

10/04/2026 Daily Current Affairs

1. *Methanol bunkering:*

Context: Deendayal Port Authority (Kandla Port) has advanced its methanol bunkering capabilities, positioning itself as a key player in India's energy transition efforts and global green shipping corridors.

What is Methanol bunkering?

- ❖ Methanol bunkering: Refueling ships with methanol instead of conventional marine fuels.
- ❖ Fuel type: Methanol is a cleaner-burning alternative fuel used in maritime transport.
- ❖ Process: Involves safe storage, handling, and transfer of methanol to ships at ports.
- ❖ Purpose: Reduces greenhouse gas emissions and air pollutants compared to traditional fuels.
- ❖ Significance: Supports green shipping and decarbonization of the maritime sector.

About Kandla port:

- ❖ Deendayal Port (formerly Kandla Port) is the second largest seaport of India.
- ❖ Located in Kachchh district in western India.
- ❖ Situated in the Kandla Creek, about 90 km from the Gulf of Kachchh.
- ❖ It is a protected natural harbor.
- ❖ Recognized as one of India's major ports.
- ❖ Developed in the 1950s after the Partition of India to replace reliance on Karachi Port.
- ❖ Located ~256 nautical miles southeast of Karachi Port and ~430 nautical miles north-northwest of Mumbai Port.
- ❖ Specializes in handling bulk cargo, including liquid cargo.
- ❖ Has 18 berths (12 dry cargo berths and 6 oil jetties).
- ❖ Handles cargo like petroleum, chemicals, iron ore, salt, and containers.
- ❖ It is India's largest state-owned cargo handling port by volume.
- ❖ Faces competition from Mundra Port, a major private port nearby.

2. *Hydrofluorocarbons (HFCs):*

Context: Ministry of Environment, Forest and Climate Change directed all state and Central authorities to stop granting environmental clearances for HFCs production for new or additional HFC production beyond December 31, 2027. This direction is in line with India's commitments under the Kigali Amendment.

What are Hydrofluorocarbons (HFCs)?

- ❖ Hydrofluorocarbons (HFCs) are man-made organic compounds containing carbon, hydrogen, and fluorine.
- ❖ They are widely used in refrigeration, air conditioning, insulating foams, aerosols, and fire suppression systems.
- ❖ HFCs were introduced as substitutes for ozone-depleting substances under the Montreal Protocol.
- ❖ They do not significantly deplete the ozone layer compared to CFCs.
- ❖ However, HFCs are potent greenhouse gases with very high global warming potential (GWP).
- ❖ Some HFCs can have warming effects thousands of times greater than carbon dioxide.
- ❖ They are short-lived climate pollutants with atmospheric lifetimes of about 15–29 years.

- ❖ Emissions mainly occur due to leakage, poor maintenance, or disposal of equipment.
- ❖ Their increasing concentration is a growing concern for global warming and climate change.

About Kigali Amendment:

- ❖ The Kigali Amendment is a legally binding agreement to phase down Hydrofluorocarbons (HFCs).
- ❖ It was adopted on 15 October 2016 in Kigali and came into force on 1 January 2019.
- ❖ As of 2025, over 170 countries and the European Union are parties to the agreement.
- ❖ It emerged from concerns about the high global warming potential of HFCs, despite their low ozone depletion impact.
- ❖ Builds upon the Montreal Protocol (1987), which phased out CFCs.
- ❖ Aims to reduce global HFC consumption and production by 80–85% by the late 2040s.
- ❖ Expected to help avoid up to 0.5°C of global temperature rise by 2100.
- ❖ Provides differentiated timelines for developed and developing countries (equity-based approach).
- ❖ Supports transition to low-global-warming refrigerants with financial assistance via the Multilateral Fund.
- ❖ Includes compliance mechanisms, periodic reviews, and flexibility provisions (e.g., temperature waiver for hot countries).

3. "Land inequality in India: Nature, history, and markets" report:

Context: It is the report released by World Inequality Lab on Land Inequality in India.

Highlights of the report:

- ❖ Extreme Wealth Concentration: Top 10% of rural households own about 44% of total land.
- ❖ High Landlessness: Nearly 46% of rural households are completely landless.
- ❖ Severe Inequality: Village-level land Gini coefficient is very high at 71.1.
- ❖ Dominant Landholders: Largest landowner in a village controls around 12.4% of land.
- ❖ Regional Variation: Kerala shows highest inequality (Gini ~90), while Karnataka and Rajasthan have relatively lower inequality (below 65).
- ❖ Landlessness Rate: Punjab has the highest landlessness (~73%).
- ❖ Natural Factors: High agricultural productivity areas tend to have larger landholdings and more inequality.
- ❖ Historical Factors: Regions under the colonial zamindari system show higher inequality than former princely states.
- ❖ Social Factors: Higher Scheduled Caste population areas face greater inequality due to historical land deprivation.
- ❖ Market Factors: Proximity to towns, highways, and mandis increases inequality as small farmers sell land to larger landowners.

4. Muse Spark:

Context: Meta Platforms has introduced Muse Spark, a new artificial intelligence model aimed at strengthening its position in the global AI race.

What is Muse Spark?

- ❖ Meta launched **Muse Spark** as its first product from a specialised advanced AI team.
- ❖ It is part of Meta's strategy to accelerate innovation in advanced machine intelligence.
- ❖ Developed after major investments in talent acquisition and strategic AI initiatives.
- ❖ Muse Spark is a lightweight yet powerful model optimized for speed and efficiency.
- ❖ Capable of handling complex reasoning tasks across domains like science, mathematics, and healthcare.
- ❖ Designed as a foundational AI system with more advanced versions under development.
- ❖ Supports practical applications such as image analysis, nutrition estimation, and travel planning.
- ❖ Introduces a "Contemplating mode" where multiple AI agents collaborate for better reasoning.
- ❖ Aims to scale using Meta's large user base and compete with global AI leaders.

5. *National Quantum Mission:*

Context: National Quantum Mission achieves 1,000-km secure communication. The development is expected to strengthen India's secure communication capabilities across defence, financial systems and critical infrastructure.

What is Quantum computing?

- ❖ Quantum Communication: Involves encoding and transmitting information between distant quantum systems.
- ❖ Physical Basis: Utilizes quantum properties like superposition and entanglement.
- ❖ Quantum Key Distribution (QKD): A technique to securely generate and share encryption keys.
- ❖ Security Feature: Any interception disturbs quantum states, enabling detection of eavesdropping.

About National Quantum Mission:

- ❖ It'll be implemented by the Department of Science & Technology (DST) under the Ministry of Science & Technology.
- ❖ The mission launched in 2023 at a cost of Rs 6,000 crore, planned for 2023-2031 time period.
- ❖ It aims to seed, nurture, and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT).
- ❖ With the launch of this mission, India will be the seventh country to have a dedicated quantum mission after the US, Austria, Finland, France, Canada and China.
- ❖ To develop quantum computers with 50-1000 qubits in 8 years on various platforms such as superconducting and photonic technology.
- ❖ To develop secure Satellite-based quantum communications between ground stations over 2000 kilometres range within India.
- ❖ To develop secure long-distance quantum communications with other countries.
- ❖ To develop inter-city quantum key distribution over a 2000 km range as well as multi-node Quantum networks.

6. *The India Development Update report:*

Context: The World Bank has revised downwards India's growth outlook for 2026-27 to 6.6% from 7.2%, citing the impact of the war in West Asia on household and government consumption, as well as on industrial activity.

Major observations:

- ❖ World Bank projected India's GDP growth at 7.2% (baseline, without conflict).
- ❖ Growth revised to 6.6% in FY27 due to Middle East conflict-induced energy disruptions.
- ❖ Strong growth driven by momentum in Q4 of 2025-26 and pro-growth reforms.
- ❖ Companion report: South Asia growth expected to slow to 6.3% in 2026 (from 7% in 2025).
- ❖ Private sector-led growth is key for employment generation and resilience.
- ❖ Industrial growth likely to slow to 7.5% (from 8.8%).
- ❖ Manufacturing (electronics, automobiles, tradables) will support industrial activity.
- ❖ Higher input costs + weak Gulf demand will dampen industrial growth.
- ❖ Services sector (business, food, accommodation) affected by global slowdown and LPG costs.
- ❖ Major downside risk: prolonged West Asia conflict.
- ❖ High dependence on energy imports → risks to inflation, fiscal balance, and external sector.
- ❖ Lower remittances possible due to labor market disruption in Gulf countries.
- ❖ Fuel subsidies/excise cuts may hurt fiscal consolidation efforts.

7. *Gaganayan Project:*

Context: The HLV3 G1/ OM1 mission, which is the first uncrewed mission of Gaganyaan, was scheduled to be launched in the first quarter of 2026.

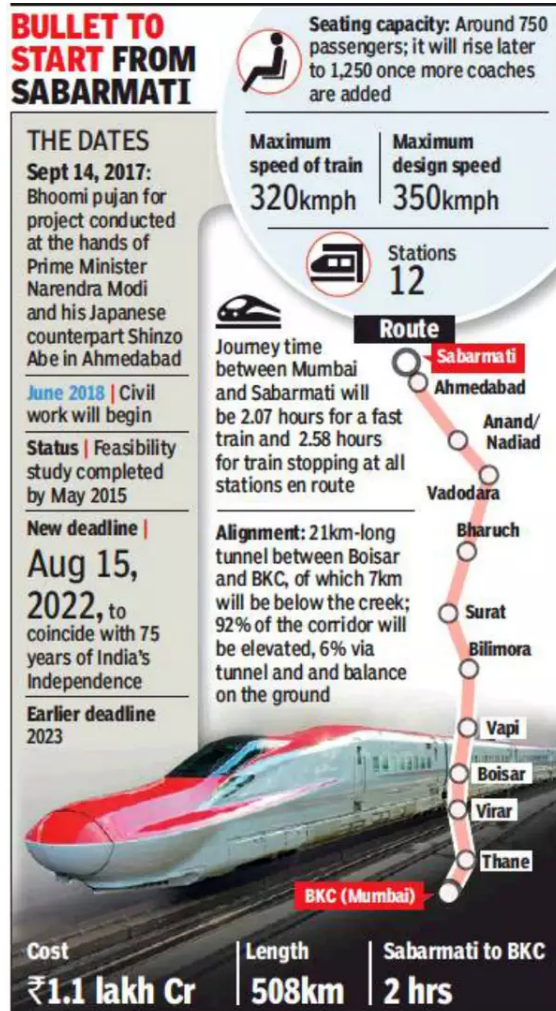
About Gaganyaan Mission:

- ❖ It is India's ongoing project to send a 3-day manned mission to the Low Earth Orbit (LEO) with a crew of 4 members and bring them safely back to Earth.
- ❖ It will circle Earth at a low-earth-orbit at an altitude of 300-400 km from earth for 5-7 days.
- ❖ Its immediate aim is to demonstrate indigenous capability to undertake human space flights.
- ❖ Launch Vehicle Mark 3 (LVM-3): It is a 3-stage space launch vehicle operated by the ISRO to launch satellites and other space objects into Geosynchronous Transfer Orbits.
- ❖ The third stage of this vehicle uses a Cryogenic engine, which uses liquefied oxygen and hydrogen as fuel.
- ❖ It has been designed for launching communication satellites.
- ❖ GSLV delivers satellites into a higher elliptical orbit - GTO.

8. *Bullet train project:*

Context: The lowering and assembly of the tunnel boring machine (TBM) has commenced for the construction of a 16-km-long tunnel between Bandra Kurla Complex (BKC) and Sawli (near Ghansoli) in Maharashtra for the MumbaiAhmedabad Bullet Train Project, National High Speed Rail Corporation Limited (NHSRCL)

About Mumbai-Ahmedabad High Speed Rail Project:



- ❖ The Mumbai-Ahmedabad High Speed Rail Corridor, often referred to as the Bullet Train project, is an ambitious infrastructure undertaking in India.
- ❖ It aims to connect the financial capital, Mumbai, with the industrial hub, Ahmedabad, through a high-speed rail network.
- ❖ The length of the project is 508 Km with 12 stations planned at Mumbai, Thane, Virar, Boisar, Vapi, Bilimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad and Sabarmati.
- ❖ The train is expected to take around 2 hours and 58 minutes to travel between Ahmedabad and Mumbai, covering eight stations in Gujarat and four in Maharashtra.
- ❖ The sanctioned cost of the project is ₹1,08,000 Crore.
- ❖ It passes through the States of Gujarat, Maharashtra and Union Territory of Dadra & Nagar Haveli.
- ❖ The project utilizes Japanese Shinkansen technology, renowned for its speed, safety, and comfort.

Quick Bites:

- ☐ World Homoeopathy Day 2026 is celebrated on April 10 with the theme “Homoeopathy for Sustainable Health,” emphasizing its holistic, cost-effective, and eco-friendly approach aligned with Universal Health Coverage and the United Nations Sustainable Development Goals, particularly SDG 3 on Good Health and Well-being.
- ☐ World Navkar Mahamantra Day, celebrated on April 9th, is a global initiative dedicated to the collective chanting of the revered Jain Navkar Mantra to promote peace, non-violence, and spiritual harmony. Theme of "One World, One Mantra"
- ☐ NITI Aayog released the report “*From Borrowers to Builders: Women and India’s Evolving Credit Market*”, highlighting the increasing participation of women in formal credit systems and their transition from mere borrowers to active economic contributors, reflecting improved financial inclusion, greater access to institutional finance, and a growing role in entrepreneurship and asset creation.
- ☐ India has reportedly withdrawn its bid to host the 33rd Conference of Parties (COP33) scheduled for 2028, marking a significant shift in its recent climate diplomacy stance. India hosted only one CoP in 2002 which was CoP 8, UNFCCC.

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