

NEWS TODAY

India to launch 52 Military Satellites and New Military Space Doctrine: Chief of Defence Staff

These satellites will be dedicated for **Intelligence, Surveillance and Reconnaissance (ISR)**.

- This will enhance India's military capabilities through space-based assets.
- Earlier India has launched satellites like GSAT-7 (Rukmini), GSAT-7A (Angry Bird) and RISAT Series (Radar Imaging Satellites) to enhance capability of Armed forces.





Key Details of Military Satellites

- ISRO along with the private sector will develop these **satellites**.
- Satellites will be **equipped with Synthetic Aperture Radar (SAR), advanced sensors and imaging systems**.
- They will be deployed across multiple orbits, **including Low Earth Orbit (LEO), Medium Earth Orbit (MEO), and possibly Geostationary Orbit (GEO)**, to provide comprehensive coverage and resilience.

New Military Space Doctrine

- It will act as a **guiding policy for the Armed Forces** in monitoring **threats, tracking adversary activity, and collecting real time intelligence** beyond our national borders.
- The doctrine will focus on the **growing threat of anti-satellite weapons, space debris and electronic warfare in space**.
 - ⊕ Earlier in 2019, India became **fourth nation after the US, Russia and China to have the ability to destroy a satellite in LEO** to secure its strategic interests in space.

Benefits/Need of Military Satellites

 <p>Monitoring rugged mountainous border with Pakistan and China</p>	 <p>Tracking maritime activities in the Indian Ocean Region</p>	 <p>Countering emerging threats of hypersonic missiles and UAV with advanced sensors</p>	 <p>High resolution imaging systems and SAR capabilities will enable all-weather operations as well as detect hidden threats through clouds, darkness and underwater.</p>
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26/11 Mumbai terror attack accused extradited to India from the US

According to the **UN Office on Drugs and Crime (UNODC)**, extradition means the **surrender of any person who is sought by the requesting State for criminal prosecution** for an extraditable offence.






- **Extraditable offence** refers to an **offence provided for in extradition treaty** with that State or the offence is **punishable with at least 1 year of imprisonment** either in India or in foreign State (in case of no treaty).

What is the framework for Extradition?

➤ In India:

- ⊕ The **Extradition Act 1962 (substantially modified in 1993)** consolidated the law relating to the extradition of criminal fugitives from India to foreign states.
 - ◆ **The Ministry of External Affairs** is the nodal authority for Extradition in India.
 - ◆ India has **extradition treaties with 48 nations**, including Bangladesh and the USA.
- ⊕ The **Government of India finally decides on Extradition** and this decision **can be appealed in a higher court**.
- **Globally: United Nations Model Treaty on Extradition (1990), UN Model Law on Extradition (2004), United Nations Convention against Transnational Organized Crime (2000), etc.** are some of the international frameworks which deal with various principles of extradition.

Extradition Principles

 <p>Fair Trial Ensures just and impartial legal proceedings.</p>	 <p>Reciprocity Encourages mutual cooperation between states for extradition.</p>	 <p>Double Criminality Requires the act to be a crime in both jurisdictions.</p>	 <p>Double Jeopardy Prevents extradition for already punished crimes.</p>	 <p>Speciality Limits prosecution to specified offenses in extradition.</p>
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Challenges in Extradition Law

- **Misuse of Double Criminality Principle:** Fugitive criminals often exploit **this by fleeing to countries where their actions do not constitute an offense**, thereby evading extradition.
- **Time-Consuming Procedures:** due to **extensive documentation and bureaucratic requirements**.
- **Limited number of Treaties:** India has **extradition treaties with only a limited number of countries**.

Jainism Played Invaluable Role in Shaping India's Identity: Prime Minister on Navkar Mahamantra Divas

Navkar Mahamantra Divas is celebration of **spiritual harmony and ethical consciousness** that seeks to unite people through the collective chanting of the **Navkar Mahamantra**.

- Navkar Mahamantra, the most revered and universal chant in Jainism, pay respects to:
 - **Arihant** (who attained Keval Gyan or perfect knowledge),
 - **Siddhas** (who eradicated eight karmas and attained Moksha),
 - **Acharya** (who follow Mahavrat),
 - **Upadhyayas** (who impart knowledge of Moksha), and
 - **Sadhus** (who refine themselves through penance and progress towards Moksha).
- Inspired by **Navkar Mantra**, Prime Minister **proposed nine resolutions** for a New India (see infographic).

Jainism's Principles and their role in addressing Contemporary Challenges

- **Parasparopagraho Jivanam (Interdependence of Life)**: It emphasizes the interdependence of all living beings promoting nature restoration, preserving biodiversity, and highlighting the need for international cooperation.
- **Ahimsa (Nonviolence)**: It is key to peace – countering **war, hate, and violence**. Mahatma Gandhi's example even inspired global leaders to choose peace over conflict."
- **Anekantavada (Doctrine of many viewpoints)**: It promotes **empathy** and **open-mindedness**, helping prevent situations of war and conflict.
- **Aparigraha (Non-possession)**: Directly counters **consumerism, materialism and greed.**, which aligns with **Mission LIFE**, promoting simple, sustainable living through self-restraint.
- **Satya (Truthfulness) and Asteya (Non-stealing)**: These values emphasize honesty, integrity, and fairness – principles crucial to combat **corruption, corporate exploitation, and ethical erosion**.



Energy demand for data centers to double by 2030, Driven by AI: IEA

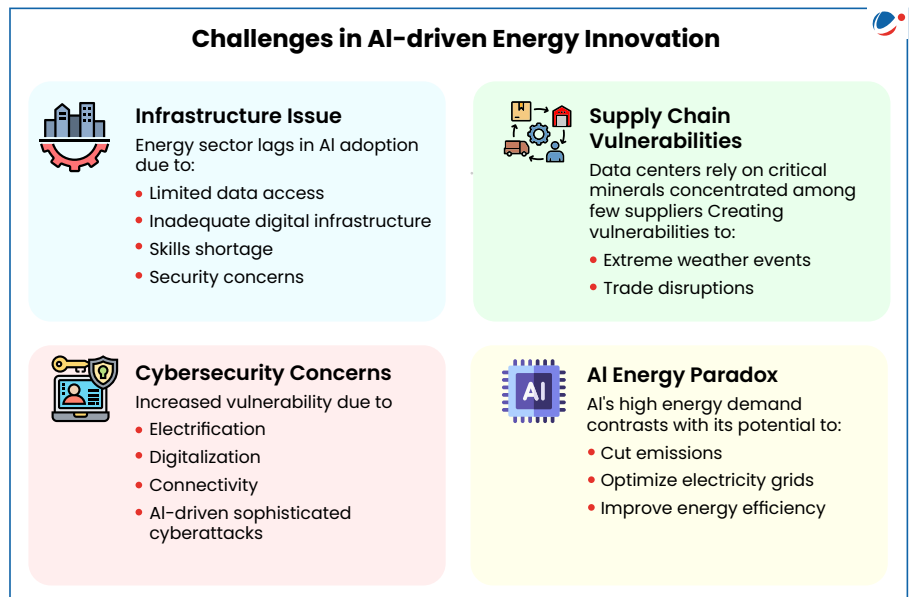
The **International Energy Agency (IEA)** has released a report examining all aspects of the links between energy and Artificial Intelligence (AI).

Key highlights of the report

- **Data Centre Energy Demand**: The energy appetite of the world's data centres **could reach around 945 terawatt-hours (TWh) by 2030**.
 - Data centres provide infrastructure for **training and deploying AI models**.
- **Impact of AI on energy sector**: AI can help **optimize exploration and production of oil & gas**, balancing electricity networks, improving industrial efficiency, and enhancing building systems.
- **Role of Renewable energy**: Half of global growth in data center demand is **expected to be met by renewables, with natural gas** and nuclear power also playing significant roles.

AI-Driven Innovation in Energy Sector:

- **Methane Emissions in Oil & Gas**: AI reduces **methane leaks by enhancing detection** through satellite monitoring, enabling faster repairs.
- **Power Sector Emissions**: AI **improves efficiency** at fossil fuel plants (e.g., optimizing natural gas plant conditions), lowering emissions.
- **Industry Emissions**: AI **optimizes manufacturing processes** (e.g., improving cement production fuel mix), boosting energy efficiency by over 2% and cutting emissions.
- **Transport Emissions**: AI **enhances vehicle efficiency** (e.g., better route planning, driving behavior), achieving 5-10% efficiency gains and reducing emissions.



India formally revoked transshipment facility for Bangladesh exports from India

The 2020 agreement facilitated export of Bangladeshi goods through Indian Land Customs Stations (LCSs) to ports for destinations in third countries in Europe, West Asia, and beyond.

- India cited logistical challenges such as **significant congestion at Indian ports and airports** hindering India's own export processes, as primary reason for revoking the agreement.
- However, decision also follows **strained bilateral relations** and recent remarks by Bangladesh government's Chief Advisor that Bangladesh is **the only guardian for all in the Indian Ocean Region (IOR)**, denouncing India's role as Net Security Provider.

India's role as Net Security Provider in IOR

- **Geo-Strategic:** India's central position in the IOR, with a 7,500-km coastline and proximity to **key chokepoints** (e.g., Strait of Malacca, Bab al-Mandab).
 - ⊕ India's **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) Vision, 2025** as an extension of the 2015 SAGAR doctrine.
- **Maritime Security:** India undertakes **anti-piracy and counter-trafficking operations** in the IOR, ensuring security of Sea Lines of Communication.
- **Development and Humanitarian Assistance:** India's rapid response to the **2004 Indian Ocean tsunami, water crisis in Maldives (2004), economic crisis in Sri Lanka (2022)**, etc. establish its credentials as the **first responder to the crisis in the IOR**.

Challenges to India's position in IOR

- **China's Expanding Influence:** With its 'String of Pearls' strategy, China is trying to encircle India through infrastructure projects in India's neighbourhood. **E.g., Hambantota Port (Sri Lanka), Gawadar Port (Pakistan)**, etc.
- **Regional Political and Economic Instability:** India's neighbouring countries like **Pakistan, Bangladesh and Sri Lanka** are facing both political and economic turmoil.
- **Non-Traditional Threats:** For example, India's vicinity to both **Golden Crescent** (Pakistan-Afghanistan-Iran) and **Golden Triangle** (Laos-Myanmar-Thailand) regions for drug smuggling.

Oceans Were Once Green, Could Change Colour Again: Study

A new study by Japanese scientists suggests that during the **Archean eon**, Earth's oceans may have appeared green, not blue.

Key Findings of Study:

- **Reasons for greening of ocean in earlier times**
 - ⊕ During the **Archean eon (4.0 billion to 2.5 billion years ago)**, there was no oxygen in atmosphere or oceans.
 - ◆ Iron from rocks and underwater volcanoes **dissolved into oceans**.
 - ⊕ The first life forms, **anaerobic bacteria, began performing photosynthesis**, which produced oxygen as a byproduct.
 - ⊕ This **oxygen reacted with the iron** in the seawater, **forming oxidised iron (Fe(III))**, which caused the oceans to appear green
- **Evolution of Cyanobacteria:**
 - ⊕ These were **photosynthetic bacteria** (not true algae) that evolved in iron-rich, green oceans.
 - ⊕ They used **two pigments: chlorophyll** (for normal sunlight) and **phycoerythrobilin (PEB)** (better for green light).
 - ◆ This helped them survive in **varying light and ocean conditions**.
 - ⊕ These bacteria flooded **Earth's atmosphere with oxygen** and also paved the way for complex life.

Other Possible Colors of the ocean

- **Purple Oceans:** High **sulfur content** from intense volcanic activity and **low oxygen levels** could lead to the rise of purple sulfur bacteria, turning oceans a deep violet.
- **Red Oceans:** Intense **weathering of rocks in tropical climates or blooms of red algae** (associated with "red tides") could stain oceans red.
 - ⊕ Today, such algae blooms are linked to nutrient runoff near coasts.

Why does the ocean appear Deep blue?

- When sunlight hits the ocean, the water acts like a filter. It **absorbs the longer wavelengths** (like red and orange) first.
 - ⊕ The **shorter wavelengths**, especially blue, are **scattered and reflected**, which is why the ocean looks blue to our eyes.

Also In News



PM POSHAN (POshan SHAKti Nirman) Scheme

The material cost for providing midday meals to schoolchildren under the **PM-POSHAN scheme** has been enhanced by 9.5%.

About PM-POSHAN

- **Ministry:** Implemented by **Ministry of Education**.
- **Objective:** To address **hunger and education by improving nutritional status** of eligible children.
- It is a **centrally sponsored scheme** under which hot cooked meals are served to over eleven crore students **studying in Balvatika and classes 1 to 8 in government and government-aided schools**.
- **Tenure:** 2021-22 to 2025-26.
- **Bal Vatika:** There is provision of hot cooked meals to children of pre-schools or (before class I).
- **Tithi Bhojan:** It is a community participation programme in which people provide special food to children on special occasions/festivals.
- Special provision is made for providing supplementary nutrition items to children in **aspirational districts and districts with high prevalence of Anemia**.



Vitamin D

A recent report highlights a **deepening Vitamin D deficiency crisis** in India, with **one in five Indians** affected.

- Factors such as **urban lifestyles, high air pollution, indoor work culture** etc. are contributing to reduced synthesis of Vitamin D in body.

About Vitamin D

- Vitamin D, also known as **calciferol**, is a **fat-soluble vitamin** that plays a crucial role in maintaining health.
- It is **naturally present in a limited number of foods**, can be added to others, and is available as a dietary supplement.
- **Sources of Vitamin D**
 - ⊕ **Natural:** The body makes Vitamin D naturally from sunlight
 - ⊕ **Foods:** Oily fish (salmon, sardines, herring, mackerel), Red meat and liver (avoid liver if pregnant), Egg yolks etc.
- **Importance:** plays a vital role in regulating calcium and phosphate levels in the body, essential for keeping bones, teeth, and muscles healthy.
- **Deficiency:** Causes bone density loss, leading to osteoporosis and fractures. In children, it can **result in rickets**, a condition that **softens and weakens bones**



Arctic Biome

According to a study, **Arctic Tundra Biome is losing its capacity to absorb carbon** from the atmosphere due to wildfires around the globe.

About Arctic Tundra Biome

- **Location:** North of the **Arctic Circle (66° 33'N)** and includes areas of **Alaska, Canada, Greenland, and Russia.**
- **Features:**
 - ⊕ **Climate:** Extremely cold temperatures (with mean temperatures below 0°C for six to 10 months), low amounts of precipitation, making it **similar to desert.**
 - ⊕ **Permafrost is a defining characteristic** of the tundra biome.
 - ⊕ **Vegetation:** With **no deep root systems**, flora includes **mosses, lichens, dwarf shrubs, grasses, and sedges.**
 - ⊕ **Wildlife:** Lemmings, Arctic Wolves, Polar Bears, Falcons, etc.



Tsunami Zones

As per INCOIS, all Indian coastal Union Territories and states are **prone to tsunamis** emanating from the two major subduction zones: **Andaman-Nicobar-Sumatra Island Arc and Makran Subduction Zone.**

About Andaman-Nicobar-Sumatra Island Arc

- It is a **5,000 km long chain of islands and mountains** from Myanmar in the north to Indonesian archipelago in the south.
- It is a **major subduction zone**, where the **Indian plate is subducting beneath the Eurasian plate.**

About Makran Subduction Zone

- It is a **tectonic plate boundary** where the **Arabian Sea Plate is subducting beneath the Eurasian Plate**, primarily in southeastern Iran and southwestern Pakistan.



Diatom

Diatoms like Pseudo-nitzschia produce **domoic acid, a marine toxin** that enters the food chain and **causes aggressive behavior in sea lions.**

About Diatoms

- Diatoms are **photosynthetic algae with silica-based shells**, found in nearly all aquatic and moist environments from oceans and rivers to soil.
- **Significance**
 - ⊕ **Photosynthesis:** Use chlorophyll a and c to convert sunlight into energy.
 - ⊕ **Oxygen Production:** Produce 20-25% of Earth's oxygen.
 - ⊕ **Carbon Fixation:** Remove CO₂, release O₂.
 - ⊕ **Food Web Base:** Source of long-chain fatty acids—feed zooplankton, insects, fish, whales.
 - ⊕ **Water Quality Indicators:** Sensitive to pH, salinity, nutrients, sediment, and human impact



Carbon Rights

A report by **Rights and Resources Initiative** provided a snapshot of carbon rights.

About Carbon Rights

- Currently, there is **no internationally accepted definition of carbon rights.**
 - ⊕ Some organizations define carbon rights as **legal claim or entitlement to the benefits generated by activities** that sequester or remove carbon from the atmosphere.
- The term carbon rights **comprises two fundamental concepts:**
 - ⊕ **Property rights to sequester and store carbon**, contained in land, trees, soil, etc. and
 - ⊕ **The right to benefits that arise from the transfer of these property rights** (i.e. through emissions trading schemes).



Matter-Antimatter Asymmetry

CERN's Large Hadron Collider beauty (LHCb) experiment has confirmed **Charge-Parity (CP) violation in baryons** - particles that make up atomic nuclei, including protons and neutrons.

- Particles and anti-particles are like perfect mirror images of one another but some particles disobey this symmetry in a phenomenon known as **CP violation.**
- Matter and antimatter particles (same mass as matter but opposite electric charge) are **always produced as a pair.**
 - ⊕ If they come in contact, they annihilate one another, leaving behind pure energy.
- After the Big Bang, a **tiny portion of matter survived**, creating all visible matter in today's universe.



Blue Washing

To counter 'greenwashing' allegations against it, Waste to energy (WTE) industry seems to have **adapted 'bluwashing'.**

About Blue Washing

- It is a **deceptive marketing tactic** that overstates a company's commitment to responsible and sustainable **social and ethical business practices.**
- **Other related terms:**
 - ⊕ **Greenwashing:** Making **false or misleading claims** about a company's environmental efforts to appear eco-friendly.
 - ⊕ **Pinkwashing:** Using **LGBTQ+ rights as a marketing tool** while ignoring or failing to improve conditions for LGBTQ+ employees.



Personality in News



Mahatma Jyotirao Phule

11th April marks the birth anniversary of Mahatma Jyotiba Phule.

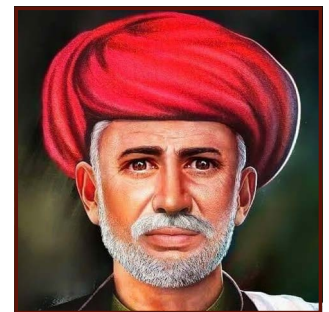
About Jyotirao Phule (1827 - 1890)

- **Born:** Satara district (**Maharashtra**) in **1827.**
- He was a social reformer who **worked against social evils like untouchability and caste system.**
- He was given the title of Mahatma on **May 11, 1888, by Vithalrao Krishnaji Vandekar**, a Maharashtrian social activist.

Social Contributions

- He advocated for several important causes with his wife, including **widow remarriage, the prevention of child marriage**, and the promotion of girls' education.
- With help of his wife, he started the **first school for girls in 1848** in Pune at Tatyasaheb Bhide's residence.
- In 1873, **Jyotiba Phule formed the Satya Shodhak Samaj (Society of Seekers of Truth).**
- **Books:** Gulamgiri, Sarvajaneek Satyadharma, etc.

Values: Humanity, empathy, equality etc.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI