

NEWS TODAY

India's Solar Imports could touch \$30 billion annually by 2030: Global Trade Research Initiative (GTRI) Report

It showcases **China's dominance over the global solar industry** affecting local manufacturing in India and other countries.

- Presently, China controls over **80% of global solar production and exports.**

Challenges in India's Solar Manufacturing Sector highlighted by report:

- **High dependency on Imports (e.g. reliance on China)** limits domestic manufacturing capacity.
- **Limited raw material supply:** India lacks capacity to produce high-purity **polysilicon and wafer** which are crucial inputs in the solar manufacturing value chain.
- **Gaps in R&D and Technology:** India lags in adoption of latest solar cell technologies (e.g. **PERC (Passivated Emitter Rear Contact), bifacial, or thin-film technologies.**
- **High capital cost and financial barriers.**

Recommendations

- **Expansion of PLI Scheme to cover early-stage solar manufacturing and focus on upstream solar production** to build local production capacity.
- **Investment in R&D and advanced manufacturing technology** for a fully integrated solar supply chain.
- **Reassessment of current import duties** on solar modules and cells to promote local manufacturing.
- **Collaboration with countries such as US, EU, and Japan** to reduce global reliance on China.

India's Initiatives to boost Solar Manufacturing:

- **Approved List of Models and Manufacturers (ALMM):** Government-backed projects to use solar PV modules that meet BIS standards.
- **Production Linked Incentive (PLI) Scheme:** For fully integrated solar PV manufacturing units and solar PV manufacturing.
- **PM-KUSUM:** Mandates use of **domestically sourced** solar cells and modules.

India and China reach agreement on patrolling arrangements along disputed Line of Actual Control (LAC)

Agreement seeks to resolve **military standoff that started in April 2020**, addressing issues in areas of **Indo-China western border along eastern Ladakh e.g. Demchok and Depsang.**

- **Tensions in 2020** arose from **China's objections to India's infrastructure projects**, especially a road in the **Galwan Valley (Ladakh)** connecting to a key **airbase.**

India-china Border Dispute

- India's **3,488-km border with China is not clearly demarcated** and there is no mutually agreed LAC along certain stretches.
- **India-China border is divided into three sectors:**
 - ⊕ **Western Border (Ladakh):** dispute focuses on the **Johnson Line** from 1860s, which includes **Aksai Chin** in India whereas **China considers MacCartney-MacDonald Line** as border.
 - ⊕ **Middle Sector:** In **Himachal Pradesh and Uttarakhand**, boundary dispute is minor.
 - ⊕ **Eastern Sector:** In **Arunachal Pradesh and Sikkim**, dispute centers on the **McMahon Line** established in **1914 Simla Convention.**
 - ◆ **China rejects MacMahon line.**

Border Dispute Settlement Mechanism: India and China have **signed five agreements** to manage disputes along the **Line of Actual Control (LAC):**



Agreements	Focus
1993 Agreement	Focused on maintaining peace and tranquility along the LAC
1996 Agreement	Established confidence-building measures in military operations
2005 Protocol	Detailed implementation of military confidence-building measures
2012 Agreement	Created a Working Mechanism for Consultation & Coordination on India-China Border Affairs (WMCC)
2013 Agreement	Enhanced border defense cooperation

GUESS India 2023 survey report of IIT Mandi highlights strong entrepreneurial spirit in Indian students

Survey is part of global research project involving a **comprehensive survey on student entrepreneurs** in 57 countries worldwide.

Major Trends Highlighted by Report

- **Nascent Entrepreneurship:** According to survey, as many as **33% of college students in India** are already nascent entrepreneurs, which is higher than **global average of 26%**.
- **Entrepreneurship as an emerging career choice:** 14% students in India intend to become entrepreneurs after graduating.
- **Entrepreneurship intent:** Indian students show **highest entrepreneurial intent globally**.

Factors propelling Entrepreneurship among Students

- **Favorable Macroeconomic Environment:** India ranks 39th (out of 133) in Global Innovation Index
- **Thriving Startup Ecosystem:** India has 110+ unicorns (**startups valued at over \$1 billion**), third-largest after USA and China.
- **Educational Ecosystem** (Offering diverse and specialized courses) & **Supportive Government Initiatives (refer to box)**

Existing Challenges

- **Low Active Entrepreneurs:** Due to lower transition of nascent ventures to active businesses.
- **Limited reach and accessibility:** Regarding Entrepreneurship education and incubation programs.
- **Others:** Mismatch between support Programmes and requirements of student ventures etc.

Way Forward

- **Encouraging Entrepreneurship** during education through compulsory courses in universities, etc.
- **Further expansion of the incubation network** to provide mentorship, funding, etc.

Supportive Government Initiatives

- **NIDHI Umbrella Programs (2016):** Department of Science and Technology establishes a wide network of incubation centers and start up support programmes.
- **Atal Innovation Mission (2016):** Provides for Atal Tinkering Labs to foster innovation at school level.
- **National Innovation and Startup Policy (2019):** Aims at strengthening innovation and entrepreneurial ecosystem in campus.

Government notifies Offshore Areas Operating Right Rules, 2024

Rules notified under **Offshore Areas Mineral (Development and Regulation) Act, 2002** aim at regulating **exploration and production of minerals** in specified **offshore regions**.

- This is significant in the backdrop of the planned **first-ever offshore mineral auction of 10 blocks**. These blocks will include **sand, lime mud, and polymetallic nodules**.

Key Highlights of Rules

- **Applicability:** All minerals in offshore areas, except Mineral oils and hydrocarbons and specified Atomic minerals
- **Lease Surrender:** Provides for **surrender of lease after 10 years** in case of **uneconomic** production operations.
- **Provide for Priority access to government** and government-owned companies, in case of operating rights for **reserved offshore zones**.

Offshore mining and its significance:

- Also called **deep sea mining**, Offshore mining is process of **retrieving mineral deposits from deep seabed** i.e. ocean below 200m.
 - ⊕ It will cater to **increasing demand for metals** in context of **depleting terrestrial deposits** and reduce **dependence on mineral imports**.

Issues/Challenges in offshore Mining:

- **Potential environmental damage:** Can endanger biodiversity by habitat destruction, underwater noise, and pollution.
- **Impact on fishing communities:** May harm fish populations, impacting livelihood of fishing communities.
- **Technology:** Lack of adequate R&D and technological development for deep-sea mining.

Initiatives taken for Offshore Mining:

- **Offshore Areas Mineral (Development and Regulation) Act, 2002:** For development and regulation of mineral resources
- **Deep Ocean Mission:** Under **Ministry of Earth Sciences** for deep sea mineral exploration. E.g. **Samudrayaan Mission and MATSYA 6000**
- **International Seabed Authority (ISA):** Allotted 10,000 sq. km. of area to India in 2016 for exclusive exploration of Poly-Metallic Nodules in Indian Ocean.

Connections established between Volcanic Eruption & Ionospheric Disturbances

A recent study by **Indian Institute of Geomagnetism** establishes the role of volcanism in shaping space weather.

Key findings of the study

- **Ionospheric Disturbance:** Volcanic eruptions produce **strong atmospheric gravity waves** triggering formation of **Equatorial Plasma Bubbles (EPBs)**.
 - ⊕ EPBs, normally observed in the equatorial ionosphere, are **depletions in ionospheric plasma density** formed during post-sunset hours.
- **Impacts Satellite Communication and Navigation Systems:** Generated EPBs can impact satellite communication and satellite-based technologies.

Volcanism and its Impacts

- A volcano is an **opening in Earth's crust** through which lava, ash, and gases erupt. **Recent incidents include Mount Ruang** (Indonesia, 2024), **Whakaari/White Island** (New Zealand, 2024), etc.
- **Positive Impacts of Volcanic activities**
 - ⊕ **Short periods of cooling Earth's atmosphere:** Particles from volcanoes can cause temporary cooling by shading incoming solar radiation.
 - ⊕ **Source of geothermal energy:** Can provide free electricity for locals.
 - ⊕ **Improvement in soil fertility** by ejected volcanic ash
 - ⊕ **Provides Mining opportunities** as magma brings valuable minerals to the surface.
 - ⊕ **Others:** Tourism potential; etc.
- **Negative Consequences of Volcanic activity**
 - ⊕ **Impact on Climate:** With the release of dust, ash, and other gases into the atmosphere.
 - ⊕ **Lead to disasters such as Tsunami** (E.g. Tonga eruptions (2022))
 - ⊕ **Others:** Leads to damage of lives, property, habitat, and landscapes

New assessment highlights role of Wetlands in National Biodiversity Strategies and Action Plans (NBSAP)

The assessment done by **35 per cent Ltd** (commissioned by Wetlands International) highlights the role of wetlands in NBSAP submitted after COP15.

- The assessment was **conducted following COP15 to the UN Convention on Biological Diversity**.
 - ⊕ It encouraged countries to **revise their NBSAPs in line with Kunming-Montreal Global Biodiversity Framework (KMGBF)** aimed at halting and reversing biodiversity loss by 2030.
- The report calls for establishing clear, measurable goals for wetland restoration and protection, to support regional and global ecological health

Key findings of the Assessment:-

- **Inclusion of Wetlands:** 83% of NBSAPs mention wetlands, inland waters, or freshwater in their targets. **71% of NBSAPs in Asia** explicitly mention them.
- **Mentioning of various types of wetlands** such as mangroves, rivers, lakes and peatlands in national strategies indicate rising importance of wetlands in environmental targets.
- **Underrepresentation of Significant Areas:** E.g. **Amazon River Basin and Hudson Bay Lowland** are rarely mentioned in national targets

Role of Wetlands in Biodiversity Conservation

- **Biodiversity Hotspots:** Wetlands cover only 6% of Earth's surface but support ~40% of global biodiversity.
- **Nutrient Cycling:** Plant diversity aids in nutrient cycling and water purification, enhancing water quality and supporting diverse life.
- **Carbon Sequestration:** Wetlands store carbon in plant biomass and sediments, helping mitigate climate change, flood control etc.

Also in News



Economic Freedom Report, 2024

Fraser Institute released the 2024 Economic Freedom of the World Report.

About Economic Freedom Report, 2024 (India's Rank: 84th)

- It ranks **165 countries** based on the degree to which policies and institutions permit people to **make their own economic choices**.
- **Indicators:** It uses various data points organized into five broad areas to construct an overall index
 - ⊕ **Size of Government:** Role of fiscal policy.
 - ⊕ **Legal System and Property Rights:** Covers Impartiality of courts; protection of property; etc.
 - ⊕ **Sound Money:** With low (and stable) rates of inflation.
 - ⊕ **Freedom to Trade Internationally:** Easy clearance and customs.
 - ⊕ **Regulation:** Restricting entry into markets.
- **Top and Bottom Ranks:** **Hongkong (1st), Venezuela (165th)**



Iodine Deficiency

Recently, **World Iodine Deficiency Day** was celebrated.

About Iodine

- It is an **essential component of the thyroid hormones, thyroxine (T₄) and triiodothyronine (T₃)**, which regulate metabolism and are crucial for fetal and infant **development**.
- **Impact of iodine deficiency**
 - ⊕ **Hypothyroidism:** which may further lead to **Goitre**.
 - ⊕ **In pregnant women:** It causes **neurodevelopmental deficits** and growth retardation in the fetus and may result in miscarriage and stillbirth.
 - ⊕ **Others:** stunted growth, delayed sexual maturation etc.
- **National Iodine Deficiency Disorders Control Programme in India** covers various iodine deficiency disorders across all States and Union Territories.



Naseem-Al-Bahr

Recently, bilateral naval exercise, **Naseem-Al-Bahr**, was conducted about **Naseem-Al-Bahr**

- It was conducted between the **Indian Navy and Royal Navy of Oman** in Goa.
- INS Trikand and Dornier Maritime Patrol Aircraft** participated from the Indian side.
- Aim:** Reaffirms India's commitment to constructive collaboration and mutual growth with like-minded nations in the **Indian Ocean Region**.



Namo Bharat Trains

First anniversary of operations of **Namo Bharat Trains** was celebrated as **Namo Bharat Diwas**.

About Namo Bharat Trains:

- They represent **India's first Regional Rapid Transit System (RRTS)** currently operating across a **42 kms Delhi-Ghaziabad-Meerut corridor** covering 9 stations.
 - It is stipulated to be a **82-km corridor** connecting **Delhi to Meerut**, expected to be completed by **2025**.
- About RRTS:** It provides **high-speed, efficient connectivity** between **suburban areas**, **reducing commuting time** and reinforcing India's commitment to developing **sustainable urban transport solutions**.



Z-Morh Project

Recently militants attacked **Z-Morh Project site** in **Jammu and Kashmir**.

About Z-Morh Project:

- It is a **6.4-km tunnel** on the **Srinagar-Sonamarg highway** at an **altitude of 8,500 feet** aimed at **all weather connectivity** to Sonamarg, a famous tourist destination.
- It has acquired its name from presence of a **Z-shaped road stretch** at the construction location.
- Strategic importance:**
 - It is part of the **Zojila tunnel project** that aims to provide **all weather connectivity from Srinagar to Ladakh** throughout the year.
 - It connects **Srinagar, Dras, Kargil and Leh regions**, apart from this all-weather connectivity **reduces army's reliance on air transport**.



Bureau of Civil Aviation Security (BCAS)

Officials from **BCAS** met with airline representatives following reports of bomb threats affecting multiple flights.

About BCAS

- Established **within Directorate General of Civil Aviation** in 1978 based on the **Pande Committee's** recommendation.
- It became an **independent department under Ministry of Civil Aviation** in 1987.

Functions:

- Lays down standards and measures related to security of civil flights at international and domestic airports in India.
- Establishes **Aviation Security Standards** as per **Chicago Convention of International Civil Aviation Organization**.



Halmahera Sea

As per **German Research Centre for Geosciences**, a 5.7 magnitude earthquake hit **Halmahera Sea** in **Indonesia**.

About Halmahera Sea

- Located near **Halmahera Island (Indonesia)**, it is a part of eastern entry route of **Indonesian throughflow (ITF) passages**.
 - ITF links **Pacific ocean and Indian Ocean** through two entry passages i.e. **Western and Eastern**
- Halmahera Island** is the **largest island of the Moluccas**, located between the **Molucca Sea (west)** and the **Pacific Ocean (east)** in **Indonesia**.



Space Docking Experiment (SPADEX)

Recently **two satellites** have been built by an **Indian private company**, to be used for the **Space Docking Experiment**.

About SPADEX:

- Objective:** Indigenous technological development and **demonstration of docking** (attaching) of two spacecraft (called **Chaser and Target**) in orbit.
 - Subsequent to docking, Chaser and Target will be separated** so that they would carry-out their designated experiments with payloads.
- Significance of Experiment:** Crucial for **future human spaceflight and lunar sample return missions** and construction of large space structures. E.g. **Chandrayaan-4** and India's proposed **Bhartiya Antriksh Station**.

Places in News



Cuba (Capital: Havana)

Cuba's electricity grid collapsed for the 4th time in the last 48 hours with **Hurricane Oscar** making the restoration work difficult.

Political Features

- Location:** in northern **Caribbean Sea** at the confluence of **Gulf of Mexico and Atlantic Ocean**

Geographical Features

- Minerals:** **cobalt, nickel, iron ore, copper, manganese, salt, timber, silica, and petroleum**.
 - Cuba is the **9th largest producer of Nickel**.
- Major rivers:** Cauto, Toa
- Climate:** tropical, seasonally humid, with maritime influence and semi-continental features



Errata: In '**News Today**' dated **20th-21st October, 2024**, in the article titled '8 years of Regional Connectivity Scheme (RCS) – UDAN (Ude Desh Ka Aam Nagrik)' it was incorrectly mentioned that 'PM inaugurated Saharanpur, Rewa and Ambikapur airports in Uttar Pradesh as part of the celebrations under RCS-UDAN'. The **correct information** is PM inaugurated Saharanpur, Rewa and Ambikapur airports in **Uttar Pradesh, Madhya Pradesh, and Chhattisgarh respectively**, as part of the celebrations under RCS-UDAN.

