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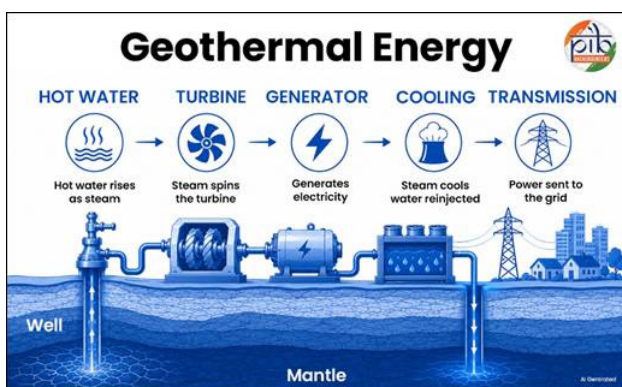
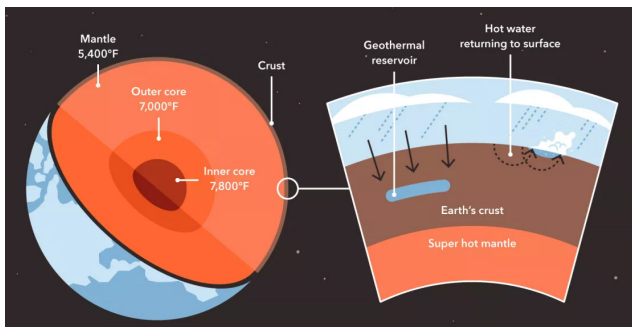
GEOTHERMAL ENERGY

Context

- India's geothermal push gained momentum with the commissioning of its **first two geothermal wells at Puga Valley, Ladakh**, opening prospects for round-the-clock renewable power.

About Geothermal Energy

- Geothermal energy harnesses the **natural heat within the Earth** to generate electricity or provide direct heating and cooling.
- It is **weather-independent and available round the clock**, unlike solar and wind, making it a potential source of firm renewable energy.
- Earth's internal heat arises from **radioactive decay of uranium, thorium and potassium** and residual heat from planetary formation.
- In geologically active regions, faults and fractures allow heat to approach the surface, creating reservoirs of hot water and steam.



How does it generate power?

- Deep wells bring hot water/steam to the surface.
- Steam drives a **turbine connected to a generator**.
- Condensed water is **reinjecting into the reservoir**, supporting continued production.
- Geothermal heat can also be directly used for **district heating, agriculture, aquaculture and space heating/cooling**.

India's Geothermal Potential

- India's diverse geology provides significant geothermal opportunities.
- 381 hot springs** mapped by the Geological Survey of India (GSI).
- 10 geothermal provinces** identified.
- Theoretical geothermal potential: **nearly 10.6 GW (10,600 MW)**.
- 42 sites** recognised as promising for power generation and direct heat use.
- Major provinces include Himalayan, Naga-Lusai, Andaman & Nicobar, Son-Narmada-Tapi (SONATA), West Coast, Cambay Graben, Aravalli, Mahanadi, Godavari and South Indian Cratonic regions.



Puga Valley: A Landmark Development

- In **July 2026**, ONGC Energy Centre commissioned India's **first two geothermal wells at Puga Valley, Ladakh**, located at an altitude of over **14,000 feet**.
- The two wells are **1,000 metres deep** and will facilitate reservoir evaluation and pave the way for India's first **1-MW demonstration geothermal power project**.
- Temperatures of up to **135°C** have been recorded beneath Puga Valley, according to the infographic on page 2 of the source document.

Emerging Applications & Projects

- India is moving from resource assessment towards field demonstrations:
 - Ankleshwar, Gujarat:** Pilot to assess electricity generation by retrofitting unproductive oil and gas wells.

- ♦ **Gandhinagar, Gujarat:** Solar-geothermal demonstration; three wells produce geothermal fluid at **70–80°C**, with **50–90 kW** electricity generation demonstrated.
- ♦ **Tawang, Arunachal Pradesh:** Geothermal assessment at five sites.
- ♦ **Hyderabad:** Development of geothermal cooling for air-conditioning.
- ♦ **Shallow geothermal:** Borehole Heat Exchangers being studied for heating and cooling.

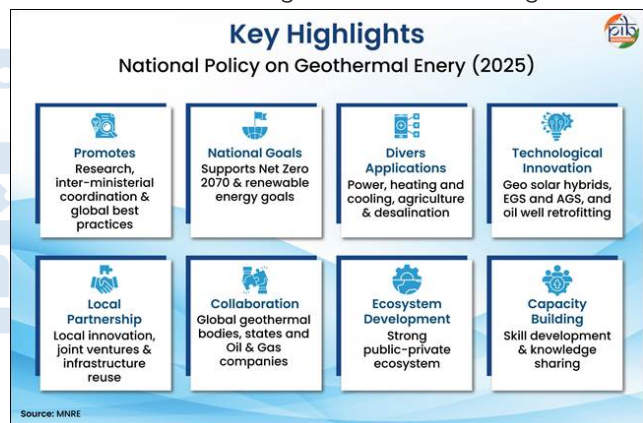
Key Concerns in Geothermal Energy

- **High Upfront Cost:** Deep drilling, exploration and reservoir assessment require substantial capital; resource uncertainty increases financial risk.
- **Geological Uncertainty:** India's geothermal resources are unevenly distributed, and identifying commercially viable reservoirs requires extensive geological and geochemical surveys.
- **Induced Seismicity:** Fluid injection/reinjection, particularly in **Enhanced Geothermal Systems (EGS)**, can trigger micro-earthquakes and, in some cases, larger seismic events.
- **Water-related Concerns:** Geothermal operations may require significant water, while poor management can affect groundwater availability or quality.
- **Environmental Impacts:** Potential issues include **land disturbance, gas/mineral release, thermal pollution and groundwater contamination** if geothermal fluids are not properly managed.
- **Technological Challenges:** EGS/AGS, deep drilling and efficient reservoir management require advanced technology and specialised expertise.
- **Resource Depletion:** Poorly managed extraction can reduce reservoir pressure/temperature, affecting long-term productivity.
- **Remote Locations:** Many promising Indian sites, such as **Puga Valley in Ladakh**, are geographically difficult to access, increasing infrastructure and transmission costs.
- **Limited Commercial Experience in India:** Despite a theoretical potential of **~10.6 GW**, India is still at the demonstration stage; commercial-scale geothermal power generation is yet to be established.

- **Regulatory & Investment Challenges:** Large-scale deployment requires clear regulations, risk-sharing mechanisms, private investment and reliable geothermal resource data.

Policy Push

- The **National Policy on Geothermal Energy, 2025**, with **MNRE as nodal ministry**, seeks to make geothermal energy a major renewable-energy pillar. It promotes:
 - ♦ Research, drilling and reservoir management;
 - ♦ **Ground Source Heat Pumps (GSHPs);**
 - ♦ Repurposing abandoned oil and gas wells;
 - ♦ National geothermal data repository;
 - ♦ Pilot projects and Centres of Excellence;
 - ♦ Greater public-private participation;
- The **RE-RTD programme** supports indigenous and cost-effective geothermal technologies.



Way Forward

- India's theoretical potential remains largely untapped, while commercial-scale geothermal power generation is yet to be established.
- **Enhanced Geothermal Systems (EGS)** and **Advanced Geothermal Systems (AGS)** can expand exploration beyond conventional geothermal zones.
- International cooperation with **Australia, Iceland and Saudi Arabia** can further support technology development and knowledge exchange.
- Globally, installed geothermal capacity reached **15.67 GW by end-2025**, with Indonesia, the US, Philippines, Türkiye and New Zealand accounting for around **67%**.

Source: PIB

CHILD LABOUR

In News

- The National Commission for Protection of Child Rights (NCPCR) has rescued over 3,800 children from child labour under a sustained campaign.

Child Labour

- Child labour can be defined as any work that is unconstitutional for a child's age by physical or mental abilities.
- It refers to work that is improper for a child's age, or that impairs the child's health, education, or physical, mental, social, or moral development.
- In its worst forms, it might include slavery, trafficking, forced recruitment, drug production and trafficking, prostitution, and armed combat.

Status in India

- India has a significant incidence of child labour. Census 2011 estimated that 43.53 lakh children in the age group of five to 14 were involved in child labour due to factors such as poverty, inaccessibility, and illiteracy.
 - ♦ Child labour is prevalent in beedi, carpet-weaving, and firework factories.
- The NCPCR's Pan-India Rescue and Rehabilitation campaign has saved more than 3,800 children and has led to over 575 FIRs.
 - ♦ It also emphasised rehabilitation, family restoration, getting children back into school, and compensation.

Reasons for Child Labour

- **Income Insecurity and Poverty:** Children's work is usually a means of satisfying the basic subsistence needs of families at or near the poverty line.
 - ♦ Families trapped in cycles of debt or seasonal migration for survival often require children to work physically to meet output targets
- **Educational Deficits:** Limited access to quality schools, inadequate infrastructure, and long distances to schools, particularly in rural areas, can discourage **school attendance**.
- **Demand from informal sector:** The unorganised sector employers like to employ youngsters as they are cheap, non-unionised, submissive and flexible labour.

- **Socio-Cultural Dynamics:** Caste discrimination, gender bias (girls being taken out of school for household responsibilities), and traditional expectations about inherited jobs foster kid employment.

Impacts

- **Health Hazards:** Children exposed to toxic dust, chemicals, heavy machinery, and long hours of work develop chronic respiratory diseases, musculoskeletal problems, stunted growth, and physical injuries.
- **Psychological Trauma:** The lengthy hours spent in harsh conditions deprive the children of social interaction, playtime, and emotional security, thereby causing considerable mental discomfort, anxiety, and low self-esteem.
- **Educational and skill deprivation:** Dropout or underperformance of working children in school results in illiteracy and unavailability of market relevant occupational skills.
- **Intergenerational Poverty:** Uneducated and unskilled child workers become low-wage workers themselves, perpetuating the cycle of poverty for the next generation.
- **National Economic Loss:** Pervasive child labour reduces the wage rates of adults and lowers the quality of human capital in general, hence obstructing India's long-term economic productivity and demographic dividend.

Various Steps Taken

- **Constitutional Safeguards:** The Constitution extensively provides for the protection of children. Articles 23 and 24 give protection from human trafficking, begging, forced labour, and employment in hazardous industries.
 - ♦ The Right to Education now mandates that the state shall provide free and compulsory education to all children in the age group six to 14 years.

Legislative Measures:

- ♦ India enacted the **Child Labour (Prohibition and Regulation) Act (CLPRA) in 1986**, while the National Policy on Child Labour, 1987 sought to adopt a gradual and sequential approach with a focus on rehabilitation.

- Its action plan included strict enforcement of the CLPRA and implementation of the National Child Labour Project (NCLP) in areas where there is a high incidence of child labour.
- The CLPRA was replaced with the Child Labour (Prohibition and Regulation) Amendment Act, 2016, which prohibited the employment of children below 14 and had provisions for the prohibition on employment of adolescents (14-18 years) in scheduled hazardous occupations.
- ♦ The **BNS under Sections 98 and 99** specifically addresses the 'selling and buying' of minors.
- ♦ **Prevention of trafficking for sexual exploitation** is provided in the Immoral Traffic (Prevention) Act, 1956.
- ♦ **Care, protection and rehabilitation** for victims of child trafficking is provided under the Juvenile Justice (Care and Protection of Children) Act, 2015.
- ♦ The **Criminal Law Amendment Act, 2013** also intends to check such activities by providing a more comprehensive definition of trafficking by including sexual exploitation, slavery, servitude, forced labour, and organ removal.
 - It will cover trafficking irrespective of consent.

Judicial Observations

- In **Vishal Jeet versus Union of India, 1990**, it was held that trafficking and child prostitution are serious socio-economic problems and hence a preventive and humanistic approach is essential to deal with them.
- In **M. C. Mehta versus State of Tamil Nadu, 1996**, the Court issued guidelines with a view to prohibiting employment of children in hazardous industries.
- In the **Bachpan Bachao Andolan versus Union of India, 2011 case**, the top court issued directions to address widespread exploitation and trafficking of children.

Conclusion

- Child work is still a big socio-economic problem in India, depriving children of school, childhood, and healthy development.

- Eradication involves more than legislative prohibition: tackling poverty and other structural factors, enhancing enforcement with instruments extending social security, improving public education, regulating informal supply chains, and fostering community alertness.
- Protecting children is the foundation for building an equitable, resilient, and productive nation.

Source : TH

COAL STOCKS AT THERMAL POWER PLANTS FALL BELOW RECOMMENDED LEVELS

Context

- Coal stocks at thermal power plants across the country have fallen to less than half the recommended level, with 50 plants classified as having "critically low" inventories.

About

- These 50 plants, with a combined capacity of around **224 GW**, had coal stocks of **28.2 million tonnes (MT)** against the prescribed requirement of **58.7 MT** representing only **48%** of the normative requirement.
- The available coal stock was equivalent to around nine days of consumption at an **85% Plant Load Factor (PLF)**, compared with the normal requirement of approximately **19 days**.
- Power plants are classified as facing **coal-stock shortages** when their inventories fall below **25%** of their normative stock requirement.

Coal Production in India

- India, with the **fifth-largest coal reserves** and being the **second-largest consumer**, heavily depends on coal.
- In the current financial year, cumulative production through July stood at **302.04 MT**, while overall coal dispatches rose by about **6%** year-on-year to **354.7 MT**.
- Coal stocks available at different stages included **34.55 MT** at thermal power plants and around **113 MT at pitheads or in transit**. The combined stock was therefore around **148 MT**.

- Coal- and lignite-based power plants, with around **230.8 GW of installed capacity**, remain critical for India's energy security.

Reasons for the Decline in Coal Stocks

- Lower and uneven rainfall has **increased electricity demand**, particularly due to higher use of air-conditioning.
- Cooling demand remains elevated, including during night-time hours when **solar power generation is unavailable**, increasing dependence on thermal generation.
- The monsoon season annually **affects coal mining**, transportation and the movement of coal through rail networks.
- India received around **12% less rainfall** than normal during the monsoon period, increasing reliance on coal-fired electricity generation.

Government Initiatives

- **Coal-stock requirements** for thermal power plants have existed for several years.
 - ♦ The current Central Electricity Authority (CEA) framework took effect in December 2021, introducing revised, plant-specific stocking norms aimed at strengthening fuel security and inventory planning.
- **The revised SHAKTI (Scheme for Harnessing and Allocating Koyala Transparently in India) policy, approved in 2025**, streamlined coal-linkage allocation into two windows.
 - ♦ **Window I** provides coal linkages to central government-owned generating companies and state utilities at notified prices
 - ♦ **Window II** allows other eligible producers, including **imported-coal-based plants**, to procure coal through auctions at a premium over the notified price.
- **Inter-Ministerial Coordination:** The Ministries of Coal, Power and Railways coordinate regularly to monitor coal supplies and facilitate their movement to power plants, particularly during periods of supply disruption.
- **Commercial coal mining** opened the sector to private players to boost production, efficiency, and competitiveness.
- **Coal Mitra Portal** developed for flexible coal allocation to power plants, ensuring better coal supply management.

Way Ahead

- India's recent coal-stock situation highlights that the **challenge is not necessarily a shortage of coal** at the national level but how efficiently supplies are allocated, transported and converted into adequate plant-level inventories.
- As thermal power continues to play a crucial role in ensuring grid stability, strengthening compliance with stocking norms and ensuring equitable emergency coal redistribution will be essential to maintain reliable and uninterrupted electricity supply.

Classification of Coal

- **Anthracite:** It is the best quality of coal which carries **80 to 95%** carbon content. It has the highest calorific value.
 - ♦ It is found in small quantities in **Jammu and Kashmir**.
- **Bituminous:** It carries **60 to 80%** of carbon content and a low level of moisture content. It is widely used and has a high calorific value.
 - ♦ It is found in **Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh**.
- **Lignite:** It is often brown. It carries **40 to 55%** carbon content. It has high moisture content so it gives smoke when burnt.
 - ♦ It is found in **Rajasthan, Lakhimpur (Assam), and Tamil Nadu**.
- **Peat:** It has less than 40% carbon content. It has low calorific value and burns like wood.

Coal India Limited

- CIL is a **Maharatna Public Sector Undertaking** under the **Ministry of Coal**.
- It was **established in November 1975**.
- **Headquarters:** Kolkata.
- **Products:** CIL produces coking coal, semi-coking coal, non-coking coal, washed and beneficiated coal, coal fines, and coke.
- CIL has 21 training Institutes and 76 Vocational Training Centres.
- **Strategic Relevance:** It contributes to **80%** of total domestic coal production and 75% of total coal based generation.

Source: TH

SKILLING INDIA'S AUTOMOBILE WORKFORCE FOR THE FUTURE

Context

- As automobile production expands and factories adopt electric, electronic and automated technologies, **manufacturers face a shortage of workers with the skills needed for the changing shop floor.**

Transition in Automobile Industry

- Expansion:** The annual vehicle production could **increase from about 30–35 million units in FY25 to 50–55 million by 2030.**
 - The auto-component industry is targeting a turnover of about \$200 billion by 2030, compared with about \$86 billion currently.
- New Technologies:** Factories are adopting electric powertrains, electronics, automation, connected technologies and advanced manufacturing systems.
- Need for Skilled Workforce:** Companies increasingly need people trained in areas such as electrical and electronics, mechatronics, robotics, battery systems and automated equipment.

Lack of Skilled Workforce

- Gaps in Technical Education:** A 2025 National Council of Applied Economic Research (NCAER) study found **gaps in the technical education of workers** in the automotive sector.
 - 57.3% of workers in the manufacture of parts and accessories for motor vehicles had **no technical education**, while 35.2% had a diploma or certificate below graduate level in engineering or technology.
 - In vehicle manufacturing**, 53% had no technical education, while 21.9% had a technical degree in engineering or technology and 16.6% had a diploma or certificate below graduate level in engineering or technology.
 - In vehicle repair and maintenance**, 93.3% had no technical education.
- Lack of Practical Experience:** Another study found that **many candidates lacked practical experience** with advanced machinery and digital systems.
 - Courses in areas such as battery technology, mechatronics, automation and robotics remained scarce, alongside a shortage of qualified trainers.

Government Initiatives

- Vocational training:** Under NAPS (National Apprenticeship Promotion Scheme) 2.0, apprenticeship training is conducted in actual work environments using the training facilities available with participating establishments, enabling hands-on learning and industry exposure.
 - Under NAPS 2.0, 8.93 lakh apprentices were trained in the "Automotive" sector and 99,244 in the separately classified "Automobile" sector.
- Industrial Training Institutes (ITIs):** The government is also upgrading Industrial Training Institutes (ITIs) through the Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs (PM-SETU) scheme.
- PM-SETU Scheme:** Aims to upgrade 1,000 government ITIs (200 Hub, 800 Spoke) under a Hub-and-Spoke model, targeting industry-aligned courses in emerging sectors and skilling 20 lakh youth over five years.
- Broadening ITI Networks:** The number of ITIs increased from 9,642 in 2014 to 13,856 in 2026, while seating capacity increased from 17,42,986 in 2014-15 to 20,07,580.
- In 2026, the Directorate General of Training (DGT) signed a Flexi-MoU with Bajaj Auto Ltd **to provide industry-aligned training at the company's manufacturing facilities.**
 - The programme is designed to provide trainees with hands-on experience and exposure to industry technologies.

Conclusion

- India's automobile industry is entering a technology-driven phase in which the availability of a skilled workforce will be as important as production capacity.
- While NAPS 2.0, PM-SETU and industry partnerships are strengthening vocational training, the persistent gap in technical education and practical experience calls for greater industry-academia collaboration, modernised curricula and continuous upskilling.
- Bridging this skill gap is essential to making India's automotive growth more productive, competitive and employment-intensive.

Source: TH

NEWS IN SHORT

PORT OF ANTWERP-BRUGES BELGIUM

Context

- The Belgian Prime Minister pitches the **Port of Antwerp-Bruges, Belgium** as **India's gateway to Europe**.

About

- Bilateral trade** between both countries stood at approximately **\$13.08 billion in 2025-26**.
- Port of Antwerp-Bruges is Europe's second-largest seaport** and will be a key logistics link between India and Europe creating opportunities in diamonds, pharmaceuticals, food processing, maritime services, green hydrogen and infrastructure.

Belgium

- Belgium is a country of **northwestern Europe**, it is one of the smallest and most densely populated European countries.
- Belgium is bordered by **France, Luxembourg, the Netherlands, and Germany**.
- It has a narrow coastline along the **North Sea**.



- The **capital city, Brussels**, is considered a **center of the world economy and diplomacy**, with headquarters of the European Union, the North Atlantic Treaty Organization, and other organizations located in the city.

- It is a member of the **Benelux Economic Union** (with the Netherlands and Luxembourg), the **European Union (EU)**, and the **North Atlantic Treaty Organization (NATO)**.

Source: [TH](#)

UNITED NATIONS CONVENTION ON THE LAW OF THE SEA (UNCLOS)

Context

- Magsaysay award winner Tommy Koh said that the **UN Convention on the Law of the Sea is still the constitution of oceans**.

United Nations Convention on the Law of the Sea (UNCLOS)

- UNCLOS** was adopted in **1982** and came into force in **1994**.
- It lays down a **comprehensive regime of law and order in the world's oceans** and seas, establishing rules governing all uses of the oceans and their resources.
- It establishes the **International Seabed Authority** to regulate mining and related activities on the ocean floor beyond national jurisdiction.

The International Seabed Authority (ISA)

- The International Seabed Authority (ISA) is an autonomous international organization established under:
 - The **1982** United Nations Convention on the Law of the Sea (UNCLOS) and
 - The **1994** Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea.
- All States Parties to UNCLOS are members of ISA.
 - ISA has **170 Members, including India**.
- Headquarters:** Kingston, Jamaica.

Source: [TH](#)

GLOBAL BOND SELL-OFF

In News

- Investors selling government bonds worldwide could raise government borrowing costs, complicate future borrowing plans, and increase private-sector borrowing costs, potentially reducing private investment and slowing economic growth.

Bond

- A bond is a **financial contract** in which an issuer borrows money from an investor and agrees to repay the principal plus interest over a predetermined period of time.
- It can be **traded in the market**, so their prices change with demand and supply.
- When bonds are sold off, **supply goes higher**, and demand goes down, pushing bond prices down.
- Since interest payments are usually fixed, the lower the price you pay, the larger the return you earn relative to what you put in.
 - ♦ So bond prices and bond yields fluctuate in opposite directions.

Source : TH

COLONIAL SPIDER'S VENOM GLAND MAPPED FOR POTENTIAL CANCER DRUG RESEARCH

Context

- A team of Indian researchers has produced the first comprehensive molecular and functional profile of the venom gland of *Stegodyphus sarasinorum*.

Techniques Used in the Study

- **Transcriptomics:** To analyse RNA molecules and identify genes actively expressed in the venom gland.
- **Proteomics:** To identify and characterise the proteins present in the venom.
- **Metabolomics:** To analyse small molecules and metabolic compounds.
- **Confocal Raman Spectroscopy:** To study the molecular and biochemical characteristics of the venom gland.

Anti-cancer Potential

- Venom gland extracts were tested against **Dalton's Lymphoma Ascites (DLA)** cancer cells under laboratory conditions.
- The study identifies **bioactive compounds associated with anti-cancer, antimicrobial and immune-related functions**, while also demonstrating that venom gland extracts can kill cancer cells.

- It also detected **U12 and U20 lycotoxins**, peptide molecules that can disrupt the membranes of bacteria and cancer cells, making them promising templates for the future development of antimicrobial peptides and targeted anti-cancer compounds.

About *Stegodyphus sarasinorum*

- It is a colonial or **permanently social spider** species found across the Indian subcontinent.
- Unlike most spiders, which are solitary hunters, *S. sarasinorum* lives in permanent colonies, constructs communal silk nests and captures prey cooperatively.



Source: TH

ISRO LAUNCHES EARTH OBSERVATION SATELLITE EOS-05

In News

- The Indian Space Research Organisation (ISRO) successfully launched its advanced Earth observation satellite **EOS-05** aboard the **Geosynchronous Satellite Launch Vehicle (GSLV-F17)**.

More about the news

- The successful launch is significant for ISRO after a challenging period in which some recent missions encountered **launch-vehicle or spacecraft anomalies**, prompting extended reviews and checks.
- The **GSLV** was once informally nicknamed "**naughty boy**" due to challenges with its **cryogenic upper stage**, but has since demonstrated improved reliability through successful missions.

About

- The EOS-05, dubbed the "Eye in the Sky", is **India's first dedicated imaging satellite** to be placed in the **geosynchronous orbit**, about 36,000 km from Earth.

- Weighing more than **2,360-kg**, the EOS-05 was the heaviest satellite to be carried by the GSLV rocket until now.
- With a **10-year mission life**, the satellite is designed to image large areas of interest at frequent intervals for purposes such as monitoring natural disasters or keeping track of agriculture or forestry. It will also have **defence uses**.
- India has several active Earth observation satellites operating in **Low Earth Orbit (LEO)**, which periodically pass over different parts of the country to capture imagery. However, EOS-05 operates in a geosynchronous orbit, allowing it to monitor the Indian landmass at much shorter intervals and provide near-continuous coverage.
- The satellite carries **multi-spectral and hyper-spectral bands** to capture selected field images every five minutes and the entire country every 30 minutes.

Source: TH

DECENTRALISED GRAIN STORAGE PLAN IN COOPERATIVE SECTOR

Context

- As India's agricultural production rises, the government is increasingly turning to decentralised storage infrastructure to ensure foodgrains are stored closer to where they are produced.

About

- According to the **Third Advance Estimates for 2025-26**, India's foodgrain production is estimated at 376.563 million tonnes, up 5.3 per cent from 357.732 million tonnes a year earlier.
- At the same time, the **National Food Security Act, 2013**, covers around 80 crore people, making an efficient grain storage and distribution network critical to food security.

The Decentralised Grain Storage Plan in the Cooperative Sector

- The Decentralised Grain Storage Plan in the Cooperative Sector, launched in **2023** to build storage facilities through **Primary Agricultural Credit Societies (PACS)**.
- The initiative seeks to **bring storage, procurement, processing and distribution closer to farmers** while reducing transportation costs and post-harvest losses.



Integrated Infrastructure and Convergence Framework

- The Decentralised Grain Storage Plan in Cooperative Sector operates through the convergence of existing government schemes:
 - ♦ **Agriculture Infrastructure Fund (AIF) scheme:** Provides financing and interest subvention support for the creation and upgradation of post-harvest infrastructure.
 - ♦ **Agricultural Marketing Infrastructure Scheme (AMI):** Provides back-ended capital subsidy for the construction of foodgrain storage facilities.
 - ♦ **Sub Mission on Agricultural Mechanisation (SMAM):** Facilitates the establishment of Custom Hiring Centres and access to agricultural machinery.
 - ♦ **Pradhan Mantri Formalisation of Micro Food Processing Enterprises scheme (PMFME):** Promotes the formalisation and growth of micro food processing units.

Key facilities and services under the Decentralised Grain Storage Plan in Cooperative Sector

- **Custom hiring centres** enable PACS to procure agricultural machinery for rental to farmers. Equipment may include tractors, harvesters, tillers, and other farm machinery.
- **Fair Price Shops** facilitate grain distribution and the sale of processed food products within local communities.
- **Primary processing units** undertake processing activities such as grain cleaning, sorting, and drying, thereby improving the quality and marketability of the produce.
- **Procurement centres** support grain procurement by PACS for state agencies and FCI.

- The Plan provides for **silo-based storage infrastructure** of **50 metric tonnes (MT), 100 MT, and 200 MT** capacities under the cooperative storage model.

Source: [PIB](#)

GPT-6 ASTRA

Context

- OpenAI has released GPT-6 Astra, its newest frontier artificial intelligence (AI) model, claiming gains in computer use, coding, long-running tasks and cybersecurity.

About

- Astra is designed for **end-to-end, multi-step tasks**, moving beyond simple question-answering towards more autonomous, tool-using AI systems.
- It can operate computers and browsers, conduct web research, fill forms, manage documents and emails, analyse data, build websites, write and test software, and troubleshoot problems.
- A key feature is its ability to **handle incomplete instructions**, using available context to make routine decisions while seeking clarification when missing information could significantly affect the outcome.

- Astra also marks a significant development in **AI cybersecurity**, as OpenAI classifies it as the first model to reach its **“Critical” cybersecurity capability level**, indicating its ability, with appropriate tools and access, to identify and exploit previously unknown vulnerabilities.

Source: [IE](#)

GREEN CLIMATE FUND (GCF)

In News

- The Green Climate Fund (GCF) has faced criticism over the seven-year delay in approving Nepal’s \$49.9 million project to reduce risks from Glacial Lake Outburst Floods (GLOFs).

Green Climate Fund (GCF)

- It was established in 2010 by the 194 parties to the United Nations Framework Convention on Climate Change (UNFCCC)
- It is the world’s largest dedicated climate fund, created to address the climate crisis.
- It aims to foster low-emission, climate-resilient development pathways in developing countries.
- It supports developing countries in achieving their climate ambitions and plays a key role in implementing the Paris Agreement.

Source: [DTE](#)

