Currently – 28th November 2026

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- **INS Vindhyagiri: Final Nilgiri-Class Frigate — The Hindu — GS III: Defence**
- **India Likely to Miss 2026 Measles Elimination Target — The Indian Express — GS II: Health**
- **India's Place in the Emerging Global Energy Order — Source not specified — GS III: Energy Security, Environment**
- **Early-Life Sugar Restriction Linked to Lower Cancer Risk — The Hindu — GS II: Health and Nutrition**
- **China Tests New Taiwan Landing Tactics — Reuters — GS II: International Relations; Places in News**

GOVT EYES 2029 ROLLOUT FOR WOMEN'S RESERVATION IN PARLIAMENT, ASSEMBLIES

50% seat hike, 25-year freeze: Centre back with delimitation, women Bill

Ahead of special sitting, Cabinet nod for Bill; inter-state ratio frozen until 2051, demarcation based on 2011 Census

Damini Nath & Liz Mathew
New Delhi, November 27

AHEAD OF the special sitting of Parliament next week, the Union Cabinet Friday cleared a Constitution amendment Bill tied to constituency delimitation and implementation of 33% reservation for women in Parliament and state legislatures.

The Constitution (One Hundred and Thirty-Second Amendment) Bill, 2026, cleared by the Cabinet at a meeting chaired by Prime Minister Narendra Modi, provides for increasing the maximum strength of Lok Sabha to 850 and of Assemblies to 650.

The Bill seeks to amend Article 334A, which pertains to reservation for women, by adding a proviso to increase the number of seats allocated to each state/UT in the Lok Sabha and the number of Assembly seats in each state/UT by 50% of the existing number – a key demand of some regional parties.

"Provided that for the purposes of giving immediate effect to such reservation, the

»CONTINUED ON PAGE 2

• WHAT'S NEW IN THE BILL



INCREASE IN THE MAXIMUM NUMBER OF LOK SABHA AND ASSEMBLY SEATS IN EACH STATE BY 50% OF EXISTING STRENGTH

INCREASING THE maximum number of Assembly seats in a state to 650 from 500

FREEZING ALLOTMENT of seats to states until after the relevant figures of the first Census taken after 2051 are published

INCLUDING THE Union Territory of Jammu and Kashmir in the definition of "state" for the purpose of elections to the post of President

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BEYOND NORTH AND SOUTH DIVIDE, SOME ISSUES PERSIST PAGE 8

Business as Usual
By EP UNNY



Dealt a blow by partners, INDIA bloc meets today; Congress, SP target BJP

Asad Rehman & Lalmani Verma
New Delhi, Lucknow, November 27

NOTWITHSTANDING THE divisions in the Opposition camp, the Congress on Friday signalled that it would continue to oppose the contentious delimitation-linked legislative package in Parliament. While the government is learnt to have revised the constitutional amendment Bill to insert a provision for a uniform 50 per cent increase in the number of the Lok Sabha seats across all states, the main Opposition party's prime concern now appears to be over the inevitable redrawing of the parliamentary constituencies.

Several Congress leaders who *The Indian Express* spoke to suggested that the real worry is the possibility of "politically-motivated gerrymandering".

While the Congress leadership met Friday to crystallise the party's position, a meeting of the INDIA bloc parties will take place Saturday to finalise

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Since April: Tweaked Bill, split Opp, Govt's pre-poll flex after protests

Deeptiman Tiwary & Alok Deshpande
New Delhi, Mumbai, November 27

SEVEN MONTHS after a united Opposition handed the Modi government a rare legislative defeat in Parliament, the Centre is set to make another attempt at getting its delimitation package passed. Much has changed in the intervening period, both in the legislation that the government proposes to bring and in the composition of the Opposition that defeated it in April.

The Constitution amendment Bill cleared by the Union Cabinet Friday incorporates two significant changes. It provides for a uniform 50% increase in Lok Sabha seats across states and seeks to freeze their relative representation in Parliament, based on the 1971 population, until 2051.

Both provisions address the principal concerns raised by southern parties, particularly the DMK,

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Delimitation, women quota Bill

delimitation so undertaken shall provide for an increase of fifty per cent in – (a) the number of seats allocated to each State and Union Territory in the House of the People; and (b) the total number of seats in the Legislative Assembly of each State and Union Territory, over and above the number of seats existing immediately before such delimitation," the Bill states.

It also freezes the allotment of Lok Sabha seats to states until the relevant figures of the first Census taken after 2051 are published, amending Article 81(3)(i) that currently freezes the seat allocation till the first Census taken after 2026. In the case of allocation of Assembly seats within states, the Bill proposes linking it to the "latest published census figures available on the date of the commencement of the Constitution (One Hundred and Thirty-second Amendment) Act, 2026", changing it from the present mention of 2001 Census.

"...the implementation of reservation of seats for women is linked to the constitutional scheme of readjustment in the allocation of seats in the House of the People and the Legislative Assemblies and re-drawing boundaries of territorial constituencies by the Delimitation Commission," Law Minister Arjun Ram Meghwal wrote in the statement of objects and reasons of the Bill.

Sources underlined that the delimitation exercise will increase Lok Sabha seats in all states by 50 per cent, and the current inter-state ratio of constituencies in both Houses of Parliament, based on the 1971 population, will be frozen until 2051. Constituencies will be demarcated on the basis of the 2011 Census.

Sources in the government said there will be three Bills for increasing the seats, keeping the ratio according to the 1971 Census, and for the demarcation of the constituencies, which will be on the basis of the 2011 Census. The constitution of the delimitation commission will be in the second Bill. The third Bill will be for the Union Territories.

The delimitation commission will be constituted immediately after Parliament clears the Bills and the reservation of seats for women will be implemented for the 2029 Lok Sabha elections. States will be clearing the Constitution amendment Bill simultaneously. The previous Bills, including the one in which women's quota was linked to the 2027 Census, will be withdrawn.

In the Bill, the reservation for women is 15 years. The seats reserved for women will rotate after every third term. Sources also said the government will bring a new Bill to keep the vote value in the current position for the Presidential elections.

The Constitution (One Hundred and Thirty-First amendment) Bill, 2026, which was introduced in April but failed to clear Lok Sabha with a two-thirds majority, did not have the provision for 50 per cent increase in the number of seats in all states. Along with that, the government had introduced the Delimitation Bill, 2026 as well, which now the Law Minister will be withdrawing to bring a new Bill, the Delimitation (Second) Bill, 2026.

"During the discussions on the Constitution (One Hundred and Thirty-first Amendment) Bill, 2026, concerns were expressed regarding the possible impact of the proposed delimitation exercise on the representation of different States in the House of the People, particularly in view of the variations in population growth across the country. The Government has examined these issues with a view to ensuring that the constitutional framework for the next delimitation exercise is clear, balanced and capable of addressing the concerns raised while preserving the representative character," the Minister wrote in the statement of reasons for withdrawal of the Delimitation Bill, 2026.

On Thursday, the government announced it had requested the presiding officers of both Lok Sabha and Rajya Sabha to reconvene to transact essential government business. The Lok Sabha will meet on November 30, and the Rajya Sabha on December 2.

1. DELIMITATION AND WOMEN'S RESERVATION BILL, 2026

Source: The Indian Express
GS II: Polity, Parliament and Federalism

Context: The Union Cabinet has cleared the Constitution (132nd Amendment) Bill, 2026, proposing a 50% increase in legislative seats and a revised delimitation framework to facilitate 33% women's reservation before the 2029 Lok Sabha elections.

1. Key Provisions of the 132nd Amendment Bill

1. **50% seat increase:** Lok Sabha and State Assembly seats in every State/UT to increase by 50% over existing strength; proposed maximum Lok Sabha strength: 850.
2. **1971 population:** Existing inter-State share of Lok Sabha seats to remain protected until after publication of the first Census conducted after 2051.
3. **2011 Census:** To be used for redrawing constituency boundaries.
4. **Women's reservation:** 33% reservation in Lok Sabha and State Assemblies, targeted for implementation in the 2029 elections.
5. **Rotation:** Reserved seats to rotate after every third term; proposed reservation period is 15 years.
6. **Fresh legislation:** A new Delimitation (Second) Bill will provide for the Delimitation Commission, alongside separate provisions for Union Territories.

2. April vs November 2026: 131st and 132nd Amendment Bills

April – 131st Amendment Bill	November – 132nd Amendment Bill
No uniform 50% seat increase across States	Uniform 50% increase proposed
No explicit legislative safeguard for existing inter-State seat proportions	1971-based inter-State ratio protected until after 2051
Women's reservation linked to the proposed 2027 Census and delimitation	Implementation targeted before 2029 elections
Accompanied by the original Delimitation Bill	Fresh Delimitation (Second) Bill proposed

3. Why Was the 131st Amendment Bill Defeated?

- **17 April 2026:** Failed to secure the required two-thirds majority in the Lok Sabha.
- **Voting:** 298 in favour and 230 against; 352 votes were required.
- **Lack of safeguards:** No explicit guarantee of a uniform 50% increase in seats across all States or protection of their existing relative representation.
- **Southern States' concerns:** Fear of losing political influence due to differences in population growth.

- **Gerrymandering:** Opposition concerns over politically motivated redrawing of constituencies.

4. Major Federal and Democratic Concerns

1. **Federal balance:** Protecting States that successfully stabilised their populations from losing relative representation.
2. **Political equality:** Balancing *one person, one vote, one value* with equitable representation among States.
3. **Gerrymandering:** Ensuring independent and impartial delimitation.
4. **Women's representation:** Ensuring meaningful political participation beyond numerical reservation.

5. UPSC Prelims PYQs

2012 – Delimitation Commission

Consider the following statements:

1. Orders of the Delimitation Commission cannot be challenged in a Court of Law.
2. Parliament or State Legislatures cannot modify these orders when they are laid before them.

(a) 1 only
(b) 2 only
(c) Both
(d) Neither

Answer: (c) Both

2024 – Nari Shakti Vandan Adhiniyam

1. Its provisions come into effect from the 18th Lok Sabha.
2. It will remain in force for 15 years.
3. It provides reservation for SC women within the SC quota.

(a) 1, 2 and 3
(b) 1 and 2 only
(c) 2 and 3 only
(d) 1 and 3 only

Answer: (c) 2 and 3 only.

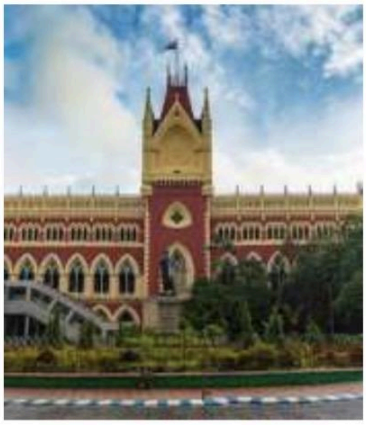
Ritabrata Banerjee loses post of Bengal Leader of Opposition

Shiv Sahay Singh
KOLKATA

The Calcutta High Court on Friday set aside the June 3 decision of the Speaker of the West Bengal Legislative Assembly to appoint Ritabrata Banerjee as the Leader of the Opposition and Akhruzzaman as the Opposition's Chief Whip.

Justice Krishna Rao said the decision was not sustainable under law, and directed the Speaker to reconsider these positions 'afresh' within 10 days in accordance with law.

Sobhandeb Chattopadhyay, MLA and Mamata Banerjee loyalist, had moved the court challenging the



Court directs Speaker to make fresh appointments in 10 days.

appointment. The Trinamool Congress won 80 of the 294 seats in the Assembly election, following which the party's general secretary, Abhishek Banerjee, had sent a letter to the Speaker on May 9 nominating Mr. Chattopadhyay as Leader of the Opposition. But a group of MLAs led by Mr. Ritabrata alleged that their signatures on the letter had been forged, after which Mr. Ritabrata and another MLA, Sandipan Saha, were expelled.

This led to a split in the party, with 58 MLAs supporting Mr. Ritabrata for the aforementioned post. On June 3, the Speaker, Rathindra Bose, appointed Mr. Ritabrata as Leader of the Opposition and Mr. Akhruzzaman as Chief Whip.

The court order gains significance with the Winter Session of the Assembly likely to begin on December 4.

2. CALCUTTA HIGH COURT SETS ASIDE APPOINTMENT OF WEST BENGAL LEADER OF OPPOSITION

Source: The Hindu
GS II: State Legislature, Parliamentary Procedures and Judicial Review

Context: The Calcutta High Court set aside the West Bengal Speaker's appointment of Ritabrata Banerjee as Leader of the Opposition (LoP), directing fresh consideration within 10 days.

1. Background and Court's Decision

1. On June 3, 2026, the Speaker appointed Ritabrata Banerjee as LoP and Akhrurzzaman as Opposition Chief Whip.
2. Sobhandeb Chattopadhyay challenged the appointments before the Calcutta High Court.
3. A group of MLAs supporting Ritabrata alleged that their signatures on the supporting letter had been forged, triggering a party dispute.
4. **High Court ruling:** Justice Krishna Rao set aside the appointments as legally unsustainable and directed the Speaker to reconsider both positions within 10 days.

2. Legal Framework Governing the Leader of the Opposition

A. Constitutional position

- The Constitution does not expressly provide for the office of the Leader of the Opposition.
- The office derives recognition from parliamentary and State-level legislation and conventions.

B. West Bengal – Bengal Legislative Assembly (Members' Emoluments) Act, 1937

- **Section 3, Explanation I:** Defines the LoP as the leader of the opposition party having the greatest numerical strength in the Assembly.
- **Explanation II:** The Speaker decides disputes regarding which opposition party has the greatest strength and who leads it. The decision, certified in writing, is final and conclusive for the purposes of the Act.

C. Parliament – Salary and Allowances of Leaders of Opposition in Parliament Act, 1977

- **Section 2:** Defines the LoP in the Lok Sabha and Rajya Sabha as the leader of the opposition party having the greatest numerical strength, recognised by the Speaker or Chairman, respectively.
- Provides statutory recognition and salary and allowances to the office-holder.

3. Judicial Precedent

Karpoori Thakur v. State of Bihar (1982) – Patna High Court

- Examined the recognition of the Leader of the Opposition and the relevance of the one-tenth membership convention.
- Observed that recognition involves both the greatest numerical strength and the applicable legislative practice.
- The one-tenth criterion was treated as a convention in the context of the case, not an express constitutional requirement.

4. Significance for Parliamentary Democracy

1. **Accountability:** The LoP provides an institutional voice to the opposition and strengthens legislative scrutiny of the government.
2. **Speaker's impartiality:** Recognition of opposition leadership must follow the applicable law and legislative procedure.
3. **Judicial review:** The case illustrates the role of High Courts under Article 226 in examining the legality of decisions affecting legislative rights.
4. **Democratic functioning:** A recognised opposition leadership promotes debate, checks executive dominance and strengthens parliamentary democracy.

Seventh Nilgiri-class stealth frigate handed over to Navy

The Hindu Bureau
NEW DELHI

The Indian Navy on Friday received *Vindhyagiri*, the seventh and final ship of the Nilgiri-class (Project 17A) stealth frigates, from Garden Reach Shipbuilders and Engineers Ltd. (GRSE) in Kolkata, marking the completion of the Project 17A ship delivery programme and a significant milestone in India's indigenous warship construction capabilities.

With *Vindhyagiri*'s delivery on Friday, all seven ships under the programme have been handed over to the Navy within 23 months of the delivery of the first ship, *INS Nilgiri*, on December 20, 2024, the Defence Ministry said.



A view of the 3rd Project 17A frigate, *Vindhyagiri*, as GRSE hands it over to the Indian Navy in Kolkata on Friday. ANI

Combat capabilities

Designed by the Navy's Warship Design Bureau and overseen by the Warship Overseeing Team in Kolkata, the Project 17A frigates represent a generational leap in indigenous warship design, stealth, survivability and combat capabilities.

The multi-mission platforms are equipped with an advanced suite of weapons and sensors, enhancing their capabilities across anti-surface, anti-air and anti-submarine warfare domains. They also feature Combined Diesel or Gas (CODOG) propulsion systems, comprising a diesel engine and a gas turbine, along with an Integrated Platform Management System. With an indigenous content of 75%, the Project 17A programme involved more than 200 micro, small and medium enterprises (MSMEs). It generated employment for approximately 4,000 personnel directly and over 10,000 indirectly.

3. SEVENTH NILGIRI-CLASS STEALTH FRIGATE VINDHYAGIRI HANDED OVER TO INDIAN NAVY

Source: The Hindu | **GS III:** Defence Technology and Maritime Security

Context: The Indian Navy received INS Vindhyagiri, the seventh and final ship under Project 17A, completing the Nilgiri-class stealth frigate delivery programme.

1. Key Developments

1. **INS Vindhyagiri:** Delivered by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.
2. All seven frigates were delivered within 23 months of INS Nilgiri's delivery on 20 December 2024.
3. **Indigenous content:** Approximately 75%, involving over 200 Micro, Small and Medium Enterprises (MSMEs).
4. Employment: Around 4,000 direct and over 10,000 indirect jobs.

2. Seven Nilgiri-Class Frigates – Project 17A

1. INS Nilgiri
2. INS Himgiri
3. INS Udaygiri
4. INS Dunagiri
5. INS Taragiri
6. INS Mahendragiri
7. INS Vindhyagiri

Shipyards: Mazagon Dock Shipbuilders Limited (MDL), Mumbai – 4 ships; GRSE, Kolkata – 3 ships.

3. Combat Capabilities and Technology

1. **Multi-role warfare:** Equipped for anti-air, anti-surface and anti-submarine warfare.
2. **Stealth technology:** Reduces radar, infrared and acoustic signatures to make detection by enemy surveillance systems difficult.
3. **CODOG propulsion:** Combined Diesel or Gas system, using a diesel engine and a gas turbine.
4. **Integrated Platform Management System (IPMS):** Monitors and controls major onboard machinery and systems.

Stealth Technology – Key Concepts

- **Radar Cross-Section (RCS):** Measures radar reflectivity; lower RCS makes detection more difficult.
- **Radar-Absorbing Materials (RAM):** Absorb part of incoming radar energy.
- **Acoustic signature reduction:** Minimises noise and detection by sonar.
- **Infrared signature reduction:** Reduces heat emissions detectable by infrared sensors.

4. Strategic Significance

1. Strengthens India's maritime security and operational capabilities in the Indian Ocean Region.
2. Promotes indigenous warship construction and defence self-reliance.
3. Strengthens domestic shipyards, MSMEs and defence manufacturing supply chains.

5. UPSC Prelims PYQs

PYQ 1 – UPSC 2026: Stealth Technology

Consider the following statements:

1. Stealth objects have a very small Radar Cross-Section (RCS) and are coated with Radar-Absorbing Material (RAM).
2. Stealth objects can be detected using specific frequencies.
3. Stealth objects are coated with metamaterials to increase the scattering of electromagnetic radiation.

Which of the statements given above are correct?

(a) 1 only
(b) 2 and 3 only
(c) 1 and 2 only
(d) 1, 2 and 3

Answer: (c) 1 and 2 only.

PYQ 2 – UPSC 2016: INS Astradharini

Which one of the following is the best description of INS Astradharini?

(a) Amphibious warfare ship
(b) Nuclear-powered submarine
(c) Torpedo launch and recovery vessel
(d) Nuclear-powered aircraft carrier

Answer: (c) Torpedo launch and recovery vessel.

Despite high immunisation numbers, India likely to miss 2026 measles elimination target: WHO experts

Anonna Dutt
New Delhi, November 27

DESPITE "EXTRAORDINARY gains" in immunisation, India is likely to miss the World Health Organization's regional target of eliminating measles by 2026, according to WHO experts.

What is significant, however, is that despite 23 million births annually, India has brought itself out of the list of the 10 countries with highest number of unvaccinated children for the first time since estimates began in 2001.

Speaking on the sidelines of the release of the Progress Toward Measles Elimination Report (2000-2025), the experts underscored it's time India does not take the foot off the pedal.

Measles is one of the most contagious infections that usually causes fever, rashes, and respiratory symptoms. It can also result in more serious complications such as pneumonia and brain swelling.

WHO and UNICEF data show that India achieved 98% coverage for the first dose of measles-containing vaccine and 95% for second dose — levels experts consider necessary to stop indigenous transmission of cases. "India has made absolutely extraordinary gains in immunisation, including against measles. This improvement has been very hard earned and invested in over many years. And, the investments are now paying off," said Dr Kate O'Brien, the Director of the Department of Immunization, Vaccines and Biologicals, WHO.

She underlined the need for countries like India, that have achieved very high vaccination coverage, to sustain that momentum. "This also means trying to identify those small subnational populations, pockets of children, that still remain unreached for whatever reason. Until the country is reaching everyone regardless of size of community and distance from health facility, the country will continue to remain at risk of measles cases," she said.

Following a dip in immunisation during the pandemic years, India witnessed an outbreak in 2022 and 2023, with the highest number of cases since 2000 being reported during 2023. The country reported comparatively fewer measles cases in 2025— 17,995 against 65,150 in 2023—the number continues to be significant.

Yet, experts believe, the spread of indigenous measles cases may be stopped by 2029. "If you look at number of cases in 2026," said Dr Santosh Gurung, Technical Officer, Measles and Rubella Control, WHO, "it is still a high number. This is again in pockets and certain areas within the country ... however, the elimination target for 2026, the regional timeline for measles and rubella elimination, will not be met. But there is a progress towards making an interruption by 2029 and then moving towards verification in 2032."

Countries have to demonstrate prevention of indigenous transmission of measles for a period of three years before they can be designated measles-free.

India's vaccination coverage remains above the global average of 84% for the first dose and 77% for the second. Globally, 10 million people were affected and 72,000 died of the infection in 2025—a decline of 74% and 91 per cent, respectively, as compared to 2000. An estimated 60 million lives were saved due to measles vaccination since 2000, according to the report.

India's progress is more significant considering it comes in the backdrop of countries such as the United States losing their measles elimination status, with outbreaks following a drop in immunisation levels. There was an eight-fold rise in the number of cases in the Americas since 2000, with 73,000 people infected in 2025, the report said.

With 29 million children around the world remaining without any or with imperfect protection against measles, Diana Chang Blanc, Unit Head of Essential Programme on Immunization at WHO, said misinformation and disinformation are problems that have emerged.

She said: "There has been an upscaling of social media and a bombardment of messages that are confusing to parents. How much of this 29 million can be attributed to misinformation we do not know, but it is having an effect."

4. INDIA LIKELY TO MISS 2026 MEASLES ELIMINATION TARGET: WHO

Source: The Indian Express | **GS II:** Health and Immunisation

Context: Despite improved vaccination coverage, India is likely to miss the WHO's 2026 regional measles elimination target due to continuing transmission and immunisation gaps.

1. India's Progress

- First-dose vaccination coverage: **98%**; second-dose coverage: **95%**.
- Measles cases declined from **65,150 (2023) to 17,995 (2025)**.
- India exited the list of the 10 countries with the highest number of unvaccinated children for the first time since 2001.

2. Global Situation

- Around **29 million children** globally remain unvaccinated or inadequately protected.
- Global vaccination coverage: **84% (first dose)** and **77% (second dose)**.
- Estimated **10 million cases and 72,000 deaths** worldwide in 2025.

3. Why Is India Likely to Miss the Target?

1. Uneven vaccination coverage and pockets of unvaccinated children.
2. Disruption of routine immunisation during COVID-19.
3. Vaccine hesitancy and misinformation.
4. Continued indigenous transmission despite improved national coverage.

4. Measles Elimination and India's Timeline

- **Disease:** Highly contagious viral infection transmitted through airborne respiratory particles.
- **Prevention:** Two doses of measles-containing vaccine.
- **WHO benchmark:** At least three consecutive years without indigenous transmission, supported by surveillance and verification.
- **2026:** Original regional elimination target.
- **2029:** Expected interruption of indigenous transmission in India.
- **2032:** Expected verification of elimination.

5. Way Forward

1. **Universal Immunisation:** Ensure timely administration of both vaccine doses to every eligible child.
2. **Targeted Vaccination:** Identify and cover unvaccinated and under-vaccinated children, particularly in high-risk pockets.
3. **Stronger Surveillance:** Improve case reporting, laboratory testing and rapid outbreak response.
4. **Community Engagement:** Counter vaccine hesitancy and misinformation through health workers and trusted community leaders.
5. **Health-System Strengthening:** Ensure reliable vaccine supply, cold-chain facilities and coordination between Centre and States.

India's place in the emerging global energy order



Mahesh Sachdev

Retired Indian Ambassador, specialising in West Asian and energy issues

During this decade, strong cross currents have buffeted the global energy system, causing humongous turbulence. These include the COVID-19 pandemic, the El Niño effect and climate change, the geoeconomics of wars in Ukraine and the Gulf, renewables and the shale phenomenon. Their impact has exposed the inadequacy and the unsustainability of the current fossil fuel-based energy order. The dire and chaotic situation necessitates the invention of a new global energy order. Although its contours are hazy, they are likely to be shaped by concerns for energy's improved availability, self-sufficiency, security, affordability and environmental friendliness.

A world of energy inequalities, disruptions

The current global energy ecosystem cuts across the following major fault lines. Global energy is a complex function of the rise in global population and energy intensity. Overall energy demand has tripled during the past half a century, with rampant growth in China (a 10-fold increase) and Asia. Yet, 720 million people lack electricity and two billion cook on polluting fuels. At the other extreme, gigawatt-sized data centres are sprouting. Due to global warming, the world now expends more energy cooling than heating. This energy disparity has concomitant development costs for the "South".

Historically, man has sourced energy largely from nature and fossil fuels, concentrated in some geographies. In 2025, fossil fuels accounted for approximately 86.2% (oil 33.5%, coal 27.7%, natural gas 25.1%) of total global primary energy supply, while low-carbon sources made up the remaining 13.8% (renewables 5.9%, nuclear 5.2%, and hydro 2.7%). This high dependence on fossil fuels has been problematic, causing supply bottlenecks, climate change, pollution, the resource curse and wars. Global warming (a "hoax" to some diehards) in the past two centuries is largely anthropogenic, caused by fossil fuel-burning; we are warned that average global temperatures rising by more than 1.5°C would cause irreversible damage. Yet, the current trend would lead to global temperatures rising by 2.5°C by 2100. The recent failure of COP31 over fossil fuel phase-out and clean technology funding mechanisms underlines this dilemma.

The ongoing wars in central Europe and the Gulf, major hydrocarbon exporting regions, have disrupted an already high-strung global energy situation. In particular, the United States-Israel war against Iran has stymied the Strait of Hormuz, the passage for nearly a fifth of global maritime transport of oil and gas. These wars have so far led to a cumulative loss of 2.8 billion barrels of crude and 60 billion cubic metres of natural gas. The effects of the crisis are global: three-quarters of the world's population live in oil- and gas-importing countries, while more than four billion people live in countries that depend on the Strait of Hormuz for over 30% of their oil supplies.

The country must balance rising energy demand with security and sustainability

Before the Iran war, most of the hydrocarbons and derivatives crossing the Strait of Hormuz were headed to Asia. The remainder mostly met Africa's basic needs. The crisis worsened the vulnerabilities of two continents, particularly in transportation and agriculture. These two conflicts continue, defying all peace-making attempts, causing supply and price turbulence to this vital commodity. In its recently published annual World Energy Outlook (WEO), the International Energy Agency (IEA) called 2026 "a year of unprecedented disruption", describing the Strait of Hormuz crisis as "the largest threat to energy security in history".

The global energy transition

Some hopeful signs mitigate these three foreboding factors. Jolted by years of disruption, the world is now prioritising energy security along two broad axes. First, electricity's share in the energy milieu is set to rise, particularly in the transportation sector. Electricity currently constitutes 23% of global final energy demand; the WEO expects its share to reach 30% by 2035 and accelerate subsequently. The increase in electricity share comes with greater efficiency in power generation and downstream appliances.

Second, in a force-multiplier effect, renewables and low-emission sources are rapidly replacing fossil fuels for power generation. With improved efficiency and better storage, the renewables' share in global electricity generation is expected to rise from a third today to half by 2035. The WEO notes that since 2022, energy-consuming economies have invested $500 billion annually in renewables and energy efficiency measures, and the current crisis would boost this further. The energy crisis has also reversed nuclear energy's decline, and nearly 90 GW of generation capacity is currently under construction. While coal's share may rise in the short run due to the crisis, it would start declining from 2030 as more renewables come online.

During the next decade, power distribution would require laying 25 million kilometres of new power lines and upgrading 15 million km of existing ones. On the other hand, on average, $540 billion has been invested annually in the upstream hydrocarbons sector, but 90% of it is to offset the decline in production. While an oil glut may emerge once the crisis abates, the localised shortages of natural gas are likely to persist.

Depending upon the relative intensity of national responses to the energy conundrum, the IEA believes that many of the steps initiated would lead to an irreversible decline in hydrocarbon consumption. It has reiterated its forecast that the global oil demand may peak by 2035.

The WEO, nevertheless, contends that even the most vigorous short-term measures to tackle the current energy crisis may prove insufficient to arrest climate deterioration, and urges long-term plans for a resilient future.

India's rising energy appetite

India is destined to play a prominent role in the emerging global energy order. It is currently the world's third-largest primary energy consumer, with a 6.1% share. India is the second-largest consumer of coal, and ranks as the third-largest power producer, consumer of crude and in renewable capacity. At the micro level, though, the average Indian has been energy thrifty: for instance, India's annual electricity consumption of 1,153 units is a third of the global average. Reflecting its world-beating GDP growth, India's energy demand is projected to gallop by an annual average of 2.5% annually through 2035 – three times the global rate. Its energy appetite is being fuelled by rising incomes, urbanisation, industrial expansion, transport (12,000 new cars added daily), and cooling (200 million new air conditioners). The IEA projects that India will be the world's largest driver of energy demand growth through 2035.

While India's energy canvass is large and expanding, the granular picture is quite mixed. Despite valiant efforts towards greater self-sufficiency, India remains an energy-short economy. It currently imports around 40% of its energy demand, including 90% of its crude oil and 50% of its natural gas, and these dependencies are likely to grow. Electricity currently accounts for 22% of India's total final energy consumption, and this share is likely to double by 2047 as demand grows by 6% annually.

Although its renewable capacity has crossed half of its power generation, 70% of its total electricity is still generated from fossil fuels. During the 2025-35 decade, oil demand is expected to rise by 1.3 mbpd (26%), coal output by nearly 30%, and average annual energy investment is forecast to reach $200 billion, up 85% from 2025 levels. To move closer to the stated ambition of "energy independence by 2047", India would need to de-emphasise its oil and gas requirements, accelerate electrification and dramatically improve energy efficiency. If done right, a comprehensive energy strategy would not only attain long-term energy independence; it would also catalyse overall economic growth and help clean up the environment.

5. INDIA'S PLACE IN THE EMERGING GLOBAL ENERGY ORDER

Author: Mahesh Sachdev | **GS III:** Indian Economy, Energy Security and Environment

Context: Geopolitical conflicts, climate change and energy disruptions are reshaping the global energy order, making energy security, affordability, self-sufficiency and sustainability central priorities for India.

1. Global Energy Challenges

1. **Energy inequality:** Around 720 million people lack electricity, while nearly 2 billion rely on polluting fuels for cooking.
2. **Fossil-fuel dependence:** In 2025, fossil fuels accounted for approximately 86.2% of global primary energy supply.
3. **Geopolitical disruptions:** Wars in Europe and the Gulf, particularly the Strait of Hormuz crisis, have disrupted oil and gas supplies.
4. **Climate concerns:** Continued fossil-fuel consumption increases emissions and threatens the 1.5°C climate target.

2. Emerging Global Energy Transition

1. **Electrification:** Electricity's share in global final energy demand is expected to increase from 23% to 30% by 2035.
2. **Renewables:** Renewable and low-emission sources are expected to increase their share in global electricity generation from one-third to nearly half by 2035.
3. **Energy efficiency:** Investment in efficient power generation, appliances and storage can reduce overall energy demand.
4. **Infrastructure:** The transition requires expansion of power grids, transmission lines and distribution networks.
5. **Natural gas:** Geopolitical disruptions may accelerate the shift towards alternative energy sources, although local gas shortages may persist.

3. India's Rising Energy Demand

- India is the **world's third-largest primary energy consumer**, with a 6.1% share.
- It is the second-largest consumer of coal and the third-largest producer and consumer of crude oil.
- Energy demand is projected to grow by **2.5% annually through 2035**, around three times the global rate.
- India imports around **40% of its energy demand**, including 90% of crude oil and 50% of natural gas.
- Nearly half of electricity generation comes from fossil fuels; coal remains a major source.
- Electricity consumption is projected to double by 2047.

4. Challenges to India's Energy Security

1. **Import dependence:** Exposure to international price fluctuations and geopolitical conflicts.
2. **Coal dependence:** Around half of electricity generation continues to rely on fossil fuels.
3. **Rising demand:** Urbanisation, industrialisation, transport and cooling requirements are increasing consumption.

4. **Infrastructure gaps:** Expansion of renewable energy requires stronger transmission, storage and distribution systems.
5. **Energy affordability:** Balancing affordable energy access with investment in cleaner sources remains difficult.

5. Way Forward

1. **Diversify energy sources:** Reduce excessive dependence on imported oil and gas through a balanced energy mix.
2. **Accelerate renewables:** Expand solar, wind, nuclear and other low-carbon energy sources.
3. **Improve energy efficiency:** Promote efficient appliances, industrial processes and energy-saving technologies.
4. **Strengthen infrastructure:** Invest in power grids, energy storage and transmission networks.
5. **Promote strategic resilience:** Build strategic reserves, diversify import routes and suppliers, and strengthen domestic energy production.

Key Takeaway: India must balance rising energy demand with energy security and environmental sustainability. A comprehensive strategy combining renewables, electrification, efficiency and diversified energy supplies can support the goal of **energy independence by 2047**.

Sugar restrictions linked to lower cancer risk, finds study

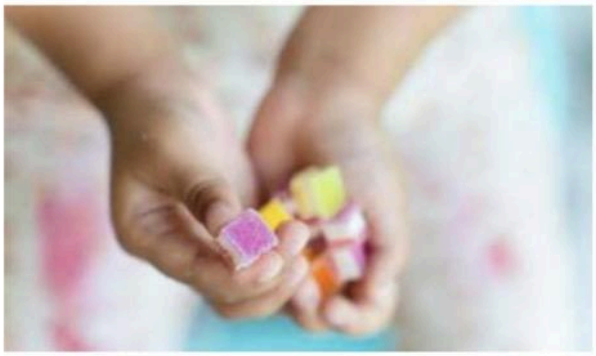
Reduced sugar exposure in the first 1,000 days of life linked to lower cancer risk and 2.2 fewer years of biological ageing; U.K.-based study studied people born during wartime sugar rationing

Ramya Kannan
CHENNAI

Reducing sugar exposure during the first 1,000 days of life is associated with a substantially lower cancer risk decades later, and a slower biological ageing process, a U.K.- based study showed.

A paper titled "Early-life sugar restriction causally reduces adult cancer incidence and slows biological aging", published in the journal *PNAS*, analysed 64,761 adults in the UK Biobank – a database of biomedical information on 5,00,000 participants in the United Kingdom. The analysis picked people born between 1951 and 1956, which includes those born during the period of sugar rationing in the U.K.

People whose first 1,000 days occurred during sugar rationing had 36% to 69% lower incidence of liver/intrahepatic bile duct, rectal, prostate, breast, and lung cancers later. There were markers that indicated that these people had 2.2 fewer years of biological ageing, and they were left with persistent healthier eating habits, even 50 years later.



Habitual free sugar intake in infancy is linked to chronic inflammation and oxidative stress, says expert. GETTY IMAGE

Sugar rationing in the U.K. was imposed during the Second World War, beginning in the early 1940s and ending in 1953. The government restricted sugar and sweets through ration books. It limited adults to roughly 40 grams of sugar per day and children to under 15 grams per day, while children under age of two received no sugar or sweets allocation.

The researchers uncovered two pathways through which this early-life exposure influences the life course. "First, a behavioral pathway: People on ration consume less sugar, eat smaller quantities, and maintain healthier, more diverse diets five decades later," they said in the paper. They also found a biological pathway: those who went through sugar rationing in the early period of their lives exhibited longer leukocyte telomere, or the length of the protective DNA-protein cap at the ends of chromosomes inside a white blood cell, meaning ageing had slowed down.

An earlier paper in *Nature Communications*, examining the impact of the sugar rationing on biological ageing and mortality, recorded the origins of these experiments. "The Developmental Origins of Health and Disease (DOHaD) hypothesis had proposed that the first 1,000 days of an individual's life, from conception, intra-uterine exposure and early development through the second year of life, represents a critical time frame when a variety of environmental exposures profoundly and permanently influence the developmental health and well-being outcomes of that individual."

Meenakshi Bajaj, a medical nutrition therapist at the Government General Hospital in Chennai, said: "We know that a mother's diet during pregnancy influences foetal growth, organ development, and metabolic programming." The period from conception to a child's second birthday, often referred to as the first 1,000 days, is a critical window during which nutrition can shape growth and long-term health outcomes, she said.

"Habitual exposure to free sugars in infancy and early childhood has been associated with chronic low-grade inflammation and oxidative stress," she explained, adding that these processes contribute to insulin resistance, dyslipidaemia, hypertension, and even cardiovascular disease. It is a truly "pocket- and metabolic health-friendly" initiative backed by evidence of benefits for across the entire lifespan, Dr. Bajaj said.

6. EARLY-LIFE SUGAR RESTRICTION LINKED TO LOWER CANCER RISK

Source: The Hindu | **GS II:** Health, Nutrition and Human Development

Context: A UK-based study published in *PNAS* found that reduced sugar exposure during the first 1,000 days of life is associated with lower cancer incidence and slower biological ageing in adulthood.

1. Key Findings of the Study

- Analysed **64,761 adults** from the UK Biobank, born between 1951 and 1956.
- People exposed to sugar rationing during early life showed **36–69% lower incidence** of liver/intrahepatic bile duct, colorectal, prostate, breast and lung cancers.
- They also showed markers of **2.2 fewer years of biological ageing**.
- Healthier eating habits persisted even decades after the rationing period.

2. Evidence from UK Sugar Rationing

- Sugar rationing during the Second World War continued until 1953.
- Adults were limited to approximately **40 grams of sugar per day** and children under 15 to **15 grams per day**.
- Children below two years received no sugar or sweets allocation.
- The study used this historical variation in sugar exposure to examine long-term health outcomes.

3. How Does Early-Life Sugar Exposure Affect Health?

The study identifies two pathways:

1. **Behavioural pathway:** Lower early-life sugar exposure may encourage reduced sugar consumption and healthier dietary habits later in life.
2. **Biological pathway:** Reduced exposure may influence cellular ageing, including longer leukocyte telomeres—the protective caps at the ends of chromosomes.

- The first **1,000 days (conception to the second birthday)** are a critical period for nutrition and long-term health.
- Excessive free-sugar consumption in infancy is associated with inflammation and oxidative stress, contributing to metabolic disorders.

4. Significance for Public Health

1. **Preventive healthcare:** Early nutrition can influence the risk of non-communicable diseases in adulthood.

2. **Maternal nutrition:** A mother's diet during pregnancy influences foetal growth and metabolic development.
3. **Child nutrition:** Promoting healthy diets during infancy can support long-term health outcomes.
4. **Disease prevention:** Reducing excessive free-sugar intake may help address obesity, diabetes and cardiovascular risk.

5. Way Forward

1. **Maternal nutrition:** Promote balanced diets and nutrition awareness during pregnancy.
2. **Infant feeding:** Encourage appropriate complementary feeding and avoid added sugars in early childhood.
3. **Public awareness:** Educate parents about the long-term health effects of excessive sugar consumption.
4. **Food environment:** Encourage healthier food choices and reduce children's exposure to high-sugar processed foods.
5. **Preventive healthcare:** Integrate early-childhood nutrition monitoring into maternal and child health programmes.

Chinese military tests new Taiwan landing tactics in coastal drill

Reuters
TAIPEI/HONG KONG

China is staging a weeks-long amphibious landing drill in the province facing Taiwan, testing a new method to land troops ashore by linking civilian vessels into a makeshift floating bridge, satellite images and a research report showed.

The exercise, in Dacheng Bay in China's southeastern province of Fujian, was first spotted on November 1, according to satellite images and a report by geospatial data company ingeniSPACE reviewed by Reuters.

"The People's Liberation Army appeared to be rehearsing low-signature methods to provide logistical support to forces that could be involved in a first island chain invasion scenario," said Jason Wang, the company's chief operating officer.

A senior security official briefed on the drill in Dacheng Bay confirmed it was still in progress.



7. CHINA–TAIWAN: PLACES IN NEWS

Source: Reuters | **GS II:** International Relations | **GS I:** World Geography

Context: China conducted an amphibious military drill in Fujian Province, testing troop-landing tactics amid tensions with Taiwan.

1. Important Locations

- **Fujian:** Coastal province of southeastern China, facing Taiwan.
- **Dacheng Bay:** Located on the Fujian coast; site of the reported military exercise.
- **Taiwan Strait:** Separates mainland China (west) from Taiwan (east); connects the East China Sea (north) with the South China Sea (south).

2. Islands in the Taiwan Strait

- **Kinmen (Quemoy):** Taiwan-administered islands close to Xiamen, China.
- **Matsu:** Taiwan-administered islands near the Fujian coast.
- **Penghu (Pescadores):** Taiwan-administered archipelago in the Taiwan Strait, west of Taiwan's main island.

3. East China Sea Dispute

Senkaku / Diaoyu / Diaoyutai Islands

- Located in the East China Sea, northeast of Taiwan.
- Administered by Japan; claimed by China and Taiwan.
- Known as Senkaku (Japan), Diaoyu (China) and Diaoyutai (Taiwan).