LAKSHYA ACADEMY
Aim, Think & Achieve
www.lakshyaacademy.co I www.lakshyaiasacademy.com

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1878

Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

Monday,06 April, 2026

Edition : International Table of Contents

Add- 21/B, Om Swati Manor Chs, J.K. Sawant Marg, Opp. Shivaji Natyamandir, Behind Cambridge Showroom, Dadar (West) Mumbai – 400028
Con.- 09820971345, 9619071345, 9223209699
G-mail-lakshyaacademymumbai@gmail.com

Page 06 : GS II : International Relations / Prelims Exam

India and Bangladesh share a deep-rooted historical, cultural, and economic bond, sharing 54 transboundary rivers. However, the relationship faced a period of cooling following the political upheaval in August 2024. The visit of FM Khalilur Rahman signals a strategic pivot by the new BNP-led government to move past the "interim" phase and engage in substantive negotiations on long-standing issues like water sharing, visa normalization, and energy security.

Water sharing, visa likely on Bangladesh Minister's agenda

Foreign Minister Khalilur Rahman to visit India this week, say officials; newly elected BNP govt. indicates more willingness to negotiate water sharing treaty renewal, compared with interim govt.

Kallol Bhattacherjee
NEW DELHI

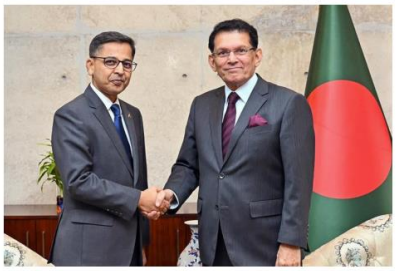
Sharing of river water, energy cooperation, normalisation of visa services, and war in West Asia are all expected to feature in bilateral talks with Bangladesh Foreign Minister Khalilur Rahman, who is expected to visit India this week, according to diplomatic sources.

This will be the first visit by a Bangladeshi Foreign Minister since the fall of Sheikh Hasina's government in Dhaka on August 5, 2024 pushed bilateral relations downhill.

The Bangladeshi Foreign Ministry held internal meetings on Sunday in preparation for the visit, which is likely to take place on April 7 and 8, sources said.

Ganga treaty

Indian officials said it is important to fast-track negotiations to renew the Ganga water treaty of 1996, noting that subcommittees constituted for this purpose did not make much progress during the 15-month tenure of Dhaka's interim government headed by chief adviser Muhammad Yunus. The newly elected government of Prime Minister Tarique Rahman, who was sworn in to office on February 17, has, however, indicated that it is willing to take the dialogue forward and conclude negotiations ahead of December 2026, the deadline for treaty renewal.



Bangladesh Foreign Minister Khalilur Rahman, right, with Indian High Commissioner Pranay Verma in Dhaka on February 22. ANI

Bangladesh Water resources Minister Shahid Uddin Choudhury Anee said on April 1 that the technical committee on the subject has started its work in Dhaka. Bangladeshi diplomatic sources have also hinted that, if necessary, temporary renewal of the treaty can be attempted before the two sides commit to a long-term renewal. It is understood that both New Delhi and Dhaka are walking a tightrope in view of the upcoming Assembly election in West Bengal, where the sharing of the waters of the Ganga could become a political issue.

Mr. Rahman's visit also indicates New Delhi's willingness to engage with an elected government in Dhaka. Mr. Rahman, who served as the National Security Adviser under Mr. Yunus, is one of the few officials of the interim government who managed to retain significant positions in the elected government of the Bangladesh Nationalist Party (BNP).

Given the delicate condition of bilateral relations, the Indian side has not yet announced the visit, and sources in Dhaka have described the visit as "transiting through Delhi" before Mr. Rahman proceeds to the Indian Ocean Conference in Mauritius that is being organised by the India Foundation, in association with the External Affairs Ministry and the government of Mauritius. Official sources, however, have indicated that during his stay in Delhi, Mr. Rahman will meet his counterpart, External Affairs Minister S. Jaishankar, and other senior officials, senior editors, and Delhi-based diplomats.

The war in West Asia and the resultant energy insecurity that has emerged as a major challenge for the Tarique Rahman government is one of the issues that is expected to feature prominently in talks as well.Bangladeshi diplomats have also highlighted the need to normalise the Indian visa process for Bangladeshi tourists and business people as a high priority for Dhaka.

Summary

The BNP's 2026 victory marks a major shift in Bangladesh's politics, reviving security concerns for India such as insurgency risks, minority safety, China's growing influence, and anti-India sentiment, while testing India's Neighbourhood First policy.

Despite challenges, deep economic, energy, and connectivity interdependence makes engagement essential, requiring India to adopt pragmatic diplomacy, strengthen people-to-people ties, and set clear security red lines to stabilise bilateral relations.

Key Pillars of the Discussion

1. The Ganga Water Treaty Renewal

The **1996 Ganga Water Sharing Treaty** is a 30-year agreement set to expire in **December 2026**.

The Challenge: Negotiations stalled during the 15-month tenure of the interim government.

The Shift: The Tarique Rahman government has shown greater urgency to finalize the renewal, potentially looking at a "temporary renewal" if a long-term pact requires more technical deliberation.

Domestic Constraints: Both nations face internal political pressure. In India, the upcoming West Bengal Assembly elections make water sharing a sensitive "federal" issue, as the state government's consent is politically vital for transboundary water pacts.

2. Visa Normalization

Following security concerns and protests in 2024, Indian visa services were significantly curtailed.

Impact: This hampered medical tourism, the garment trade, and educational exchanges.

The Goal: Dhaka is pushing for the full restoration of e-visa services and the reopening of all Indian Visa Application Centers (IVACs) to facilitate business and people-to-people ties.

3. Energy Cooperation and Global Headwinds

The conflict in West Asia has triggered global energy instability.

Interdependence: Bangladesh relies on India for electricity (over 2.4 GW daily) and refined petroleum through the **Bangladesh-India Friendship Pipeline**.

Strategic Dialogue: Discussions are expected to cover secure energy supply chains to insulate the Bangladeshi economy from volatile global oil and gas prices.

4. Security and Connectivity

While not the primary headline, the "reset" includes reassurances that Bangladeshi soil will not be used by insurgent groups inimical to India's interests—a cornerstone of the security relationship.

Strategic Significance for India

Aspect	Significance
Geopolitical	Countering Chinese influence (Belt and Road Initiative) by remaining Bangladesh's primary partner.
Connectivity	Ensuring continued transit and transshipment rights to India's Northeast (Seven Sisters).
Stability	A stable, democratic Bangladesh is essential for the security of India's eastern border.

India-Bangladesh Relations

Historical Background: India–Bangladesh relations were built on a strong foundation during the 1971 Liberation War, when India provided decisive military and diplomatic support, fostering trust and shared secular values.

The partnership was formalised through the 1972 Treaty of Friendship and the 1974 Land Boundary Agreement, which created the initial legal framework for bilateral ties.

Trade: In FY25, total trade reached USD 13.51 billion, with India exporting USD 11.46 billion and importing USD 2.05 billion.

India mainly exports fuels, petroleum products, and cotton inputs, while importing garments, footwear, and textile goods, reflecting strong economic complementarity.

Power and Energy Cooperation: Bangladesh imports 1160 MW of electricity from India. The Maitree Super Thermal Power Plant (1320 MW) built with Indian assistance.

The India-Bangladesh Friendship Pipeline for High-Speed Diesel; Indian PSUs involved in oil exploration and supply.

Development Partnership: India has extended 3 Lines of Credits (LoCs) worth nearly USD 8 billion for infrastructure projects in roads, railways, ports, and a dedicated USD 500 million Defence LoC.

Grant assistance for specific projects like the Akhaura-Agartala rail link and dredging.

Connectivity & Transport: Cross-border rail links such as Agartala–Akhaura, the use of Chittagong and Mongla ports for Indian cargo, revival of old rail routes like Haldibari–Chilahati and Petrapole–Benapole, expanded inland waterways trade under the Protocol on Inland Water Transit and Trade, and the Maitri Setu over the Feni River (connecting Sabroom in India's Tripura state with Ramgarh in Bangladesh) have together improved connectivity.

What Steps Can India and Bangladesh Take to Reset Bilateral Relations?

De-hyphenation from Awami League: India must decisively move past the perception of being an "Awami League-only" ally.

Engaging with the BNP and the broader Bangladeshi civil society is essential to restore public goodwill.

India should shift from regime-to-regime deals to people-to-people connect. Easing visa regimes for medical tourism and education can act as a soft power bridge.

Pragmatic Engagement: Engaging with BNP is a strategic necessity. High-level visits (potentially by the PM) could be offered to confer international legitimacy to the new regime, but strictly in exchange for concrete security guarantees.

Economic Interdependence as a Stabilising Tool: India can leverage its trade surplus to encourage cooperative behaviour while ensuring fair market access for Bangladeshi goods.

Continued Indian supply of cotton yarn, power, and essential commodities can stabilise Bangladesh's economy while reinforcing interdependence.

CEPA & LDC Graduation: As Bangladesh graduates from the Least Developed Country (LDC) status in 2026, it will lose duty-free access to Western markets.

India can fast-track the Comprehensive Economic Partnership Agreement (CEPA) to offer duty-free access to the massive Indian market, acting as an economic cushion contingent on political stability.

Establish Clear "Red Lines": India must unambiguously communicate its non-negotiables to the new government:

Zero Tolerance for Indian insurgents on Bangladeshi soil.

Protection of Minorities is a prerequisite for normal ties.

No Hostile Assets like Chinese developments at Mongla and Payra ports must not evolve into dual-use facilities (e.g., submarine docking) that threaten the Eastern Naval Command.

Domestic Coordination: The Centre must coordinate effectively with Chief Ministers of border states (West Bengal, Assam, Meghalaya, Tripura, Mizoram) to form a unified political consensus.

Border security must be depoliticized and treated as a national priority.

Conclusion

The transition from Sheikh Hasina's era to the Tarique Rahman administration initially sparked uncertainty in New Delhi. However, FM Khalilur Rahman's visit demonstrates that **geography and economic necessity often override partisan shifts**. For India, successfully renewing the Ganga Treaty before the 2026 deadline will be a litmus test for its "Neighborhood First" credentials. A balanced approach that addresses Dhaka's water needs while managing West Bengal's domestic concerns will be the defining challenge of Indian diplomacy in the coming year.

UPSC Prelims Exam Practice Question

Ques: Which of the following best explains the term "transboundary rivers"?

(a) Rivers flowing only within one country

(b) Rivers shared between two or more countries

(c) Rivers flowing into oceans only

(d) Rivers used for hydropower generation

Ans: b)

UPSC Mains Exam Practice Question

Ques: Examine the challenges in renewing the Ganga Water Sharing Treaty. How do domestic political factors influence India's transboundary river diplomacy?

Page 08 : GS II & III : Governance & Environment / Prelims Exam

The Ministry of Environment, Forest and Climate Change (MoEFCC) notified the Plastic Waste Management (Amendment) Rules, 2026, on March 31, 2026. This iteration represents a strategic shift in India's waste policy. While the 2022 Extended Producer Responsibility (EPR) regime focused on the collection of waste, the 2026 rules pivot toward mandated reuse and recycled content. However, the introduction of "elastic" compliance timelines suggests a pragmatic—if controversial—acknowledgment of the systemic hurdles in India's recycling infrastructure.

Elastic rules

India needs proper reckoning of plastic collection and reuse targets

The latest iterations of India's plastic waste management rules, announced on March 31, suggest that the government has hit a wall in its attempts to curb plastic waste collection and recycling. The Plastic Waste Management Rules, first introduced in 2016, have been amended periodically, reflecting a policy framework in constant evolution. The intent is to make companies that produce and use plastics invest in recycling plastic so that, ultimately, less plastic is wasted and dumped in landfills, rivers, oceans, and public spaces. The paradox is that the same qualities that have made plastic ubiquitous – adaptable to a near infinite range of consumer goods, easy to produce, accessible to the richest and the poorest, and flexible in a way that metal can never be – also make it near impossible to incentivise collection and reuse. This is why the Rules were necessary.

Since 2022, when the Extended Producer Responsibility (EPR) regime came into force, producers, importers and brand owners – makers and users of plastic packaging and raw materials – were required to collect and process plastic waste equivalent to 35% of the plastic they introduced into the market in 2021-22, increasing to 70% in 2022-23 and 100% by 2024-25. The amendments of 2026 bring in new mandates. This time, companies must ensure that recycled content makes up a minimum (and increasing) percentage of their plastic packaging annually. For instance, producers, importers and brand owners must ensure that rigid plastic packaging (Category I) contains at least 30% recycled material, rising to 60% by 2028-29. There are also similar 'reuse' obligations. But, strangely, companies that fail to meet their targets in 2025-26, the gazette notification says, may carry forward the shortfall for up to three years, provided they make up at least a third of the deficit annually. In effect this means that the 2025-26 target can be met in 2028-29. Also, at present, there is no evidence or even a claim by the government that all companies are collecting 100% of their obligations. By the government's own responses to Parliament it hovers from 50%-60%, and yet there are no targets set for 2025 and beyond. This seems to suggest that the government has given up on pushing companies to collect or recycle plastic, or has shifted focus to having them use recycled plastic irrespective of how it is sourced. There are provisions on using 'trading certificates' that suggest the logic is to let market economics decide on what is an environmental problem. Without a proper reckoning of collection and recycling targets, the new targets on reuse, which are already elastic, risk being ignored, thus undermining the intent of the EPR regime.

Plastic Waste Management Rules, 2016

Objective: To minimise plastic waste generation, promote recycling and ensure environmentally sound disposal.

Key Features

Extended Producer Responsibility (EPR): Producers, Importers and Brand Owners responsible for collection, recycling and disposal of plastic waste.

Ban on single-use plastics (2022 Amendment): Prohibition of identified single-use plastic items to reduce plastic pollution.

Plastic thickness norm: minimum thickness of 120 microns to promote reuse and reduce littering.

Traceability (2025 Amendment): From July 1, 2025, all plastic packaging must carry a barcode or QR code to enable digital tracking from production to disposal.

Role of local bodies: Urban Local Bodies and Gram Panchayats responsible for collection, segregation and processing of plastic waste.

Key Provisions of the 2026 Amendment

1. Mandatory Recycled Content Targets

For the first time, Producers, Importers, and Brand Owners (PIBOs) must ensure a minimum percentage of **recycled plastic** in their packaging.

Packaging Category	2025–26 Target	2028–29 Target
Category I (Rigid)	30%	60%
Category II (Flexible)	10%	20%

Packaging Category	2025–26 Target	2028–29 Target
Category III (Multi-layered)	5%	10%

2. Reuse Obligations for Rigid Plastic

The rules introduce a hierarchy for rigid containers (Category I). Large water containers (≥4.9 kg/litres) face a steep **70% reuse target** for 2025–26, rising to **85%** by 2028. Smaller consumer goods (0.9–4.9 kg) start at a more modest **10%** target.

3. The "Elastic" Shortfall Provision

A critical and debated feature is the **carry-forward clause**. Companies failing to meet their 2025–26 targets can spread the deficit over the next **three years**, provided they meet at least **one-third** of the shortfall annually. This effectively pushes the final day of reckoning for today's targets to 2029.

4. Traceability & Digital Auditing

QR/Barcode Mandatory: All plastic packaging must now feature traceable codes to verify its origin and recycled content.

Environmental Auditors: A new cadre of "Registered Environmental Auditors" has been introduced to verify EPR claims and prevent the "fake certificate" scams that plagued previous years.

Critical Analysis

The "Wall" of Collection

The government's decision to allow carry-forwards suggests that the 100% collection target set for 2024–25 remains largely aspirational. With actual collection rates hovering between 50% and 60%, the state is shifting focus. Instead of solely pushing for more collection, it is trying to create a market demand for what is collected by mandating its use in new packaging.

The Market vs. The Environment

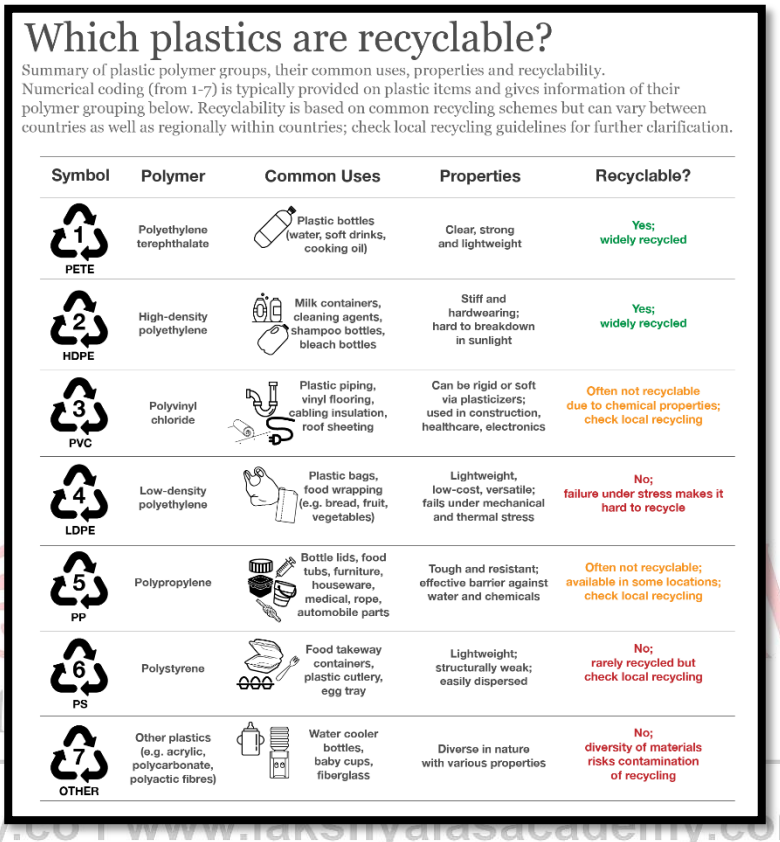
The formalization of **trading certificates** allows companies to buy credits rather than physically managing their own waste. While this provides "market flexibility," critics argue it decouples companies from the environmental impact of their specific products, potentially turning a pollution problem into a purely financial transaction.

The Federal Challenge

While the rules are Central, enforcement lies with **Urban Local Bodies (ULBs)** and **Gram Panchayats**. The success of these "elastic" rules depends on whether local bodies can upgrade Material Recovery Facilities (MRFs) to handle the segregation required for high-quality recycling.

What are the other Initiatives taken to Curb Plastic Waste?

Swachh Bharat Mission
India Plastics Pact
Project REPLAN
Un-Plastic Collective
GoLitter Partnerships Project



Central Pollution Control Board (CPCB)

- The CPCB was constituted in 1974 under the Water (Prevention and Control of Pollution) Act, 1974.
- CPCB was also entrusted with powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.
- It serves as a field formation and provides technical services to the Ministry of Environment and Forests.
- Principal functions include promoting the cleanliness of streams and wells, improving air quality, and preventing, controlling, or abating water and air pollution.

Conclusion

The 2026 Rules reflect a "tough but flexible" stance. By mandating recycled content, India is forcing the hand of the FMCG sector to invest in the domestic recycling industry. However, the **elasticity** of the targets risks creating a culture of perpetual delay. For India to achieve a true circular economy, the "reckoning" mentioned by critics must involve transparent, real-time data on the CPCB portal to ensure that "flexibility" does not become a loophole for non-compliance.

UPSC Prelims Exam Practice Question

Ques: Which of the following best describes the term "Extended Producer Responsibility (EPR)"?

(a) Responsibility of consumers to recycle plastic waste

(b) Responsibility of producers for post-consumer waste management

(c) Responsibility of municipalities for waste segregation

(d) Responsibility of NGOs for environmental awareness

Ans: (b)

UPSC Mains Exam Practice Question

Ques: The Plastic Waste Management (Amendment) Rules, 2026 mark a shift from waste collection to resource circularity. Critically examine. **(150 Words)**

Page 08 : GS II & III : International Relations & Economy / Prelims Exam

The World Trade Organization (WTO) is currently navigating its most significant institutional crisis since its inception in 1995. Amidst rising coercive unilateralism (notably from the U.S.) and a shift away from multilateral consensus, MC14 was viewed as a potential "reassuring" event. However, the conference concluded without a formal Ministerial Declaration, leading many experts to describe the organization as "flailing."

The World Trade Organization is flailing

Trade multilateralism is facing its biggest stress test since the Second World War. The United States' coercive unilateralism and attempts to dilute foundational rules such as the most-favoured nation (MFN) treatment threaten to hollow out the entire system. At such a critical juncture in history, the World Trade Organization (WTO)'s fourteenth Ministerial Conference (MC14), which recently concluded in Yaoundé, Cameroon (March 2026), was expected to reassure the global community about the importance of a rules-based global trading order, which limits hegemonic tendencies.

Regrettably, the MC14 failed to meet this challenge. While no one expected the MC14 to turn up trumps, the fact that the 166-member WTO failed to reach consensus on even issuing a ministerial declaration outlining future work is disconcerting. To paper over the cracks, the WTO's Director General declared that the MC14 had produced a Yaoundé package comprising certain draft decisions, that is, decisions yet to be finalised, which will be discussed at Geneva in the months ahead.

Tale of two moratoriums

The MC14 will go down in history as the one that broke the long-standing consensus on moratoriums for two things. First, customs duties on electronic commerce transactions. Since 1998, WTO member-countries agreed not to impose customs duties on electronic commerce transactions to keep digital trade flows free. The moratorium has been extended every two years since its inception. However, at MC14, countries were unable to reach an agreement on extending the moratorium, which, thus, lapsed on March 31.

Today, countries are free to impose tariffs on digital trade flows, though it is expected that the WTO's General Council will deliberate on this issue again in the months ahead. While this may provide developing countries with an opportunity to augment their revenue, it will burden consumers and businesses. A significant development that accompanied the end of the e-commerce moratorium was the signing of an e-commerce agreement (ECA) by 66 WTO members, which prohibits customs duties on digital trade.

Prabhash Ranjan

Professor and Vice Dean (Research), Jindal Global Law School, O.P. Jindal Global University

The WTO's fourteenth Ministerial Conference has showed up the cracks in the rules-based system

Although not yet part of the WTO rulebook and binding only for the signatories, this agreement will establish two separate legal frameworks: the WTO, which allows tariffs on digital trade, and the ECA, which does not.

The second moratorium, in force since 1995, barred non-violation complaints under the WTO's TRIPS Agreement. The WTO allows countries to file claims not only for legal violations but also when a country's measures nullify another country's anticipated benefits, even if those measures are legal.

This raises concerns for developing nations that their laws to promote public health could provoke complaints from developed countries alleging that they nullify the benefits of their intellectual property. Although such complaints are possible, history suggests they are unlikely to succeed, as evidenced by the failure of all 10 non-violation complaints related to trade in goods at the WTO.

Plurilateral innovation

A so-called low-hanging fruit at the MC14 was the incorporation of the plurilateral Investment Facilitation for Development (IFD) agreement into Annex 4 of the WTO Agreement, with support from 129 of 166 countries. However, it did not materialise due to India's opposition. New Delhi opposed the IFD's inclusion for multiple reasons, including the absence of legal safeguards to incorporate plurilateral agreements into the WTO acquis.

Plurilateral agreements to be incorporated into the WTO should be open and inclusive rather than exclusive. The failure to include the IFD Agreement has deepened the WTO's legislative crisis, as the organisation struggles to establish rules for 21st century challenges.

No road map for the future

The MC14 failed to provide a clear road map for WTO reforms. Critical issues such as reviving the stalled appellate function of the WTO's dispute settlement system have been postponed. Any attempts by the developed world, especially the U.S., to undermine key principles, such as MFN and the special and differential treatment, must be strongly resisted.

It is often said that those who do not learn from history are doomed to repeat it. The history of trade multilateralism demonstrates that whenever trade multilateralism slows, American unilateralism tends to rise. This occurred in the early 1970s when the General Agreement on Tariffs and Trade (GATT) negotiations floundered, leading to the enactment of strict measures such as Section 301 of the U.S. Trade Act of 1974. This provision empowers the U.S. President to take unilateral action against perceived unfair trade practices. We are currently witnessing a similar situation, but this time without Congressional approval and with far greater vengeance. A setback at the MC14 will exacerbate these trends.

Additionally, the failure of the MC14 will accelerate the trend of countries creating new trade rules outside the WTO. To keep the WTO relevant, innovative solutions must be found, such as plurilateralising the WTO. India should take the lead in developing the legal guardrails needed for the development and adoption of plurilateral agreements within the WTO. Achieving this will require a novel approach and unflinching political commitment to trade multilateralism.

The views expressed are personal

Key Outcomes and Points of Contention

1. The Lapse of the E-commerce Moratorium

Since 1998, WTO members had agreed not to impose customs duties on electronic transmissions (digital trade).

The Shift: At MC14, members failed to extend this moratorium, causing it to **lapse on March 31, 2026**.

Impact: Developing nations now have the legal room to impose tariffs on digital goods (software, e-books, streamed content) to boost revenue. However, this risks increasing costs for consumers and creating a fragmented digital market.

The "Split" System: 66 members signed a separate **E-commerce Agreement (ECA)** to maintain zero duties among themselves, effectively creating a "two-tier" global digital trade system.

2. The TRIPS Non-Violation Moratorium

A second long-standing moratorium (since 1995) regarding **Intellectual Property (TRIPS)** also faced pressure.

The Concern: Developing nations fear that if this moratorium ends, developed nations could file complaints against "legal" public health measures (like generic drug manufacturing) on the grounds that they "nullify or impair" the anticipated benefits of IP holders.

3. The Plurilateral "Legislative Crisis" (India's Role)

A major friction point was the **Investment Facilitation for Development (IFD)** agreement, supported by 129 members.

The Obstacle: India blocked the formal incorporation of this plurilateral agreement into the WTO rulebook.

The Logic: India argues that "plurilateral" agreements (signed by only some members) lack the legal safeguards required to be part of a "multilateral" (all-member) organization. This has sparked a debate on whether the WTO should allow "coalitions of the willing" to move faster than the whole group.

Strategic Challenges for the Rules-Based Order

Challenge	Detail
Dispute Settlement	The **Appellate Body** remains paralyzed; there is still no clear roadmap to revive the "Supreme Court" of trade.
U.S. Unilateralism	The rise of measures like **Section 301** (unilateral trade sanctions) threatens the "Most-Favoured Nation" (MFN) principle.
Institutional Gridlock	The requirement for **consensus** among 166 diverse members is increasingly seen as a barrier to addressing 21st-century challenges like climate trade and digital economy.

World Trade Organization (WTO):

About: WTO is an international institution formed to regulate the rules for global trade among nations.

It was formed under the Marrakesh Agreement signed on 15th April 1994 by 123 countries after the Uruguay Round negotiations (1986-94) of the General Agreement on Tariffs and Trade (GATT), leading to the birth of WTO in 1995.

WTO succeeded the GATT which had regulated world trade since 1948.

GATT focused on trade in goods, while WTO covers trade in goods, services, and intellectual property, including creations, designs, and inventions.

Headquarters: Geneva, Switzerland.
Members: 166 countries, representing 98% of global trade.
Key Bodies:

Ministerial Conference (MC): Highest decision-making authority.
Dispute Settlement Body (DSB): DSB resolves trade disputes.

The Indian Standpoint

For India, the WTO is a vital shield against the "hegemonic tendencies" of larger economies. India's strategy at MC14 focused on:

Protecting Policy Space: Ensuring that domestic laws (health, agriculture) aren't undermined by IP or investment rules.

Legal Guardrails: Insisting that any new "plurilateral" rules must be open, inclusive, and legally sound before joining the WTO acquis.

Developing World Leadership: Positioning itself as the voice of the Global South against "coercive" trade practices.

Conclusion

The failure of MC14 to produce a unified declaration signals a move toward **"Trade Fragmentation."** As countries increasingly create rules outside the WTO (through FTAs or plurilateral pacts), the organization's relevance as the global "referee" is diminishing. For India, the challenge lies in balancing its opposition to problematic plurilateral pacts with a proactive role in defining the "legal guardrails" that could prevent the WTO from becoming entirely obsolete in an era of resurgent unilateralism.

UPSC Prelims Exam Practice Question

Ques: The "E-commerce Moratorium" in the WTO context refers to:

(a) Ban on digital trade between countries

(b) Agreement to not impose customs duties on electronic transmissions

(c) Regulation of data privacy standards globally

(d) Restriction on cross-border data flows

Ans: b)

UPSC Mains Exam Practice Question

Ques: The WTO is facing a structural crisis due to the rise of unilateralism and weakening multilateralism. Critically examine. **(150 Words)**

Page 10 : GS II : Indian Polity / Prelims Exam

In March 2024, Prime Minister Narendra Modi completed 8,931 days in elected office, surpassing the record previously held by Pawan Kumar Chamling. While India's President is limited to two terms by strong political convention, the Constitution remains silent on the tenure of the Prime Minister and Chief Ministers. This "asymmetry" has sparked a legal and democratic debate: Does the absence of a formal term limit, combined with the Tenth Schedule (Anti-Defection Law), create a "perpetual executive" that the Constitution's framers did not intend?

The executive office without a limit

India has developed a convention limiting a third presidential term, but the Constitution places no such restriction on the Prime Minister's tenure. With Prime Minister Narendra Modi completing 8,931 days in office, this asymmetry invites closer scrutiny.

LETTER AND SPIRIT

V. Venkatesan

On March 22, 2026, Narendra Modi completed 8,931 days as head of an elected government in India, combining over thirteen years as Chief Minister of Gujarat (from October 7, 2001 to May 21, 2014) with three consecutive terms as Prime Minister. The milestone surpassed the record of Pawan Kumar Chamling, who served as Chief Minister of Sikkim for 8,930 days. Neither the congratulations from within the ruling dispensation nor the alarm from its critics engages the constitutional question the milestone makes unavoidable: why does India's Constitution impose no limit on how long a single individual may hold the office that wields actual executive power?

India is unusual among large democracies in this respect. The United States adopted the Twenty-Second Amendment in 1951, responding to Franklin Roosevelt's four consecutive terms. South Korea, Brazil, Colombia, and Indonesia all impose presidential term limits. Among parliamentary democracies, the question is considered less urgent because the Prime Minister serves at the confidence of the legislature. But this theoretical availability of removal is what requires scrutiny in the Indian context.

Constituent Assembly's rationale

The Constituent Assembly's reasoning was articulated by B.R. Ambedkar in his speech of November 4, 1948 introducing the Draft Constitution. Ambedkar drew a distinction between "the daily assessment of responsibility," available through questions, no-confidence motions, and adjournment motions, and the "periodic assessment" offered by fixed-term elections. The daily assessment, he argued, was far more effective. No term limit was needed because the legislature's confidence served as a rolling check.

Return to office: Prime Minister Narendra Modi during the swearing-in ceremony at the Rashtrapati Bhavan in New Delhi in 2024. R.V. MOORTHY

What the Tenth Schedule broke

The Fifty-Second Amendment (1985) inserted the Tenth Schedule, providing for the disqualification of any legislator who votes against the party whip. The Supreme Court in *Kihoto Hollohan vs. Zachillhu* (1992) upheld its constitutionality as a measure to protect the integrity of the electoral mandate. But the Tenth Schedule fundamentally altered the relationship between legislature and executive that Ambedkar had relied upon. Under the anti-defection regime, a ruling-party member who votes against the government on a confidence motion faces disqualification. The no-confidence motion becomes a dead letter whenever the ruling party has a working majority.

Nor does the British safety valve operate in India. Indian political parties have no institutionalised mechanism for leadership challenges. The anti-defection law locks legislators into party loyalty; the absence of intra-party democracy locks the party into loyalty to its leader.

The comparative evidence

Tom Ginsburg, James Melton, and Zachary Elkins, in their study of executive term-limit evasion, showed that leaders in multiple regions have sought to extend their tenure through constitutional amendment, replacement, or judicial interpretation. Ginsburg and Aziz Huq further argued that democratic decline more often proceeds through incremental institutional decay than through sudden authoritarian rupture. India has not needed to abolish a term limit because it never had one. The question is whether the absence of a formal constraint, combined with the neutralisation of parliamentary accountability, produces the same structural risks that term limits elsewhere are designed to prevent.

The presidential irony

India has developed a convention against a third presidential term, though the presidency is largely ceremonial. No President has served more than two terms. The expectation satisfies the three-part test for constitutional conventions laid down by Ivor Jennings in The Law and the Constitution (1959): precedents exist, the actors believed themselves bound by a rule, and the rule has a reason. The office that holds no real executive power is constrained by convention. The office that holds virtually all executive power is constrained only by the electorate's periodic verdict, with the anti-defection law largely disabling other accountability mechanisms.

The strongest counter-argument is that voters have endorsed Mr. Modi's tenure three consecutive times, and that a term limit would override their expressed preference. The objection is serious; a term limit is, in a real sense, anti-democratic. But it rests on the premise that Ambedkar relied upon: that periodic elections, combined with parliamentary accountability, suffice to discipline executive power. If that accountability has been structurally impaired by the Tenth Schedule, elections must carry a heavier burden. And elections, however free, are a weak constraint on the compounding advantages of prolonged incumbency: control over appointments to regulatory bodies, the Election Commission, and the higher judiciary; the capacity to shape the information environment; and the ability to calibrate policy for electoral benefit across multiple cycles.

What might be done

The more natural reform is to restore the mechanism the framers relied upon. Exempt votes on confidence motions from the Tenth Schedule's disqualification provision, so that legislators can remove a government without forfeiting their seats. A more ambitious possibility is a constitutional amendment limiting consecutive terms as Prime Minister or Chief Minister, while permitting a return after a gap. The State-level dimension is equally pressing, given the extended tenures of leaders such as Jyoti Basu, Naveen Patnaik, and Pinarayi Vijayan.

The 8,931-day milestone forces attention to whether India's parliamentary system retains the self-correcting capacity the framers relied upon.

(V. Venkatesan is a journalist and legal researcher)

THE GIST

- The Constituent Assembly envisioned a daily assessment of the Prime Minister's office through questions, adjournment motions, and no-confidence motions, reinforced by fixed-term elections as an efficient alternative to explicit term limits. However, the anti-defection law altered this intended system of checks.
- An argument against imposing a term limit is that it could override the voters' expressed preference. Yet, if parliamentary accountability is structurally weakened by the Tenth Schedule, elections bear an even heavier responsibility.

The Constitutional Paradox

1. The Framers' Intent (Ambedkar's Vision)

Dr. B.R. Ambedkar argued against term limits because he believed the Parliamentary system provided two layers of accountability:

Daily Assessment: Through questions, resolutions, and No-Confidence Motions in Parliament.

Periodic Assessment: Through general elections every five years.

Ambedkar felt that a "daily assessment" was more effective than the "periodic" check used in the US Presidential system.

2. The Impact of the Tenth Schedule (1985)

The analysis argues that the **Anti-Defection Law** has broken Ambedkar's "daily assessment" mechanism.

The Constraint: Legislators cannot vote against their party leader (the PM/CM) on a No-Confidence Motion without losing their seats.

The Result: The legislature is "locked" into loyalty. Parliamentary accountability is neutralized as long as the ruling party holds a majority, making the executive office virtually limitless.

3. Presidential vs. Prime Ministerial Conventions

Feature	President of India	Prime Minister of India
Nature of Power	Ceremonial / Nominal	Real Executive Power
Term Limit	Two-term convention (established by Rajendra Prasad)	No limit (Constitutional or Conventional)
Accountability	Impeachment (Rare)	Responsible to Lok Sabha (Weakened by Tenth Schedule)

Comparative Global Context

India is an outlier among major democracies regarding executive constraints:

United States: The 22nd Amendment limits Presidents to two terms.

Latin America/South Korea: Most have strict term limits to prevent "incumbency advantages" from hardening into autocracy.

United Kingdom: While no formal limit exists, UK parties have robust **internal mechanisms** to remove leaders (e.g., the removal of Margaret Thatcher or Boris Johnson), a feature notably absent in India's centralized party structures.

Critical Analysis: Structural Risks

For a Civil Services aspirant, the core issue is whether prolonged incumbency leads to **"Institutional Decay"**:

Control over Regulators: Long tenures allow the executive to appoint heads of the Election Commission, Judiciary, and investigative agencies across multiple cycles.

Information Environment: The ability to shape the narrative through state machinery over decades.

The State-Level Dimension: This is not just a federal issue; leaders like Jyoti Basu and Naveen Patnaik have had tenures spanning decades, raising similar questions about regional democratic competition.

Proposed Reforms

The article suggests two primary paths to restore the "self-correcting" nature of Indian democracy:

Modify the Tenth Schedule: Exempt "Votes of Confidence" from disqualification, allowing MPs to vote their conscience regarding the leadership without losing their seats.

Formal Term Limits: A constitutional amendment to limit consecutive terms for PMs and CMs (e.g., two or three terms), perhaps allowing a return after a "cooling-off" period.

Conclusion

The 8,931-day milestone is more than a statistical record; it is a "constitutional moment." It highlights a gap where the political reality of the 21st century (highly centralized parties and anti-defection laws) has outpaced the 1948 constitutional design. Whether India needs formal term limits or simply a restoration of parliamentary independence remains one of the most significant questions for the future of its democratic health.

UPSC Prelims Exam Practice Question

Ques : **Consider the following statements regarding the Anti-Defection Law:**

1. It was introduced by the 52nd Constitutional Amendment Act, 1985.

2. It allows legislators to vote against their party in a no-confidence motion without consequences.

3. It aims to ensure political stability by preventing frequent party switching.

Which of the statements are correct?

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2 and 3

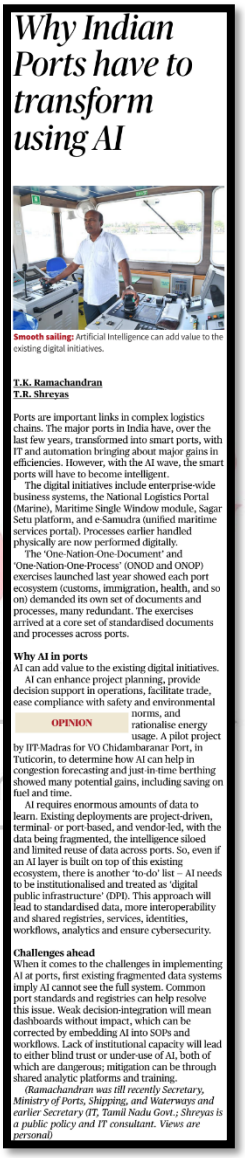
Ans: b)

UPSC Mains Exam Practice Question

Ques: Discuss how the Tenth Schedule has altered the balance between executive and legislature in India. **(150 Words)**

Page : 13 : GS III : Indian Economy / Prelims Exam

India's major ports have already undergone a digital transformation, moving from physical processes to automated systems like the National Logistics Portal (Marine) and Sagar Setu. However, while current systems are "Smart" (digitized), they remain reactive. The next evolution requires AI to make ports "Intelligent"—capable of predictive analysis, autonomous decision-making, and seamless cross-port interoperability.


Why Indian Ports have to transform using AI

Smooth sailing: Artificial Intelligence can add value to the existing digital initiatives.

T.K. Ramachandran
T.R. Shreyas

Ports are important links in complex logistics chains. The major ports in India have, over the last few years, transformed into smart ports, with IT and automation bringing about major gains in efficiencies. However, with the AI wave, the smart ports will have to become intelligent.

The digital initiatives include enterprise-wide business systems, the National Logistics Portal (Marine), Maritime Single Window module, Sagar Setu platform, and e-Samudra (unified maritime services portal). Processes earlier handled physically are now performed digitally.

The 'One-Nation-One-Document' and 'One-Nation-One-Process' (ONOD and ONOP) exercises launched last year showed each port ecosystem (customs, immigration, health, and so on) demanded its own set of documents and processes, many redundant. The exercises arrived at a core set of standardised documents and processes across ports.

Why AI in ports

AI can add value to the existing digital initiatives.

AI can enhance project planning, provide decision support in operations, facilitate trade, ease compliance with safety and environmental norms, and rationalise energy usage. A pilot project by IIT-Madras for VO Chidambaranar Port, in Tuticorin, to determine how AI can help in congestion forecasting and just-in-time berthing showed many potential gains, including saving on fuel and time.

OPINION

AI requires enormous amounts of data to learn. Existing deployments are project-driven, terminal- or port-based, and vendor led, with the data being fragmented, the intelligence siloed and limited reuse of data across ports. So, even if an AI layer is built on top of this existing ecosystem, there is another 'to-do' list – AI needs to be institutionalised and treated as 'digital public infrastructure' (DPI). This approach will lead to standardised data, more interoperability and shared registries, services, identities, workflows, analytics and ensure cybersecurity.

Challenges ahead

When it comes to the challenges in implementing AI at ports, first existing fragmented data systems imply AI cannot see the full system. Common port standards and registries can help resolve this issue. Weak decision-integration will mean dashboards without impact, which can be corrected by embedding AI into SOPs and workflows. Lack of institutional capacity will lead to either blind trust or under-use of AI, both of which are dangerous; mitigation can be through shared analytic platforms and training.

(Ramachandran was till recently Secretary, Ministry of Ports, Shipping, and Waterways and earlier Secretary (IT, Tamil Nadu Govt.; Shreyas is a public policy and IT consultant. Views are personal)

Ports In India

- Ports are vital to India's economy, handling about 95% of export and import (EXIM) cargo by volume and 70% by value.
- With 12 major (13th major port at Vadhavan, Maharashtra is still in development phase) and over 200 non-major ports, they drive trade, industrial growth, and connectivity. In the past decade, Indian ports have modernized to global standards, boosting efficiency and India's maritime standing.

The Current Digital Landscape

Before AI can be fully integrated, India has established a baseline of digital public infrastructure (DPI):

- **Enterprise Systems:** Unified maritime services portals like **e-Samudra**.
- **Standardization:** The **'One-Nation-One-Document' (ONOD)** and **'One-Nation-One-Process' (ONOP)** initiatives have reduced redundancies across customs, immigration, and port health.
- **The Limitation:** Current data is **fragmented and siloed**. Each terminal or port often uses vendor-specific AI that does not communicate with the broader ecosystem.

Strategic Value of AI in Ports

1. Operational Efficiency & Just-in-Time (JIT) Berthing

- **Congestion Forecasting:** A pilot project at **VO Chidambaranar Port (Tuticorin)** demonstrated that AI can predict ship arrivals and congestion.
- **Resource Saving:** JIT berthing ensures ships don't idle at sea, significantly saving fuel and reducing carbon emissions.

2. Project Planning and Decision Support

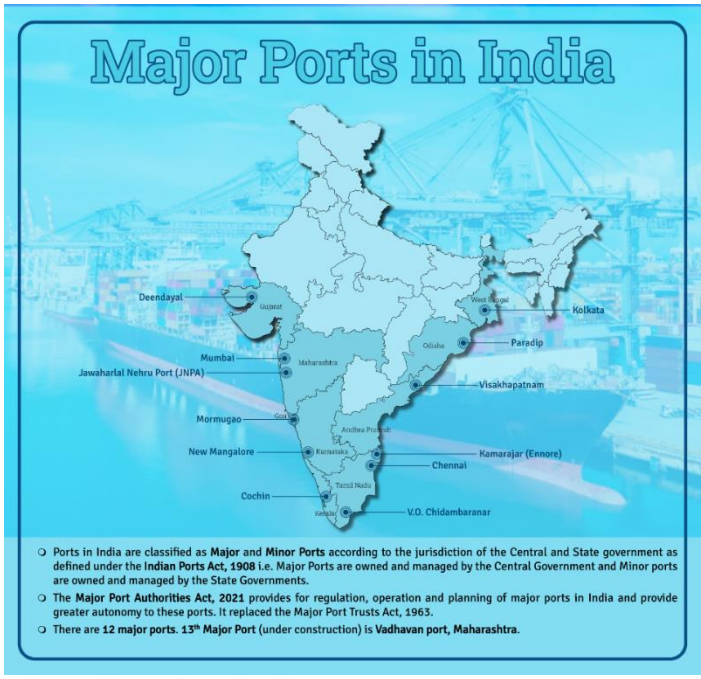
AI provides real-time decision support for complex logistics chains, helping harbor masters and port authorities optimize berth allocation and crane movements.

3. Compliance and Safety

Automated monitoring ensures stricter adherence to international environmental norms and safety protocols, reducing human error in high-risk maritime operations.

Key Challenges to AI Adoption

Challenge	Impact	Proposed Mitigation
Fragmented Data	AI cannot see the "full system" due to siloed databases.	Establish **Common Port Standards** and shared registries.
Weak Integration	Dashboards exist but don't influence real-time action.	Embed AI directly into **Standard Operating Procedures (SOPs)**.
Institutional Gap	Lack of capacity leads to "Blind Trust" or "Under-use."	Develop **Shared Analytic Platforms** and specialized training.



The Way Forward: AI as Digital Public Infrastructure (DPI)

The authors argue that AI should not be treated as a series of isolated private projects. Instead, it must be institutionalized as **DPI**.

Interoperability: Shared identities, workflows, and analytics across all Indian ports.

Cybersecurity: A unified framework to protect critical maritime data.

Standardized Data: Moving toward a regime where data is treated as a national asset to train more robust AI models.

Key Provisions of the Indian Ports Act, 2025

Statutory Bodies: The Act formally recognizes State Maritime Boards established by coastal states and empowers them to manage non-major ports (covering planning, licensing, tariffs, and compliance).

Under the act, the Maritime State Development Council was given statutory status to guide data transparency, policy advice, national planning, and centre–State coordination.

Port Officers: The Act designates the conservator - appointed by the government - as the port officer, with powers over vessel movement, fee recovery, disease control, and penalty adjudication.

Dispute Resolution: The Act mandates setting up Dispute Resolution Committees (DRCs) to resolve disputes at non-major ports; appeals lie with High Courts, and arbitration is permitted for quicker resolution.

Tariff Regulation: At major ports, tariffs are set by the Major Port Authority Board or a company's Board of Directors, while at non-major ports, they are fixed by the State Maritime Board or concessionaire, with mandatory online publication for transparency.

Safety & Sustainability: The Act enforces penalties for safety breaches, aligns with global conventions like MARPOL (the International Convention for Prevention of Marine Pollution For Ships) and Ballast Water Management, mandates pollution control and disaster readiness, and requires central audits for compliance.

Digitalisation & Ease of Doing Business: Maritime Single Window and Advanced Vessel Traffic Systems to improve efficiency and reduce congestion.

Conclusion

The transformation of Indian ports is a vital component of the **Amrit Kaal Vision 2047** for the maritime sector. While digitization provided the "bones" of modern port management, AI will provide the "brain." To stay competitive in global trade, India must move beyond localized AI pilots and build a unified, intelligent maritime ecosystem that treats data and algorithms as essential public infrastructure.

UPSC Prelims Exam Practice Question

Ques: With reference to digital initiatives in India's maritime sector, consider the following:

1. National Logistics Portal Marine

2. Sagar Setu

3. e-Samudra

Which of the above are part of India's port digitization efforts?

(a) 1 and 2 only

(b) 2 and 3 only
(c) 1, 2 and 3
(d) 1 only
Ans: c)

UPSC Mains Exam Practice Question

Ques: Discuss the role of Artificial Intelligence in enhancing operational efficiency and sustainability in India's port sector. **(250 Words)**

Transforming India's nuclear power landscape

Rakesh Sood

A former diplomat and currently Distinguished Fellow at the Council for Strategic and Defence Research

In the 2025-26 Budget speech, Finance Minister Nirmala Sitharaman announced that India's installed nuclear power generation capacity would rise from 8,180 MW to 1,00,000 MW (100 GW) by 2047. She also signalled transformative legislative changes, leading to the introduction and rapid passage of the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill in December 2025.

The scope of change envisaged is dramatic. All nuclear activity had hitherto been the exclusive preserve of the Department of Atomic Energy (DAE). The SHANTI Act promises a transformation of India's nuclear energy landscape by bringing in private companies to build, own and operate nuclear power plants, provides statutory status to the Atomic Energy Regulatory Board (AERB), and revises the liability framework to encourage private and even foreign investment. The 1962 Atomic Energy Act and the 2010 Civil Liability for Nuclear Damage Act (CLNDA) stand repealed and replaced by the SHANTI Act (2025).

However, to realise the promise of 100 GW will need putting the nuts and bolts of implementation in place, the notification of supportive rules and regulations, consonant with the transformative spirit underlying the SHANTI Act.

Driving the reforms

Two key pronouncements drive the reform: achieving Viksit Bharat by 2047 and net-zero emissions by 2070. As society moves up the development ladder, the nature of energy consumption shifts to electricity from traditional modes of energy such as firewood, fossil fuels for transport and heating, and coal for industry. Consequently, the "net zero" target also imposes a parallel shift away from fossil fuel-based power generation towards renewables and other low carbon options. In 2024, India's per capita electricity generation was 1,418 kWh (kilo-watt-hour) compared to 7,097 kWh for China and 12,701 kWh for the United States. The OECD average is a little above 8,000 kWh. This indicates the distance that India needs to travel to achieve the goal of Viksit Bharat. The second goal of "net zero" imposes its own conditionalities. In 2024, India's per capita energy consumption was 7,893 kWh, indicating that only one-fifth of the energy consumption is from electricity.

In June 2025, India's electricity generating capacity reached 476 GW (giga-watt) and approximately 50% was non-fossil fuel sources. Renewable sources made up 227 GW, consisting of solar power 111 GW, wind power 51 GW, and hydropower 48 GW, with an additional 5GW from micro-hydel projects and bioenergy 12 GW. In addition, nuclear power – which is seen as low carbon and not strictly renewable as it consumes fissile material as fuel – was 8.8 GW. Thermal power, primarily based on coal accounted for 240 GW. India has committed to increasing the installed capacity of renewables to 500 GW by 2030. However, the installed capacity does not reveal the full picture. Renewable sources generation depends on the time of day, climatic and seasonal conditions and geography. India generated a total of 1,824 TWh (tera-watt-hours) during 2024-25. Renewable sources accounted for 403 TWh (solar 144 TWh, wind 83 TWh, hydro power 160 TWh and bioenergy 16 TWh). Nuclear power accounted for 57 TWh while thermal power generation was 1,363 TWh. Thermal power, therefore, accounted for 75% of the electricity generated with 50% of the generating capacity compared to 50% renewables capacity providing 22%, while nuclear power contributed 3% with 1.8% of generating capacity. The reason is that thermal and nuclear sources provide for steady baseload power. For renewables to provide at scale, large investments in energy storage become essential. This is why renewables capacity growth is now facing headwinds with projects of 40 GW languishing without power-purchase contracts.

Realising the 100 GW target requires SHANTI Act implementation alongside transparent resolution of tariffs, fuel ownership, waste management, insurance, dispute settlement, and regulatory autonomy

India's nuclear power journey and options

Conservative estimates indicate that India will need to grow its electricity generating capacity to over 2,000 GW to reach Viksit Bharat levels. Even with more efficient and cheaper battery storage, renewables such as solar and wind farms are about 10 times more land intensive when compared to thermal power plants; since coal is inconsistent with "net zero", nuclear power remains the preferred baseload means to achieve "net-zero".

India's first nuclear power reactor went operational in 1969 in Tarapur. Today, the Nuclear Power Corporation (NPCIL) is managing 24 nuclear power plants with an installed capacity of 8,780 MW (one reactor in Rawatbhata has been shut down). The two oldest are Boiling Water Reactors (BWR), two at Kudankulam are Russian design VVERs (pressurised water reactor or PWR) and the balance are Pressurised Heavy Water Reactors (PHWR). The original design was 220 MW; this has been successfully indigenised and adapted to 540 MW and 700 MW designs.

The DAE budget has averaged between ₹24,000 crore and ₹26,000 crore during the last three years. India's 700 MW PHWR construction cost is $2 million per MW, among the lowest globally for nuclear power. To add 90 GW over the next two decades would need an outlay of over $200 billion (₹18 lakh crore), only feasible with private investment; both domestic and foreign.

In 2017, the government gave administrative and financial approval for building 10 reactors of 700 MW each in fleet mode but work has not begun. The logic of fleet mode was to streamline production to gain economies of scale. Three other locations – Jaitapur (Maharashtra), which is planned to have six reactors of 1,650 MW each based on a French (EDF) design, and Mithi Virdi (Gujarat) and Kovvada (Andhra Pradesh), each slated to have six reactors of 1,000 MW capacity using Westinghouse-Toshiba and GE-Hitachi designs – have been under consideration for over a decade. The likely power generation costs from these unproven designs is likely to be over $5 million per MW.

Many industries have captive power plants, ranging from 10 MW to 200 MW; most of these are fossil fuel-based. Current estimates for the installed capacity are 90 GW with plants of 100 MW and above accounting for two-thirds capacity. The government has allocated ₹20,000 crore to research and develop five indigenous models of Small Modular Reactors (SMR) of 5 MW, 55 MW and 200 MW capacity by 2033. Meanwhile, the indigenised 220 MW PHWR model (15 are currently operational), can be a reliable workhorse. With efficient project management, some amount of modularisation, and economies of scale, the time from first pour-of-concrete to going-on-stream can be reduced to 40 months. Steel, primary metals, cement, petrochemicals and paper industries, and now, the data centres, have shown interest.

Three-front nuclear strategy

To achieve the 100 GW target requires careful planning across three fronts. The EdF and Westinghouse designs are comparatively new and will need to be indigenised to bring down costs. China has demonstrated this by building a supporting industry base and plans to build 33 reactors of 1,000 MW each at below $2 million per MW over 10 years. Second, the DAE should identify institutions to accelerate research and development for indigenous SMRs, especially of the molten-salt reactor design. Another research area is in the use of Thorium cladding with HALEU (High Assay Low Enriched Uranium) that can provide an alternative to the Breeder Reactor route in order to permit early exploitation of India's thorium reserves. Third, the indigenised 220 MW PHWR model is ready to be modularised as an economically viable replacement for a number of captive power plants; some Indian private sector companies have the requisite design, fabrication and construction experience. Since nuclear power generation requires high upfront capital costs but low operating costs over a long (60 years) operating life, an appropriate financing model will need to be worked out. Existing exclusion zone regulations, intended for multiple reactors at one site will need to be modified for captive single unit reactors.

Conceptually, the SHANTI Act attempts a division between strategic- and defence-related nuclear activities and the civilian power generation; now, the rules and regulations to be issued must make this clear. Issues of nuclear power tariffs, ownership of nuclear fuel, waste management, insurance and liability, dispute settlement mechanism, and an autonomous regulator will need to be dealt with in a transparent manner. Only then will the SHANTI Act deliver on its promise.

GS Paper III: Science and Tech & Environment

UPSC Mains Exam Practice Question: Private participation in nuclear energy can accelerate India's clean energy transition but also raises governance concerns. Discuss. **(150 Words)**

Context : In a landmark move for India's energy security, the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025 was passed in December 2025. It marks the end of the state's monopoly over nuclear power, repealing the Atomic Energy Act of 1962 and the Civil Liability for Nuclear Damage Act (CLNDA) of 2010. The goal is a 12-fold increase in nuclear capacity—from the current 8.8 GW to 100 GW by 2047—to meet the twin objectives of Viksit Bharat and Net-Zero by 2070.

Key Provisions of the SHANTI Act (2025)

Private Participation: For the first time, private companies are permitted to **build, own, and operate** nuclear power plants.

Regulatory Independence: Grants statutory status to the **Atomic Energy Regulatory Board (AERB)**, making it a more autonomous oversight body.

Liability Reform: Revises the previous liability framework (which had deterred foreign and private players) to encourage large-scale domestic and foreign investment.

Strategic Decoupling: Attempts to create a clear division between **civilian nuclear power** (open to the private sector) and **strategic/defense-related** nuclear activities (retained by the DAE).

The Logic for Nuclear Expansion

1. The Limitations of Renewables

While India has made strides in solar and wind, these sources are intermittent. In 2024-25, **thermal power** (coal) provided **75%** of actual electricity generated despite being only 50% of installed capacity. Nuclear power is seen as the only viable **low-carbon baseload** (steady) power source that does not require the massive land and battery storage investments that solar/wind demand.

2. Electricity Consumption Gap

To reach the development levels of the OECD or China, India's per capita electricity generation (currently ~1,418 kWh) needs to rise nearly six-fold.

A Three-Front Nuclear Strategy

To achieve the 100 GW target, the analysis suggests focusing on three distinct areas:

A. Large-Scale Indigenous & Foreign Reactors

Indigenization: India's 700 MW Pressurised Heavy Water Reactors (PHWR) are among the cheapest to build globally ($2 million/MW).

Foreign Collaboration: Large projects with French (EdF) and American (Westinghouse) designs must be streamlined and indigenized to reduce costs from the projected $5 million/MW.

B. Small Modular Reactors (SMRs) for Industry

The government has allocated **₹20,000 crore** to develop five indigenous SMR models (5 MW to 200 MW).

Captive Power: Heavy industries (steel, cement, data centers) can replace fossil-fuel captive plants with 220 MW PHWR modular units, which have a proven track record in India.

C. Advanced Fuel Research

Thorium Utilization: Research into **Thorium cladding with HALEU** (High Assay Low Enriched Uranium) could allow India to tap into its massive thorium reserves earlier than the traditional "Breeder Reactor" route.

Challenges & Implementation "Nuts and Bolts"

Challenge	Requirement for Success
Financing	Adding 90 GW requires ~$200 billion; needs a robust model for private/foreign equity.
Regulation	Rules for single-unit captive reactors (exclusion zones) must be modified.
Fuel & Waste	Transparency is needed regarding the ownership of nuclear fuel and long-term waste management.
Public Perception	An autonomous and transparent regulator is crucial to maintain safety standards and public trust.

Need for Reforms in Nuclear Governance in India

Ambitious Capacity Targets: India aims to expand nuclear capacity from 8.8 GW to 22 GW by 2032 and 100 GW by 2047, but NPCIL alone lacks the capital, manpower, and execution capacity to meet these goals.

Large Financing Gap: Achieving 100 GW requires about Rs 15 lakh crore, while Budget 2025–26 provides only Rs 20,000 crore, making private investment essential to mobilise long-term capital.

Project Delays: NPCIL projects like Kudankulam Units 3–6 face chronic delays; private players can improve project management and Engineering, Procurement, and Construction (EPC) efficiency.

Technology and Innovation Needs: Private participation can accelerate adoption of SMRs, advanced reactors, and global best practices, improving safety and scalability.

Weak Uranium Supply Chains: Limited domestic production and Government-to-Government (G2G) imports necessitate private involvement in uranium mining, processing, and imports for fuel security.

Energy Security and Climate Goals: Enhanced focus on nuclear power supports grid stability and net-zero 2070, complementing renewables with low-carbon baseload power.

What Measures are Required to Strengthen Nuclear Governance in India

Regulatory Independence: AERB operational independence must be strengthened through transparent appointments, financial autonomy, and protection from executive interference.

Rebalance Safety and Investment Incentives: Liability caps should be periodically reviewed and indexed to inflation and risk, ensuring investor confidence does not come at the cost of public safety and the "polluter pays" principle.

Build Public Trust Through Transparency: Mandatory disclosure of safety audits, accident reporting protocols, and emergency preparedness plans is essential to address public concerns rooted in past industrial disasters.

Centre–State Coordination in Emergency Response: Clear protocols are needed for coordination between the Centre, States, and local authorities during nuclear emergencies, especially as private operators enter the sector.

Waste Management and Decommissioning Frameworks: Clear, enforceable norms for long-term waste disposal and plant decommissioning must be laid down before large-scale private expansion.

Conclusion

The SHANTI Act is a "tectonic shift" that moves India away from the restrictive policies of the mid-20th century. By opening the sector to private capital and focusing on modular technology, India is positioning nuclear energy as the backbone of its green transition. However, the path to 100 GW depends entirely on the notification of supportive rules—the legislative "spirit" must now be matched by administrative "speed" to ensure that nuclear power becomes an economically viable reality for the Indian private sector.