

1. **Small Satellite Launch Vehicles (SSLVs):** Recently, Hindustan Aeronautics Limited (HAL) signed a Transfer of Technology (ToT) agreement with the Indian Space Research Organisation (ISRO) to manufacture, **Small Satellite Launch Vehicles (SSLVs)**, representing a major milestone in the India's space sector.
  - **About SSLVs :** Developed by ISRO to cater specifically to the launch of small satellites.
    - **Designed as a three-stage launch vehicle** using solid propulsion.
    - Weighs approximately 120 tonnes; measures 34 metres in length and 2 metres in diameter.
    - Equipped with a **Velocity Trimming Module (VTM)** — a liquid propulsion-based final stage used to fine-tune the velocity before satellite insertion into orbit.
    - **Uses and Advantages:** Capable of launching payloads between **10 kg and 500 kg** into **Low Earth Orbit (LEO)**.
      - ✓ Supports mini, micro, and nano satellites, including those developed by students and private players.
      - ✓ Ideal for commercial and on-demand launches, enhancing flexibility for small satellite deployment.
  - **About ISRO:** Began as the **Indian National Committee for Space Research (INCOSPAR)** in 1962, following the vision of **Dr. Vikram Sarabhai**, under the Department of Atomic Energy (DAE).
    - In **1969**, INCOSPAR was restructured into the **ISRO** to expand and formalise space activities within the DAE framework.
    - **National Role:** ISRO serves as **India's national space agency**, and the principal **R&D arm** of the Department of Space.
    - **Primary Functions:** Conducting **space-based operations** (e.g., satellites and launch vehicles)
      - ✓ Advancing **space exploration** missions & facilitating **international space cooperation**
2. **Quantum 5G Fixed Wireless Access (FWA):** Recently, BSNL made a significant stride in India's 5G journey by soft-launching the **"Quantum 5G FWA"** service in Hyderabad.
  - This marks the country's first fully indigenous and SIM-less 5G FWA solution, delivering fibre-like internet speeds through radio waves—eliminating the need for physical cable infrastructure.

- **Key Features : SIM-less Technology:** India's first 5G FWA that works without a physical SIM card. The device connects automatically using BSNL's Direct-to-Device system.
  - **Fully Made in India:** Everything—from the core network to devices—has been built by Indian engineers as part of the **Atmanirbhar Bharat mission**.
  - **Superfast Internet:** Offers blazing speeds of up to **980 Mbps for downloads** and **140 Mbps for uploads**, with less than **10 milliseconds** of delay—great for heavy internet use.
  - **Quick and Easy Setup:** Just plug in the device—no need to dig roads or lay cables. It already reaches over **85% of homes in Hyderabad** through BSNL's existing towers.
  - **Perfect for Today's Needs:** Supports Ultra-HD video, cloud gaming, work-from-home, and smart home gadgets—all with a smooth and reliable connection.
- **5G Technology:** Offers significantly higher bandwidth and lower latency, allowing more devices to connect seamlessly.
  - **Enhanced User Experience:** Improves virtual/augmented reality, gaming, and video streaming with smoother and more immersive performance.
  - **Real-Time Collaboration:** Enables instant interaction in virtual environments, reducing delays and improving remote teamwork.
  - **Support for High-Quality Content:** Facilitates the creation and delivery of advanced media, including 3D graphics and high-resolution visuals.
  - **Foundation for Future Services:** Powers emerging applications like virtual education, remote healthcare, smart cities, and the metaverse.
- 3. **Green Hydrogen :** Recently scientists at the **Centre for Nano and Soft Matter Sciences (CeNS)** in Bengaluru, under the **Department of Science and Technology (DST)**, have built a next-generation **photo electrochemical device** that generates green hydrogen by splitting water molecules using sunlight and earth-abundant materials.
  - **About Photo Electrochemical Device :** That converts light energy, typically solar energy, into chemical or electrical energy.
    - **Working:** Uses a **silicon-based photoanode** with a **n-i-p heterojunction structure** (n-type TiO<sub>2</sub>, intrinsic Si, p-type NiO). This design improves light absorption, charge transfer, and reduces energy loss.

- **Technology Used:** Built using **magnetron sputtering**, a reliable and industry-ready method for coating materials. It uses earth-abundant and low-cost materials.
- **Performance:** Achieves **980 mV surface photo-voltage** and **0.11 V onset potential**.
  - ✓ High efficiency, low cost, long-lasting, and solar-powered.
  - ✓ Can help power homes, vehicles, and industries with clean hydrogen energy.

**4. City Accelerator Program :** Recently, the Ministry of New and Renewable Energy (MNRE) launched the **City Accelerator Program** in a major move to boost India's clean energy transition.

- The launch took place during the **National Conference on Skill Development for Renewable Energy Workforce** held in New Delhi.

• **About City Accelerator Program :** A flagship initiative under the **PM Surya Ghar: Muft Bijli Yojana (PMSGMBY)**—the world's largest rooftop solar scheme.

- Aims to **solarise 1 crore households** and contribute to India's goal of **500 GW renewable energy by 2030**.
- **Objectives:** **Boost Rooftop Solar (RTS)** adoption in urban areas and empower key stakeholders: **Urban Local Bodies (ULBs), DISCOMs, and State Nodal Agencies (SNAs)**.
- **Strategic Urban Focus:** **Targets urban energy demand hubs for decentralised solar adoption**.
  - ✓ Demonstrates **cost savings, grid resilience, and sustainability**.
  - ✓ Promotes **solar-ready cities** through replicable models in governance and finance.
  - ✓ Supports India's commitment to **500 GW non-fossil fuel capacity by 2030**.

• **About PMSGMBY :** Launched on **February 15, 2024** to provide **free electricity to households** through rooftop solar installations.

- **Financial Support:** **Subsidy covers up to 40%** of the cost of rooftop solar panels. Families can receive **up to 300 units of free electricity/month**, saving up to **₹18,000 annually**.
- **Key Benefits:** Free electricity for eligible households, reduction in electricity subsidies and government expenditure and boosts renewable energy use and cuts carbon emissions.

**5. National Time Release Study (NTRS):** Recently, Union Minister for Finance and Corporate Affairs, released the **fifth edition of the National Time Release Study (NTRS)** ,at the **CBIC Conclave** held in New Delhi.

- **About NTRS** : A quantitative performance assessment tool to measure the **average time taken for cargo clearance** from arrival to release.
  - Uses **real-time data** from the Customs Automated System, managed by the **Directorate General of Systems and Data Management**.
  - Aligned with India's efforts under the **National Trade Facilitation Action Plan (NTFAP) 3.0**.
  - **Scope and Coverage (Since 2019)**: Conducted at **15 major trade locations**, including: **Seaports, Air Cargo Complexes (ACCs), Inland Container Depots (ICDs) and Integrated Check Posts (ICPs)**
  - **New Locations in 2025 Edition**: Kochi Seaport, Garhi Harsaru ICD and Jaigaon Land Customs Station (LCS)
- **About NTFAP**: Aims to implement the **World Trade Organization (WTO)'s Trade Facilitation Agreement (TFA)** in India.
  - **Objective**: Enhance ease of doing business and make India's trade system more transparent, predictable, and efficient.
- 6. **11th International Day of Yoga (IDY)**: Recently, the **National Science Centre (NSC), Delhi**, under the **National Council of Science Museums (NCSM), Ministry of Culture**, celebrated the **11th International Day of Yoga (IDY) on 21<sup>st</sup> June** with a series of engaging, day-long activities.
  - **About IDY** : An **annual global observance** promoting yoga as a tool for holistic health and sustainable living.
    - Recognized by the **UN General Assembly (UNGA)** through Resolution 69/131 on **December 11, 2014**. First celebrated globally on **June 21, 2015**.
    - **Theme for 2025**: **"Yoga for One Earth, One Health"**
    - **Objectives**: Promote physical, mental, and emotional wellness through yoga and enhance India's cultural diplomacy through soft power.
  - **Key Features: Global Adoption**: Recognized by **175 UN member states**; participation reached **24.53 crore** in 2024.
    - **Mass Participation**: Coordinated by the **Ministry of AYUSH**, with support from state governments, UN agencies, and Indian missions abroad.
    - **Cultural Leadership**: Positions India as the global leader in yoga and wellness traditions.

7. **Digital Payments Award 2024–25** : Recently, **India Post Payments Bank (IPPB)** received the prestigious **Digital Payments Award 2024–25** from the **Department of Financial Services (DFS), Ministry of Finance**, in recognition of its innovative digital solutions and strong grassroots impact in promoting financial inclusion.
- **About Digital Payment Award:** Aims to honor outstanding efforts in advancing digital payment ecosystems across India.
    - **Eligibility:** Applicable to **banks, payment banks, fintech startups**, and other **financial institutions** that have made noteworthy contributions through innovative and impactful digital payment initiatives.
  - **About IPPB:** A payments bank fully owned by the Government of India and operates under the **Department of Posts, Ministry of Communications**.
    - **Launched on:** September 1, 2018.
    - **Objectives of IPPB:** To drive large-scale **financial inclusion** by offering affordable, accessible, and reliable banking services to every citizen, especially in rural areas—thereby bridging the urban-rural divide and advancing the goals of Digital India and a less-cash economy.
8. **Mt. Lewotobi Laki-laki** : Recently, **Mt. Lewotobi Laki-laki**, one of Indonesia's most active volcanoes, erupted violently, propelling a massive ash plume up to 11 kilometers into the sky.
- **About Mt. Lewotobi Laki-laki** : Situated on **Flores Island in East Nusa Tenggara province**, Indonesia. Lies within the highly seismic **Pacific "Ring of Fire"**, known for frequent volcanic and earthquake activity.
    - The Lewotobi complex features **twin stratovolcanoes**, aligned northwest to southeast and separated by a saddle.
    - The volcano derives its name from **Lewotobi Lakilaki** ("male") and **Lewotobi Perempuan** ("female"), referring to its two distinct cones.
      - ✓ **Lewotobi Lakilaki** (1,584 mts tall) : Features a 400-meter-wide summit crater open to the north and known for frequent eruptions over the 19th and 20th centuries.
      - ✓ **Lewotobi Perempuan** (1,703 mts tall) : Contains a 700-meter-wide crater and has seen only two recorded eruptions in history