Starmer condemned the attacks as "**reckless**".
- **UK ने कुवैत में Rapid Sentry काउंटर-ड्रोन सिस्टम तैनात किया;** ब्रिटिश PM कीर स्टार्मर ने हमलों को "लापरवाह" बताया।
- Former Iranian FM **Mohammad Javad Zarif** proposed a deal — Iran limits nuclear programme and reopens Strait of Hormuz in exchange for lifting of all sanctions.
- पूर्व ईरानी विदेश मंत्री **मोहम्मद जावद ज़रीफ** ने एक सौदे का प्रस्ताव दिया — ईरान परमाणु कार्यक्रम सीमित करे और होर्मुज़ जलडमरूमध्य फिर से खोले, सभी प्रतिबंध हटाने के बदले।

Min Aung Hlaing elected Myanmar President; to be sworn in next week

Agence France-Presse

NAYPYIDAW

Myanmar's pro-military lawmakers elected junta chief Min Aung Hlaing as President on Friday, with the ex-armed forces commander set to maintain his rule in a civilian guise after snatching power by force five years ago.

The coup-leading general ousted the elected government of Aung San Suu Kyi in 2021, triggering a civil war that has killed tens of thousands of people. Parliament Speaker Aung Lin Dwe announced Min Aung Hlaing was elected President, chosen by military-aligned MPs installed in a recent election overseen by the junta he leads.



Min Aung Hlaing secured 429 of 584 votes cast in the upper and lower houses of Parliament in the capital Naypyidaw. AP

Min Aung Hlaing secured 429 of 584 votes cast in the upper and lower houses of Parliament in the capital Naypyidaw on Friday, a Parliament official said.

While the junta touted Parliament's reopening

last month as a return of power to the people, analysts describe it as civilian window dressing intended to launder the military's continuing rule.

"There is no hope for the country under his presidency. The country will

only get worse," said a 50-year-old Yangon resident, who spoke on condition of anonymity.

The pro-military Union Solidarity and Development Party (USDP) won more than 80% of parliamentary seats contested in the phased poll that concluded in January. Serving members of the armed forces also occupy unelected seats making up a quarter of the total.

Min Aung Hlaing is expected to be sworn in as President next week.

Myanmar's military has ruled the restive Southeast Asian nation for most of its post-independence history and presents itself as the only force guarding it from rupture and ruin.

History / इतिहास

- **1948:** Myanmar (then Burma) gained independence from Britain.
- **1948:** म्यांमार (तत्कालीन बर्मा) को ब्रिटेन से स्वतंत्रता मिली।
- **1962:** General Ne Win's coup — started decades of military rule; Burma renamed Myanmar.
- **1962:** जनरल ने विन का तख्तापलट — दशकों के सैन्य शासन की शुरुआत; बर्मा का नाम म्यांमार रखा।
- **1988:** Pro-democracy uprising (8888 Uprising) crushed by military; Aung San Suu Kyi emerged as pro-democracy leader.
- **1988:** लोकतंत्र समर्थक विद्रोह (8888 आंदोलन) सेना द्वारा कुचला; आंग सान सू की लोकतंत्र समर्थक नेता के रूप में उभरीं।
- **1991:** Aung San Suu Kyi awarded **Nobel Peace Prize** while under house arrest.
- **1991:** आंग सान सू की को नजरबंदी के दौरान **नोबेल शांति पुरस्कार** मिला।
- **2010-2015:** Myanmar's partial democratic transition under President Thein Sein — Suu Kyi released.
- **2010-2015:** राष्ट्रपति थीन सीन के तहत म्यांमार का आंशिक लोकतांत्रिक संक्रमण — सू की रिहा।
- **2015:** NLD won landslide elections; **2021:** Military coup reversed all progress.
- **2015:** NLD ने भूस्खलन जीत; **2021:** सैन्य तख्तापलट ने सारी प्रगति उलट दी।

- **Myanmar borders:** India (NW), China (N & NE), Laos (E), Thailand (SE), Bay of Bengal and Andaman Sea (SW & S).
- **म्यांमार की सीमाएं:** भारत (उत्तर-पश्चिम), चीन (उत्तर और उत्तर-पूर्व), लाओस (पूर्व), थाईलैंड (दक्षिण-पूर्व), बंगाल की खाड़ी और अंडमान सागर (दक्षिण-पश्चिम और दक्षिण)।
- **Capital: Naypyidaw** (built 2005-06 by military; replaced Yangon as capital).
- **राजधानी: नेपीडॉ** (2005-06 में सेना द्वारा बनाई; यांगून की जगह राजधानी)।
- **Largest city:** Yangon (formerly Rangoon).
- **सबसे बड़ा शहर:** यांगून (पूर्व में रंगून)।
- **Irrawaddy River:** Myanmar's lifeline — runs through the country north to south.
- **इरावदी नदी:** म्यांमार की जीवन रेखा — उत्तर से दक्षिण तक देश से होकर बहती है।
- **Rakhine State:** Region from which Rohingya Muslims fled genocide → Bangladesh refugee crisis.
- **राखाइन राज्य:** क्षेत्र जहाँ से रोहिंग्या मुसलमान नरसंहार से भागे → बांग्लादेश शरणार्थी संकट।
- **Golden Triangle:** Myanmar (Shan State) + Thailand + Laos — major opium/heroin production zone.
- **गोल्डन ट्रायंगल:** म्यांमार (शान राज्य) + थाईलैंड + लाओस — प्रमुख अफीम/हेरोइन उत्पादन क्षेत्र।

India's Key Projects in Myanmar / भारत की प्रमुख परियोजनाएं

Project / परियोजना	Description / विवरण	Status / स्थिति
Kaladan Multi-Modal	Kolkata-Sittwe-Mizoram / कोलकाता-सित्वे-मिजोरम	Stalled / ठहरी
India-Myanmar-Thailand Trilateral Highway	Delhi-Bangkok road / दिल्ली-बैंकॉक सड़क	Delayed / विलंबित
Sittwe Port Development	Myanmar's Rakhine port / राखाइन बंदरगाह	Operational but unstable / अस्थिर
IMTRAT	India-Myanmar Bilateral Army Training	Active / सक्रिय

India-Myanmar Border States / सीमावर्ती भारतीय राज्य

Indian State / भारतीय राज्य	Myanmar Region / म्यांमार क्षेत्र
Arunachal Pradesh	Kachin/Sagaing
Nagaland	Sagaing
Manipur	Sagaing/Chin
Mizoram	Chin State

Beyond enrichment: mapping Iran's potential sprint to a nuclear bomb

NEWS ANALYSIS

Vasudevan Mukunth

Iran is expected to have around 500 kg of uranium enriched to 60%. U-235 is the uranium isotope used in nuclear weapons. Enrichment is the process of increasing the quantity of U-235 in the uranium mass. The rest will be U-238, which is a less efficient fissile material.

A nuclear weapon needs uranium to be enriched to 90%.

The International Atomic Energy Agency (IAEA) has estimated Iran could produce 25 kg for one atom bomb in under 10 days.

Both in June 2025 and in

the ongoing war, the U.S. and Israel attacked Natanz and Isfahan – two cities known to host facilities central to Iran's nuclear programme. However, it is not clear how many centrifuges, the devices that enrich uranium, were destroyed. Details of damages to other equipment have also been muddled.

Once uranium is enriched to 90%, the uranium hexafluoride gas used during enrichment needs to be purified and turned into a metal. This is generally expected to take a few weeks, although more modern technologies are known to complete it in six hours. Iran may already possess them; if it doesn't, setting them up could take a few months. Other equip-

ment include a cyclone separator, steel containers, and induction furnaces plus a space the size of a "large closet".

The latter are the words of Theodore Postol, professor emeritus of science, technology, and international security at the Massachusetts Institute of Technology (MIT), as spoken in an interview on YouTube.

Ideally, personnel handle the uranium through secure gloveboxes, and the facility will have high-grade filters and scrubbers to reduce exposure to toxic substances.

The next step is to weaponise the uranium. While the IAEA has estimated this could take up to two years, Prof. Postol argued that if



Critical site: A satellite image taken last month shows the Natanz Nuclear Facility in Isfahan province, in central Iran. AFP

Iran is ready with the necessary equipment and processes, it could weaponise uranium "within weeks". To this end, again in ideal conditions, skilled personnel will need CNC machine tools, two-axis lathes, vacuum furnaces,

and isostatic presses. According to Prof. Postol, these and other requisite operations would be "doable in a tunnel with just a few hundreds of square metres of floor space".

If Iran has enough centrifuges to enrich 25 kg of

uranium from 60% to 90% in two weeks, has mastered weaponisation, and has pre-stashed the equipment, it could have a bomb in 3-5 weeks. But if Iran's position is like that of a new nuclear power, it could take more than a year.

Nuclear-capable state

Importantly, as Prof. Postol said, if Israel strikes Iran with a nuclear weapon, there is no difference between whether Iran responds in a matter of months or days. The point is that it's a nuclear-capable state and, given enough time, could wreak nuclear havoc in return.

Iran could also skip further enrichment and use it directly to build a nu-

clear warhead. It will just take more fissile material: around 40 kg has been shown to suffice for a weapon with a kilotonne yield.

Prof. Postol also said Iran could deliver the bomb without having to test it first if it uses the gun-type design. This comes with a caveat. This design uses a conventional explosive to blow two subcritical masses of uranium together within milliseconds. Once the mass is supercritical, nuclear fission begins and proceeds at an increasing pace.

However, the design is inefficient. According to the International Panel on Fissile Materials (IPFM), around 50-60 kg of 90% enriched uranium is required to achieve a yield of

around 20 kilotonnes (kt). Using the more efficient but more complex implosion-type design, where one 'shell' of subcritical uranium collapses on another, for the same yield will require 15-18 kg.

Finally, Iran has to deliver the bomb. Research has found that figuring out how to miniaturise a bomb to fit on a missile could take years. Iran's Shahab-3 missile can carry a payload of up to 1 tonne and travel more than 1,000 km. However, it's not known if Iran has successfully mated a sufficiently small nuclear warhead with the missile.

Another possibility is for Iran to load the bomb on a ship and move it close to enemy territory.

- Amid the ongoing U.S.-Israel war on Iran, the nuclear facilities at **Natanz and Isfahan** were attacked — raising urgent questions about Iran's remaining nuclear capability.
- चल रहे अमेरिका-इज़राइल-ईरान युद्ध के बीच नतांज और इस्फ़हान के परमाणु सुविधाओं पर हमले हुए — ईरान की शेष परमाणु क्षमता के बारे में तत्काल प्रश्न उठे।
- **IAEA (International Atomic Energy Agency)** estimated Iran could produce **25 kg of uranium for one atom bomb in under 10 days** — a critical timeline.
- **IAEA** ने अनुमान लगाया कि ईरान **10 दिनों से कम में एक परमाणु बम के लिए 25 kg यूरेनियम** उत्पादन कर सकता है।
- Iran already has **~500 kg of uranium enriched to 60%** — close to weapons-grade (90%); enrichment from 60% to 90% could take just **2 weeks**.
- ईरान के पास पहले से **~500 kg यूरेनियम 60% तक संवर्धित** — हथियार-ग्रेड (90%) के करीब; 60% से 90% तक संवर्धन में केवल **2 सप्ताह** लग सकते हैं।
- **Prof. Theodore Postol (MIT)** stated Iran is ready with equipment and processes to **weaponise uranium "within weeks"** if needed.
- **प्रो. थियोडोर पोस्टोल (MIT)** ने कहा ईरान यूरेनियम को **"हफ्तों में" हथियारबद्ध** करने के लिए उपकरण और प्रक्रियाओं के साथ तैयार है।
- The article analyses Iran's potential **"sprint to the bomb"** — technically detailed breakdown of steps from enriched uranium to deliverable nuclear weapon.
- लेख ईरान की संभावित **"बम की ओर दौड़"** का विश्लेषण करता है — संवर्धित यूरेनियम से डिलीवरी योग्य परमाणु हथियार तक के चरणों का विस्तृत विवरण।

- **Nuclear weapons require uranium enriched to 90%** (weapons-grade). Iran currently has uranium enriched to 60% — very close to weapons-grade.
- परमाणु हथियारों के लिए 90% तक संवर्धित यूरेनियम (हथियार-ग्रेड) चाहिए। ईरान के पास वर्तमान में 60% तक संवर्धित यूरेनियम है — हथियार-ग्रेड के बहुत करीब।
- Building a nuclear bomb has **three stages**: (1) Enriching uranium to 90%, (2) Weaponising it (turning it into bomb material), (3) Delivering it (putting it on a missile or ship).
- परमाणु बम बनाने के **तीन चरण** हैं: (1) यूरेनियम को 90% तक संवर्धित करना, (2) हथियारबद्ध करना (इसे बम सामग्री में बदलना), (3) डिलीवरी (मिसाइल या जहाज पर रखना)।
- Experts estimate Iran could potentially **complete all three stages within 3-5 weeks** given its current stockpile and pre-positioned equipment.
- विशेषज्ञों का अनुमान है कि ईरान अपने वर्तमान भंडार और पूर्व-स्थापित उपकरणों को देखते हुए संभावित रूप से **3-5 सप्ताह में तीनों चरण पूरे** कर सकता है।
- **Iran using a nuclear weapon** would mean it becomes a nuclear-armed state — completely reshaping the security architecture of the Middle East and beyond, affecting India too.
- ईरान द्वारा परमाणु हथियार का उपयोग का अर्थ होगा कि यह परमाणु-सशस्त्र राज्य बन जाता है — मध्य-पूर्व और उससे परे की सुरक्षा संरचना को पूरी तरह बदलते हुए, भारत को भी प्रभावित करते हुए।

- **"Breakout time"** — the time Iran needs to build a nuclear weapon — is **dangerously short**: 3-5 weeks if it has mastered weaponisation and pre-stashed equipment.
- **"ब्रेकआउट टाइम"** — ईरान को परमाणु हथियार बनाने में लगने वाला समय — **खतरनाक रूप से कम**: 3-5 सप्ताह यदि हथियारीकरण में महारत और उपकरण पूर्व-संग्रहित।
- **If Israel strikes Iran with nuclear weapon** — Prof. Postol says Iran would respond in **months or days** (not years) — nuclear war threat.
- यदि इज़राइल ईरान पर परमाणु हथियार से हमला करता है — प्रो. पोस्टोल का कहना है ईरान **महीनों या दिनों में** (वर्षों में नहीं) जवाब देगा।
- **Delivery problem remains**: Iran has Shahab-3 missile (1,000+ km range, 1 tonne payload) but **miniaturising a nuclear warhead** to fit on a missile could take years; not confirmed if Iran has achieved this.
- **डिलीवरी समस्या बनी**: ईरान के पास शहाब-3 मिसाइल है लेकिन मिसाइल पर फिट करने के लिए **परमाणु वारहेड को छोटा करना** वर्षों ले सकता है; अज्ञात कि ईरान ने यह हासिल किया।
- Alternatively, Iran could **load bomb on a ship** and move it close to enemy territory — "dirty" delivery option.
- वैकल्पिक रूप से, ईरान **जहाज पर बम लोड** कर दुश्मन के क्षेत्र के करीब ले जा सकता है।

- **Iran's nuclear programme history:** Started in 1950s under Shah; revived after 1979 revolution; reached advanced enrichment levels despite international sanctions and sabotage (Stuxnet virus, assassinations of nuclear scientists).
- **ईरान के परमाणु कार्यक्रम का इतिहास:** 1950 में शाह के तहत शुरू; 1979 क्रांति के बाद पुनरुज्जीवित; अंतर्राष्ट्रीय प्रतिबंधों और तोड़फोड़ (Stuxnet वायरस, परमाणु वैज्ञानिकों की हत्या) के बावजूद उन्नत संवर्धन स्तर।
- **2015 JCPOA:** Capped Iran's enrichment at 3.67%; after U.S. withdrawal (2018), Iran gradually exceeded all limits — reaching 60% enrichment.
- **2015 JCPOA:** ईरान के संवर्धन को 3.67% तक सीमित; अमेरिका के हाथ खींचने (2018) के बाद, ईरान ने सभी सीमाएं धीरे-धीरे पार कीं — 60% संवर्धन तक पहुँचा।
- **NPT (Non-Proliferation Treaty):** Iran is a signatory; obligated not to develop nuclear weapons; but kept advancing enrichment as a "civilian energy" programme.
- **NPT (परमाणु अप्रसार संधि):** ईरान हस्ताक्षरकर्ता; परमाणु हथियार न विकसित करने का दायित्व; लेकिन "नागरिक ऊर्जा" कार्यक्रम के रूप में संवर्धन आगे बढ़ाया।
- **Zarif's peace proposal** (from previous article): Iran limits nuclear programme + reopens Strait of Hormuz → all sanctions lifted — shows nuclear programme is Iran's primary bargaining chip.
- **ज़रीफ का शांति प्रस्ताव:** ईरान परमाणु कार्यक्रम सीमित करे + होर्मुज फिर खोले → प्रतिबंध हटें — परमाणु कार्यक्रम ईरान का प्राथमिक सौदेबाजी चिप।

History / इतिहास

- **Manhattan Project (1942-45):** World's first nuclear weapons programme by USA; led to Hiroshima and Nagasaki (August 1945) — first and only nuclear weapons used in war.
- **मैनहट्टन प्रोजेक्ट (1942-45):** अमेरिका द्वारा विश्व का पहला परमाणु हथियार कार्यक्रम; हिरोशिमा और नागासाकी (अगस्त 1945) — युद्ध में उपयोग किए गए पहले और एकमात्र परमाणु हथियार।
- **Atoms for Peace (1953):** Eisenhower's initiative — led to IAEA establishment and civilian nuclear energy programmes including Iran's.
- **Atoms for Peace (1953):** आइजनहावर की पहल — IAEA स्थापना और ईरान सहित नागरिक परमाणु ऊर्जा कार्यक्रमों की ओर ले गई।
- **1968 NPT:** Non-Proliferation Treaty — Iran signed; obligated not to develop nuclear weapons; IAEA inspections mandated.
- **1968 NPT:** परमाणु अप्रसार संधि — ईरान ने हस्ताक्षर किए; परमाणु हथियार न विकसित करने का दायित्व।
- **India's Nuclear Tests:** Pokhran-I (1974), Pokhran-II (1998) — India never signed NPT; has its own independent nuclear doctrine.
- **भारत के परमाणु परीक्षण:** पोखरण-I (1974), पोखरण-II (1998) — भारत ने NPT पर हस्ताक्षर नहीं किए।

Science & Tech / विज्ञान-प्रौद्योगिकी

- **U-235 vs U-238:** Natural uranium is mostly U-238 (not fissile) with ~0.7% U-235 (fissile). Enrichment increases U-235 percentage.
- **U-235 बनाम U-238:** प्राकृतिक यूरेनियम ज्यादातर U-238 (अविखंडनीय) है जिसमें ~0.7% U-235 (विखंडनीय)। संवर्धन U-235 प्रतिशत बढ़ाता है।
- **Enrichment levels:**
 - ~3-5% = civilian nuclear power
 - ~20% = medical isotopes / research reactors
 - **60% = Iran's current level** (no civilian use — weapons-related)
 - **90%+ = weapons-grade (HEU — Highly Enriched Uranium)**
- **संवर्धन स्तर:**
 - ~3-5% = नागरिक परमाणु ऊर्जा
 - ~20% = चिकित्सा आइसोटोप
 - **60% = ईरान का वर्तमान स्तर** (कोई नागरिक उपयोग नहीं — हथियार संबंधित)
 - **90%+ = हथियार-ग्रेड (HEU — अत्यधिक संवर्धित यूरेनियम)**
- **Centrifuge:** Spins uranium hexafluoride gas at high speed → separates lighter U-235 from heavier U-238 → enriches uranium.
- **सेंट्रीफ्यूज:** यूरेनियम हेक्साफ्लोराइड गैस को उच्च गति से घुमाता है → हल्के U-235 को भारी U-238 से अलग करता है → यूरेनियम संवर्धित करता है।
- **Gun-type vs Implosion design:**
 - **Gun-type:** Fire one subcritical uranium mass into another → supercritical → fission; simple design, needs ~50-60 kg HEU; ~20 kiloton yield.
 - **Implosion-type:** Conventional explosive collapses subcritical masses simultaneously → more efficient; needs only ~15-18 kg HEU; more complex.

Isro launches Mission MITRA for safety of spaceflight crew

INDIAN SPACE RESEARCH

Organisation (Isro) on Friday said it has undertaken Mission MITRA in Leh from April 2, a first-of-its-kind team behavioural study for the benefit of human spaceflight missions such as Gaganyaan.

The mission, inaugurated by Isro Chairman V Narayanan, was mainly for the crew safety and performance.

“Mission MITRA is a first-of-its-kind team behavioural study designed by Isro and IAF-Institute of Aerospace Medicine to examine the physiological, psychological, and operational dynamics of crew



The mission is a behavioural study of spaceflight crew as well as ground teams

and ground teams functioning in a high-altitude environment,” Isro said in a statement.

This study is targeted to

generate vital understanding on the team interoperability between crew (Gaganyatris) and ground control teams and the effectiveness of decision making under environmental and operational stress, the space agency said.

Noting that the crew safety and performance are the most critical elements of all human spaceflight missions, the space agency said the ability of the crew to communicate effectively, adapt to stress, maintain psychological resilience and support one another determines the success and safety of any mission. —PTI



Thank you 😊