



## Cabinet Approves India's 6th Semiconductor Unit in Uttar Pradesh Under India Semiconductor Mission.

- The new plant will be set up near **Jewar Airport in the Yamuna Expressway Industrial Development Authority (YEIDA) region**.
- It's a **Joint venture** between **HCL and Foxconn**
  - Focus:** Manufacturing **display driver chips** for Mobile phones, Laptops, Automobiles, etc.
- India's Growing Semiconductor Ecosystem**
- Expanding Market Size:** India's semiconductor market is expected to grow from \$22 billion in 2019 to \$110 billion by 2030 (10% of global consumption)
  - Increasing Local Sourcing:** Only 9% of semiconductor components were locally sourced in 2021. The goal is to increase it to 17% by 2026.
  - Robust R&D and Design:** India has ~20% of the world's semiconductor design engineers & designs ~3,000 integrated circuits (ICs) annually.
  - Node Shrinking:** Technology nodes (e.g., 7 nanometers (nm), 5nm, 3nm, 2nm) refer to the process technology used to fabricate chips. **Smaller nodes** generally allow:
    - Higher** transistor density
    - Lower** power consumption
    - Faster** processing speeds
- 


Semicon India Programme

Central and state subsidies up to 70 percent for setting up fabs, testing, and design units.




Chips-to-Startup (C2S) Programme

Training 85,000 engineers in chip design, Very Large Scale Integration (VLSI), and embedded systems across 113 institutions.



SPECS Scheme

Offers 25 percent capital subsidy on investments in chip components and electronics.



Design-Linked Incentive (DLI)

Promoting Indian IP creation in chip design.

**Reasons for India to Prioritize Semiconductor Ecosystem**

  - Reducing Trade Deficit and Supply Chain Dependence:** India imported **Rs 1.71 lakh crore in semiconductors** in 2024 & ~38% of total chip imports came from **China**.
  - Economic Multipliers:** Each semiconductor job could support up to 16 others (16X).
  - Spillover and "Learning-by-Doing" Effects:** Enhances **capabilities in adjacent high-tech areas** such as robotics, precision tools, and advanced electronics.

## India Unveils First Cluster of Five Carbon Capture and Utilisation (CCU) Testbeds for Cement Sector

**Aim** is to **develop & deploy innovative CCU Test bed in Cement Sector** with thrust on **Developing CO<sub>2</sub> capture + CO<sub>2</sub> Utilization** integrated unit in an **Industrial set up** through **Public Private Partnership (PPP)** funding model.


  - Ministry:** Department of Science and Technology (DST) under Ministry of Science & Technology.
  - The **testbeds** will showcase **innovative processes** like-
    - Oxygen-enhanced calcination:** CO<sub>2</sub> to concrete blocks & olefins (e.g., ethylene, propylene).
    - Carbon-negative mineralization:** Locks CO<sub>2</sub> into rock.
    - Vacuum Swing Adsorption:** Separate CO<sub>2</sub> from cement kiln gases and integrate it back into construction materials.

**About Carbon Capture and Utilisation (CCU)**

  - Definition:** CCU is a set of technologies that allow for the capture & use of carbon as a feedstock for making essential products such as fuels, chemicals, etc, which are predominantly derived from fossil resources.
  - Carbon Capture:**
    - From industrial (e.g., cement plants) or energy (e.g., biomass power plants) sources:** Technologies like membranes, solvent absorption, or adsorption separate CO<sub>2</sub> from flue gases.
    - Directly from the air (Direct Air Capture - DAC):** Ambient air is drawn through a gas trapping system where CO<sub>2</sub> is isolated from the rest of the air and then released to be used or stored.
  - Carbon Utilisation:** Once captured, CO<sub>2</sub> can be utilised through **two main pathways**:
    - Direct Utilisation & CO<sub>2</sub>-to-Products (See image)


CO<sub>2</sub> Utilization Pathways

Direct Utilisation




Enhanced Oil Recovery (EOR)

CO<sub>2</sub> injected into **oil/gas reservoirs** to boost extraction



Food & Healthcare


**High-purity CO<sub>2</sub>** used in **food processing** and **medical applications**



Industrial Uses


As a **solvent** (e.g., **dry cleaning**), **heat transfer fluid**, **welding gas**, etc.

CO<sub>2</sub>-to-Products




Chemicals

Used in **urea production**, **plastics** (e.g., **polycarbonates**), and **microbiological conversions**



Fuels

Converted to **methanol** or further processed into **gasoline** and **diesel** via **Fischer-Tropsch synthesis**



Mineral Carbonates

Reacted with **calcium/magnesium** to produce **building materials**. E.g., **cement**

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

1/4

## Security Forces conduct the biggest-ever operation against Naxalism

In line with the goal of making India Naxal-free by March 31, 2026, 31 Naxalites have been killed at Karreguttalu Hill (KGH) on Chhattisgarh-Telangana border.

- KGH is where the **Unified Headquarters** of major Naxal organizations like the **People's Liberation Guerrilla Army (PLGA) Battalion 1** etc. were located.
- Operation was a coordinated effort of **Commando Battalion for Resolute Action (CoBRA)** of CRPF, **Special Task Force (STF)** and **District Reserve Guards (DRG)**.

### About Left-wing extremism (LWE)

- **Left-wing extremism (LWE)**, or **Naxalism**, originated in 1967 Naxalbari, West Bengal.
- **Ideology:** Maoist ideology of use of **armed insurrection** and **parallel governance structures** as means to **capture State power**.
- **Red Corridor:** A stretch of districts across states like **Chhattisgarh, Jharkhand, Odisha, Maharashtra, Kerala, West Bengal, Madhya Pradesh, and parts of Andhra Pradesh and Telangana** affected by Maoist insurgency.
  - ⊕ The number of **Naxal-affected districts** decreased from **126 to 18** while those **most affected** by Naxalism reduced from **35 (2024) to 6 (2025)**.
  - ⊕ In **2024**, 290 Naxalites were neutralized, 1,090 were arrested, and 881 surrendered.
- **Factors responsible for Persistence of LWE:** **Socio-economic** (social alienation, sub-optimal access to **education, healthcare**, etc.), **Governance issues** (Ineffective implementation of **Forest Rights Act** and **PESA Act**, state-high handedness).

### Initiatives to counter LWE

- **National Policy and Action Plan (2015):** Based on the **zero-tolerance approach** towards Naxalism.
- **Operational strategy 'SAMADHAN'** which included Smart leadership, Aggressive strategy, Motivation and training, etc.
- **Security-related measures:** Umbrella scheme '**Modernization of Police Forces**'
- **Development-related measures:** Dharti Aaba Janjatiya Gram Utkarsh Abhiyan, Aspirational District Programme, etc.

## National Statistics Office (NSO) Makes Changes in Periodic Labour Force Survey (PLFS) from 2025

The NSO (under Ministry of Statistics & Programme Implementation (MOSPI)) has brought changes in the PLFS to address the requirement of the high frequency labour market.

- **PLFS was launched in 2017 by NSO, MOSPI.**

### Key Changes in PLFS from January 2025

- **First time ever:** Monthly release of labour indicators like, **Labour Force Participation Rate (LFPR)**, **Worker Population Ratio (WPR)**, **Unemployment Rate (UR)**, at the all-India level.
  - ⊕ It will be based on **Current Weekly Status (CWS)**.
- **Quarterly Estimates Extended:** Estimates of employment unemployment indicators will now covers both rural and urban areas (previously urban only).
- **Annual Reports on Calendar Year Basis:** New cycle will be January–December format (Previous: July–June format)
  - ⊕ This ensures **better alignment** with international databases.
- **Enhanced Sample Size:** The sample size of **households** has been **increased by 2.65 times**.
  - ⊕ This improves **the precision and reliability** of labor market indicator estimates.
- **Improved Geographical Representation:** District made the primary geographical unit for most areas, improving localized data collection.
  - ⊕ **Rural stratification** is based on village distance—within **5 km of district headquarters or cities/towns with over 5 lakh population**.

### Labor Market Key Terms Explained



#### Labour Force Participation Rate (LFPR)

LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population.



#### Worker Population Ratio (WPR)

WPR is defined as the percentage of employed persons in the population.



#### Unemployment Rate (UR)

UR is defined as the percentage of persons unemployed among the persons in the labour force.



#### Current Weekly Status (CWS)

The activity status determined on the basis of a reference period of last 7 days preceding the date of survey is known as the current weekly status (CWS) of the person.

## Ministry of New and Renewable Energy (MNRE) Eases Solar panel Efficiency Norms for Off-grid Rural Projects

This means solar modules with comparatively lower efficiency can now be included in the government's **Approved List of Models and Manufacturers (ALMM)**.

➤ **ALMM:** It is a list of models and manufacturers of solar photovoltaic (PV) modules approved by the MNRE.

### Key Changes in Solar Efficiency Norms (May 2025 Amendment)

#### ➤ Efficiency Standards Reduced:

- ⊕ **Previous (Off-grid <200W) Efficiency:** Crystalline silicon at **19%** and Cadmium Telluride (CdTe) at **18%**
- ⊕ **New Standard:** Both technologies at **18% efficiency**.

#### ➤ Scope of Change: Applies only to **off-grid solar applications below 200W**, such as: **Solar lanterns, Micro solar grids, Streetlights, Small fans and appliances**

- ⊕ Does **not affect** larger systems (e.g., rooftop solar, pumps)
- ⊕ **An off-grid solar system:** It generates electricity from sunlight and stores it in batteries, allowing it to operate independently of the power grid.

#### ➤ Creation of a New Category: Introduction of **Distributed Renewable Energy (DRE)** category to support **smaller manufacturers & Wider rural electrification**.

- ⊕ **Distributed Renewable Energy (DRE):** It refers to electricity generated from renewable sources, like the sun or wind, near the point of use.

### Concerns

- Risk of **lower energy output per unit area**
- **Faster degradation** of panels may impact **long-term reliability**
- **Need for strict quality enforcement** to avoid market saturation with substandard modules

### Significance of the Changes

- **Improved Accessibility & Affordability:** Lower efficiency threshold reduces **cost of solar kits**, making them **more affordable** for rural consumers.
- **Support for Small Manufacturers:** Encourages **local and small-scale production**, fostering rural solar enterprise.
- **Boost to Rural Electrification:** Facilitates expansion of solar-powered lighting and appliances in **hard-to-reach areas** where grid power is absent or unreliable.
- **Technology Implications:** Enables wider use of **polycrystalline silicon** (cheaper) and **CdTe thin-film** modules (lower cost, good in low light).

### Also In News



#### Kendu leaves

**Tribal women** of Kalahandi, **Odisha** successfully **protested** the Forest Department's denial of Gram Sabha-issued transit permits for **kendu leaf transportation**.

#### About Kendu leaves (Tendu Leaf, Diospyros Melanoxylon)

- Known as the '**Green Gold of Odisha**', they are a vital **minor forest produce (MFP)** for the **state's economy** as well as **livelihood of forest dwellers**.
- Kendu leaf is a **nationalized product** like Bamboo and Sal seed.
  - ⊕ This means its **collection, processing, and trade** are regulated by the government.
- **Use:** For **wrapping bidis** due to characteristics like matching aroma with Tobacco,
- **Top producer States:** Madhya Pradesh, Chhattisgarh, Odisha.



#### Rights of Pedestrians

The **Supreme Court (SC)** passed an **order affirming the constitutional rights of pedestrians**.

#### About the SC Order

- SC stated that the **Right to have unobstructed and disabled-friendly footpaths** is guaranteed under **Article 21**.
  - ⊕ **Article 21 (Protection of life and personal liberty)** states that no person shall be deprived of their life except according to the procedure established by law.
- **The SC issued directions:**
  - ⊕ **All public roads** must have **footpaths** and must be **accessible** and usable by **persons with disabilities**.
  - ⊕ **Removal of encroachments** from footpaths is **mandatory**.
  - ⊕ **States/UTs** must evolve **policies** to ensure the availability and maintenance of footpaths and footways.



## Agamas

In the context of appointment of **archakars (priests) to temples**, the Supreme Court requested the **Committee** of Madras High Court to **identify Agamic temples** as against non-Agamic temples in Tamil Nadu.

### About Agamas

- Agamas are **post-Vedic scriptures** conveying **ritual knowledge**. They are seen as **manuals for temple management**.
- Methods of worship: Image worship of God through rituals (Tantra), symbolic charts (Yantra) and verbal symbols (Mantra).**
- They broadly deal with **jnana** (knowledge), **Yoga** (meditation), **Kriya** (rituals) and **Charya** (ways of worship).
- Divided into **3 sections: Vaishnava, Saiva and Sakta**.
- They do **not derive their authority from the Vedas**, but are **Vedic in spirit and character**.
- Important books:** Isvara-Samhita, Narada-Pancharatra, Spanda-Pradipika, Mahanirvana-Tantra



## Two-dimensional (2D) metals

A team of scientists from China has reported a way to produce **2D sheets of bismuth, gallium, indium, tin, and lead**.

- According to the team, the **bismuth sheet was just 6.3 Å (Angstrom) thick** — a depth of roughly **two atoms** and sufficient for electrons in the metal to be confined in 2D.

### Significance of the Invention (2D Metals):

- Breakthrough in Materials Science:** Enables the creation of truly atomically thin metal sheets.
- Topological Insulators:** Materials like 2D bismuth and tin can act as topological insulators, conducting electricity only along their edges.
- ☉ Ideal for faster, low-energy computers.



## Akashteer

It played a pivotal role in neutralising drone and missile threats during recent border skirmishes with Pakistan.

### About Akashteer

It is an AI-driven, fully automated air defence solution, designed to intercept and neutralise drones, missiles, micro UAVs, and loitering munitions.

**Developed:** Indigenously by Bharat Electronics Limited (BEL).

### Key Features:

- Integrated Network:** Links surveillance, radar, and command units.
- Situational Awareness:** Delivers real-time airspace data to all units.
- Low-Altitude Monitoring:** Tracks and controls threats in battle zones.



## UN Security Council's (UNSC) 1267 Sanctions committee

Indian officials briefed the monitoring team of the **UNSC's 1267 Sanctions Committee** on the activities of The Resistance Front (TRF).

### About 1267 sanctions Committee

- It is also called the **ISIS and Al-Qaeda Sanctions Committee**.
- It was established in 1999**, to focus on combating terrorism linked to ISIS, Al-Qaeda, and related groups.
- It comprises all **permanent and non-permanent** members of the UNSC.
- The committee decides on sanctions and travel bans for terror organisations and ensures the enforcement of these measures under UNSC resolutions **1267 (1999), 1989 (2011), and 2253 (2015)**.



## International Centre for Genetic Engineering and Biotechnology (ICGEB)

Union Minister of State for Science & Technology Dedicated India's first of its kind public funded DST-ICGEB 'Bio-Foundry' at 31st ICGEB Board of Governors Meet.

### About ICGEB

- Founded in 1983.
- It has 69 member countries, India is one of the founding members of ICGEB.
- It is a premier intergovernmental organization dedicated to advancing research in the life sciences.
- The organization operates through three main centres: New Delhi (India), Trieste (Italy) and Cape Town (South Africa).
- The research themes broadly includes infectious disease, non-communicable disease, medical biotechnology, industrial biotechnology and plant biotechnology.



## Bhargavastra

India has successfully test-fired an indigenously developed anti-drone system, Bhargavastra.

### About Bhargavastra

- It is a low-cost, 'hard kill' anti-drone system designed to neutralize threats from drone swarms.
- Developed By:** Solar Defence and Aerospace Limited (SDAL).
- Key Features**
  - ☉ Two-layer security system:
    - ◆ **Layer 1:** Unguided micro-rockets with a 20m lethal radius for swarm drones
    - ◆ **Layer 2:** Guided micro-missiles for precision strikes
  - ☉ **Range:** Detects drones from up to 2.5 km. Radar detects aerial threats from 6–10 km
  - ☉ **Terrain adaptability:** Above 5000 meters
  - ☉ **Modular design:** Allows integration of soft kill options like jamming and spoofing.
  - ☉ **C4I-enabled command centre:** Enhances network-centric warfare integration.

## Place in News



## Colombia

China and Colombia sign the Belt and Road cooperation pact.

### About Colombia

- Capital:** Bogota
- Location:** Northwestern part of South America.
- Political Border:** It is bordered by Panama to the northwest; by Ecuador and Peru to the south; by Venezuela to the east, and by Brazil to the southeast.
  - ☉ Bounded by Caribbean Sea in the north and by the Pacific Ocean in the west.
- Geographical features:** The Andes mountains dominate the western flank, the Amazon Forest lies in the southeast.
- Natural Resources:** Petroleum, natural gas, coal, iron ore, nickel, gold, copper, emeralds, hydropower.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI