

Government notifies SEZ Reforms to Boost Semiconductor and Electronics Component Manufacturing

The Ministry of Commerce and Industry published **Special Economic Zones (Amendment) Rules, 2025**.

Important provisions

- **SEZ set up exclusively for semiconductors or electronics** will require a minimum contiguous land of 10 hectares, reduced from the earlier requirement of 50 hectares.
- **Units providing semiconductor manufacturing**, the value of goods received or exported on a free-of-cost (FOC) basis must now be included in **NFE calculations**.
 - ⊕ **Net Foreign Exchange (NFE)** refers to the difference between a company's foreign exchange earnings (primarily from exports) and its foreign exchange expenditures (primarily from imports).

What is SEZ?

- **Definition:** SEZ is a geographically delineated duty-free enclave and shall be deemed to be a foreign territory for the purposes of trade operations and duties and tariffs.
- **SEZs Policy** was announced in 2000, and the **SEZ Act** was passed in 2005.
- **Objectives of the SEZ Scheme:** Generation of additional economic activity, promotion of exports of goods and services, employment generation, etc.
- **Baba Kalyani committee recommendations for SEZs:** Need Framework shift from export growth to broad based employment and economic growth (Employment and Economic Enclaves-3Es), separate rules for services and manufacturing, etc.

Initiatives

- **For Semiconductor:**
 - ⊕ **Semicon India programme** with four schemes like Scheme for setting up of Semiconductor Fabs in India, Design Linked Incentive Scheme etc.
 - ⊕ **Modernisation of Semi-Conductor Laboratory, Mohali.**
- **For electronics manufacturing:**
 - ⊕ **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors** as a part of Atmanirbharta in electronics.
 - ⊕ **Modified Electronics Manufacturing Cluster Scheme:** For cluster based manufacturing.
 - ⊕ **Production Linked Incentive (PLI) Schemes.**

Ocean acidification breaches planetary boundary, putting marine ecosystems at severe risk: Study

Ocean acidification refers to a reduction in the pH of the ocean over an extended period of time, caused primarily by uptake of **carbon dioxide (CO₂)** from the atmosphere.

- Ocean acidification has been called the "evil twin of global warming" and "the other CO₂ problem".

Ocean Acidification Process

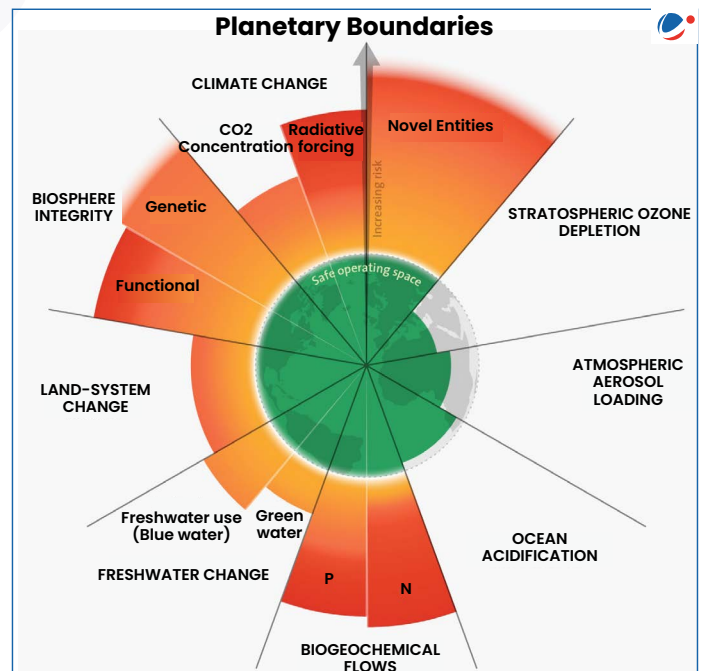
- Carbon dioxide (CO₂) from the atmosphere dissolves in the ocean, creating **aqueous carbon dioxide (CO₂ (aq))**.
 - ⊕ This dissolved CO₂ reacts with water (H₂O) to form **carbonic acid (H₂CO₃)**.
- Carbonic acid then **breaks down into bicarbonate (HCO₃⁻) and hydrogen ions (H⁺)**.
 - ⊕ The increase in **hydrogen ions makes the ocean more acidic**.

Causes of ocean acidification

- Ocean absorbs around 25% of **annual anthropogenic CO₂ Emission**.
- **Natural CO₂ emission** like Submarine Volcanic Activity, Ocean Circulation, Ocean Sediment Breakdown etc.

Impact of Ocean Acidification

- Acidic waters lead to **dissolution of calcium carbonate structures** (Affecting organisms like corals, shellfish, and plankton) and **Ecosystem alterations** affecting fisheries and coastal protection.
- Ocean acidification harms **phytoplankton**, thus reducing ocean's productivity.
- Ocean acidification can **indirectly affect cloud formation by impacting the production of dimethyl sulfide (DMS)** by phytoplankton.
 - ⊕ DMS is a sulfur compound that **acts as a cloud condensation nucleus**, meaning it helps form cloud droplets.



Planetary Boundaries

- Planetary boundaries are natural limits for key global systems like climate, water, and wildlife.
 - ⊕ When crossed, these systems can no longer maintain a healthy planet.

Accused Has Right To Voluntarily Undergo Narco-Analysis Test Subject To Court's Permission: SC

The SC in **Amlesh Kumar v State Of Bihar** ruled that an **accused person can choose to take a narco-analysis test**, but only at the right time during trial.

- Narco-Analysis involves administering barbiturates or other chemicals, often **sodium pentothal**, to lower a person's inhibitions with the aim of encouraging them to reveal information and emotions more freely.
- The SC in this judgement overturned Patna High Court's order that allowed police to conduct narco-analysis tests on all accused in a dowry harassment case involving a missing woman.

Key Highlights of SC judgement

- It was **wrong to accept submission for conducting narco-analysis on all accused persons** as involuntary tests violates:
 - ⊕ **Articles 20(3)** (right against self-incrimination).
 - ⊕ **Article 21** (right to life and personal liberty) of the Constitution (as established in **Selvi v. State of Karnataka**).
- Voluntary narco-analysis reports **cannot be directly admitted as evidence**. Conviction cannot be based solely on such information without supporting evidence (**Vinobhai v. State of Kerala and Manoj Kumar Soni v. State of M.P. cases**).
- The accused can **voluntarily undergo narco-analysis but only while presenting own evidence** and he does not have absolute/indefeasible right for the same.



NHAI releases first-ever Asset Monetization Strategy for the Road Sector to drive growth

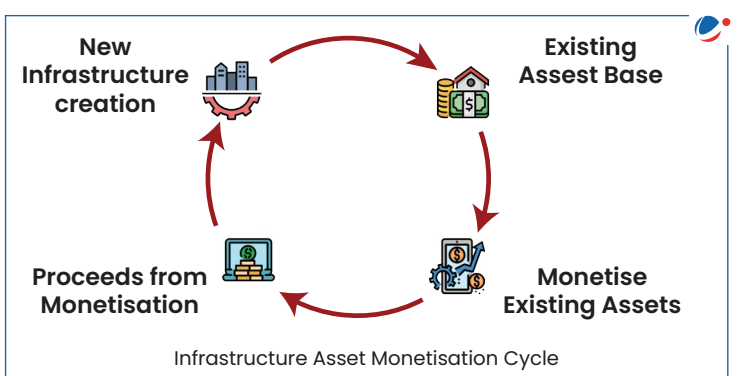
National Highways Authority of India's Asset Monetization strategy aligns with **Assets Monetization Plan - 2025-30**.

Key provisions of Strategy:

- **Aim:** To unlock value of operational National Highway assets and increase Public Private Partnership in India's infrastructure development.
- **Three core pillars:** Value Maximization of Assets, Transparency of Processes, and market development.
- **Three modes of asset Monetization:** Toll-Operate-Transfer (ToT), Infrastructure Investment Trusts (InvITs), and securitization models.
 - ⊕ **Toll-Operate-Transfer (ToT):** Concessionaires by paying lump sum amount **take rights to maintain and operate the road**; in lieu of this, s/he will collect user fees (toll) for these roads for the duration of the concession period.
 - ⊕ **Infrastructure Investment Trust (InvIT):** It is like a mutual fund, which **enables direct investment** of money from individual/institutional investors in infrastructure.
 - ◆ Earn income through **tolls, rents, interest or dividends from their investments**.
 - ◆ Introduced in India in 2014 and **regulated by Securities and Exchange Board of India (SEBI)**.
 - ⊕ **Securitization model:** Securitization is the process in which certain types of assets are pooled so that they can be **repackaged into interest-bearing securities**.
 - ◆ The **interest and principal payments** from the assets are passed through to the **purchasers of the securities**.

Asset Monetisation

- **Definition:** Limited period transfer of performing assets (or disposing of non-strategic / underperforming assets) to unlock "idle" capital and reinvesting it in other assets or projects that deliver improved or additional benefits.
- **Need:** Unlocks value from public investment in infrastructure, and utilises productivity in private sector.
- **First suggested by the Vijay Kelkar Committee** in 2012 on the roadmap for fiscal consolidation.



Labour ministry study on Gig workforce in India

According to the study India's gig and platform workforce is set to reach nearly **62 million by 2047**.

- Gig workers refer to workers outside the **traditional employer-employee relationship**. For example, Zomato and Swiggy Delivery Agents.

Status of Gig Economy In India:

- Accounts for 56 per cent of all new jobs created in India.
- **Rapid expansion:** Driven by technological advancements, shifting labour market preferences.
 - ⊕ From ride-sharing and food delivery, it has now expanded into healthcare, education, creative services, and consulting.
 - ⊕ Employed **7.7million workforce in 2020–21** (NITI Aayog report):
 - ◆ Expected to grow to **23 million by 2030**.

Challenges:

- **Working Conditions:**
 - ⊕ Lack of job security, social security benefits.
 - ⊕ Long working hours, unbalanced schedules leading to stress and health safety issues as evidenced by COVID-19.
- **Absence of Grievance Redressal:** Instances of ID blocking of workers for raising voice against malpractices.
- **Digital illiteracy** especially among women.
- **Gender Discrimination:**
 - ⊕ Youth, specifically women, often earn less.
 - ⊕ Dual burden on women: Jobs and taking care of the family.

Steps Needed:

- **Fair labour practices:**
 - ⊕ Access to social security benefits, fostering skill development.
 - ⊕ Ensuring a minimum income and fair working hours.
 - ⊕ Streamlined grievance and dispute resolution.
- Establishing a **statutory national registry**.



Solar Storms are causing Starlink Satellites to fall from the Sky

Starlink has **lost 523 satellites** from 2020 to 2024, the years associated with the **peak of Solar Cycle**.

- Solar cycle is an **approximately 11-year cycle** that tracks the rise and fall of **activity on the Sun's surface**.
- This cycle **affects the Sun's magnetic field, solar flares, coronal mass ejections (CMEs), and the overall "space weather"**.
- **Geomagnetic storms** caused by Sun's eruptions **increased atmospheric drag**, causing satellites to re-enter faster than expected.
- **These lost satellites** have raised concerns about **atmospheric pollution and space Debris/Junk**.

Space Debris and Its Status:

- Space debris is defined as **all non-functional, man-made objects, including fragments and elements thereof**, in Earth's orbit or **re-entering into Earth's atmosphere**.
- **Space debris objects larger than 1 cm in size** (Large enough to be capable of causing catastrophic damage) is **estimated to be over 1.2 million** (ESA Space Environment Report 2025).
- **Key Sources:** Majority of debris objects originate from **on-orbit break-ups as well as on-orbit collisions**.
- **Potential Consequences:** It can damage satellites, disrupt communication and navigation systems, and potentially endanger astronauts.
 - ⊕ Additionally, **space debris** can contribute to **Kessler Syndrome**, a theoretical scenario where **collisions generate more debris**, making **certain orbits unusable**.

Initiatives Taken to tackle Space Debris

Global

- **Inter-Agency Debris Coordination Committee (IADC)**, established in 1993
- **Zero Debris Charter:** Signed by 12 countries - Austria, Belgium, Cyprus, etc.

India

- **Debris Free Space Missions (DFSM) 2030**.
- **ISRO System for Safe and Sustainable Operations Management (IS40M)**
- **Project Network for Space Object Tracking and Analysis (NETRA)**

Also In News

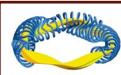


Nickel

Scientists have developed a new method to extract nickel which is energy efficient and cuts direct carbon dioxide emissions by up to 84% compared with the current practice.

About Nickel (Atomic number 28)

- **Properties:** lustrous, silvery-white metal which is hard, ductile, can be magnetised and **exhibits a mixture of ferrous and nonferrous metal properties**.
- **Main minerals:** Pentlandite, garnierite and nickeliforous limonite etc.
- **Applications:** **Resists corrosion** and is used to plate other metals, rechargeable batteries especially Electric Vehicles (EVs).



Stellarator

Scientists at Germany's **Wendelstein 7-X stellarator** achieved a **record fusion performance by heating plasma to 30 million degrees Celsius**.

About Stellarator

- **Definition:** **Fusion reactors** that use magnetic fields to confine plasma in a **donut-shaped torus**, creating conditions for fusion.
- **Employ strong electromagnets:** To generate twisting magnetic fields that wrap around the donut shape.
- **Advantages over Tokamaks:** **Lower power requirements, greater design flexibility**, and simpler plasma control.
- **Example:** Helically Symmetric Experiment (HSX) stellarator in Wisconsin etc.



Sustainable Energy for All (SEfor ALL)

NTPC ties up with SEforALL for energy transition roadmap.

About SEfor ALL:

- **Launched by** former UN Secretary-General Ban Ki-moon in 2011.
- It is an **independent organization, hosted by UNOPS**.
- **Global mandate:** To accelerate progress on the energy transition in emerging and developing countries.

About UN office for Project Services (UNOPS):

- Now a **separate, self-financing UN Agency** which was part of UNDP until 1994.
- **Headquarter:** Copenhagen, Denmark
- **Objective:** Provides project services to the UN system and its partners.
 - ⊕ Also helps **implement humanitarian and development projects**, focusing on sustainable development and the Sustainable Development Goals.



Quality Council of India (QCI)

The Quality Council of India commemorated World Accreditation Day 2025.

About World Accreditation Day 2025 (June 9th)

- A global initiative by **International Laboratory Accreditation Cooperation (ILAC)** and the **International Accreditation Forum (IAF)** to promote the value of accreditation.
- **This year's theme:** Accreditation: Empowering Small and Medium Enterprises (SMEs).

About QCI:

- **Established:** In 1996 as a **National Accreditation body**.
 - ⊕ Accreditation is an **independent check** to ensure that **testing and certification bodies** meet recognized standards.
- QCI operates as an independent autonomous organization through a **PPP model**.
 - ⊕ Supported by the **Government of India and three premier industry associations** - ASSOCHAM, CII, and FICCI.
- **Nodal Department:** Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- Chairman of QCI is **appointed by the Prime Minister** on the recommendations of the industry to the Government.



The International Year of the Woman Farmers

UN General Assembly (UNGA) has declared **2026 as the International Year of the Woman Farmer**.

- **Proposed by** the United States of America and adopted by consensus.
- **Aim:** To highlight the crucial role of women farmers in food security, nutrition, and poverty eradication, and promote gender equality and empower women.



National Investment and Infrastructure Fund (NIIF)

Union Minister for Finance chaired 6th meeting of the Governing Council of the NIIF

About NIIF (Created in 2015)

- A **Sovereign-linked Alternative Asset Manager**, established by the Government of India (**having a share of 49 %**).
- It is a **collaborative investment platform** for international and Indian investors.
- Set up as a trust **registered with Securities and Exchange Board of India ("SEBI")** as a **Category II Alternate Investment Fund ("AIF")**.
- Its governing council is headed by the Finance Minister.
- **Key Funds under NIIF:**
 - ⊕ Fund for infrastructure (**Master Fund**)
 - ⊕ The fund of funds (**Private Markets Fund**)
 - ⊕ Fund for climate and sustainability as well as India Japan corridor (**the India Japan Fund**)
 - ⊕ The fund focuses on growth equity (**Strategic Opportunities Fund**).



Ejiao

Donkey prices soar in Pakistan due to China's demand for Ejiao

About Ejiao: It is a gelatin used in:

- Traditional Chinese medicine, made by stewing and concentrating donkey skin
- In clinics for its biological advantages of being anti-fatigue, immunity-improving properties, for tumour suppression, and for its anti-anaemia effect.



Tardigrades

Indian astronaut Shubhanshu Shukla will take Tardigrades to the International Space Station (ISS) for an experiment.

About Tardigrades (water bear or moss piglet)

- **Specification:** Half a millimetre long eight-legged segmented micro-animal.
- **Extremely hardy:** Can endure extreme hot and cold temperature levels by means of cryptobiosis, crushing pressures and radiation and found worldwide.
 - ⊕ **Cryptobiosis** is a state of extreme inactivity in response to adverse environmental conditions. In the cryptobiotic state, all metabolic procedures stop, preventing reproduction, development, and repair.
- **Two classes are recognised:** the Eutardigrada and the Heterotardigrada; the latter includes some marine species.

Personality in News



Bhagwan Birsa Munda (1875–1900)

The Prime Minister paid tributes to **Bhagwan Birsa Munda on the occasion of his Martyr's Day**.

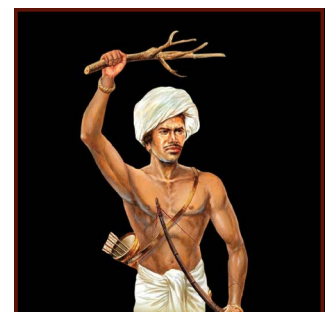
About Birsa Munda

- He was born in Ulihatu village, **located in the Chotanagpur Plateau of Jharkhand**.
- He belonged to the Munda tribe, and was also known as '**Dharti Aaba**' (**Father of the Earth**).

Contributions

- **Munda Rebellion/ Ulgulan (The Great Tumult)**, between 1899 and 1900: tribal uprising against the British colonial administration and its policies.
- **Founded a new sect known as the Birsait**.
- Took up a campaign against alcoholism, witchcraft and sorcery and promoted **among people awareness about cleanliness**.

Values: Bravery, scientific temperament, Justice, Leadership etc.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI