World's First CO₂ to Methanol Plant launched by NTPC at Vindhyachal

NTPC announced successful synthesis of CO₂ captured from flue gas with hydrogen produced from a Proton Exchange Membrane (PEM) electrolyzer, which was then converted into methanol.

- NTPC has also developed its first indigenous methanol synthesis catalyst.
- > It is considered to be a historic step in carbon management and sustainable fuel production.

About Methanol (CH30H)

- ➤ Also known as methyl/wood alcohol, it is the simplest alcohol and mixes completely with water.
- ▶ It's a clear, colorless, flammable liquid with a distinctive odour similar to ethanol (drinking alcohol).

Benefits of CO2-to-Methanol Technology

- Lower energy demand and cost for production of methanol as compared to conventional processes.
- Carbon Capture and Utilization (CCU): addresses CO₂ emissions by capturing it from flue gas of coal based power plants etc.
- Strengthen India's vision of 'Methanol Economy' and help in meeting Paris Climate Change Goals
- Reduce India's dependence on oil imports and curb the pollution from electricity sector
- ➤ Energy Storage: It can be stored and transported more efficiently than hydrogen (less flammable than hydrogen).

Working of CO₂ to Methanol Plant



Capture and purification of CO₂ (from industrial processes or directly from the air)



Production of lowcarbon-intensity hydrogen (H2)
(from the electrolysis of water using renewable electricity)



Conversion of CO₂ to carbon monoxide (CO) through reaction with hydrogen gas (H₂).



Conversion of CO to methanol

Supreme Court(SC) overturns its decision which denied Aligarh Muslim University's (AMU) status as an Minority Institution

The Supreme Court (by 4:3 majority), overruled its **S. Azeez Basha vs. UOI (1967) judgment** which held that AMU cannot claim minority status under Article 30 (1) as it was established by a statute.

- SC in S. Azeez Basha vs. UOI had held that AMU was neither established nor administered by Muslim minority, and it is a central university established through AMU Act, 1920.
- ➤ Later on, Parliament through AMU (Amendment) Act, 1981 restored AMU's minority status.
 - → However, Allahabad High Court struck down the minority status of AMU in 2006 which has been subsequently challenged in SC in 2019.
- SC has now referred 'issue of AMU's minority status under Article 30' to a regular bench based on principles established in this judgment.

Key Highlights of Judgement

- ➤ No need for minority control over administration to prove that it is a minority educational institution.
- Courts should trace Genesis and identify Brain behind the Institution to determine who established the institution
- Minority Status is not surrendered because an institution was created by a statute or upon incorporation of the University.
- Tommunities that weren't a minority before the Constitution are also entitled to Article 30 (1) protection for institutions established before independence.

Fundamental Right of minorities to establish and administer educational institutions under Constitution

- ▶ Article 30 (1) provides for linguistic & religious minorities a fundamental right to establish & administer educational institutions of their choice.
- National Commission for Minority Educational Institutions (NCMEI) Act has been enacted to safeguard the educational rights of the minorities enshrined in Article 30(1) of the Constitution







India's First Official Meeting with Taliban Defence Minister: A New Diplomatic Shift

The visit by India's official to Afghanistan underscores India's growing diplomatic engagement with Afghanistan since the Taliban's takeover in 2021.

India's Engagement with Afghanistan in Post-Taliban Period

- India didn't officially recognize the Taliban government.
- However, since 2022, India has adopted a more pragmatic approach of limited engagement to protect its interests in Afghanistan and the broader region.
- India is engaging with Afghanistan in different ways such as
 - A technical team is positioned in the Embassy and is active in respect of humanitarian assistance and other situations.
 - Since 2021, Indian Council for Cultural Relations (ICCR) has granted admissions to more than 3000 students (As of Dec. 2023).
 - India participated in 'Afghanistan Regional Cooperation Initiative' meeting in Kabul in 2024.

Why India's Engagement with Afghanistan is important?

- Geopolitical Interests: India seeks to maintain influence in Afghanistan to counterbalance Pakistan's role & secure its strategic interests (E.g. access to central Asia).
- Regional Stability: India is concerned about the potential for instability in Afghanistan spilling over into the region.
 - In 2021, over 80% of world's opium originated from Afghanistan, earning can used for financing terrorist activities.
- Secure Investments: India has invested heavily in infrastructure projects (refer to box).

key India Supported Infrastructure Projects in Afghanistan

- Salma Dam: inaugurated in 2016, is known as the Afghan-India Friendship Dam.
- Zaranj-Delaram highway: Built by the Border Roads Organisation, is located close to Afghanistan's border with Iran.
 - It provides India an alternative route into landlocked Afghanistan through Iran's Chabahar port by bypassing Pakistan.

1st Global Ministerial Conference on Ending Violence Against Children held in Bogotá, Colombia

Conference was hosted by the Colombia and Sweden, in partnership with UNICEF, the WHO and the UN Special Representative of the Secretary General on Ending Violence Against Children.

Violence against Children/Child Maltreatment

- It includes all types of physical and/or emotional ill-treatment and sexual abuse.
- Violence affects half of the world's child population.
 - ⊕ Corporal punishment affects three out of every five children regularly in their homes.
- Violence is often **hidden**, fewer than half of affected children tell anyone they experienced violence and under 10 per cent receive any help (WHO).

Consequences of Violence Against Children

- **Health/ psychological Impacts:** E.g. anxiety, depression etc.
- Physical Impact: Increased risk of Sexually Transmitted Infections (STIs).
- **Developmental Disruptions:** Early maltreatment is associated with a 13% higher likelihood of school dropout.

Measures Required

- Evidence-based strategies aimed at preventing childhood violence.
- Fostering safer learning spaces by emphasizing on Schoolbased programmes targeting bullying and enhancing social

Adopting new digital safety initiatives to protect children from online exploitation.

Initiative Taken

Global

- INSPIRE Initiative, comprises Seven Strategies for Ending Violence Against Children led by the WHO and UNICEF
- UNICEF's Safe to Learn Program
- UN Convention on the Rights of the Child (CRC), adopted in 1989

India

- Constitutional:
 - Article 21A (right to free education for all children aged 6 to
 - Article 24 (Prohibits the employment of children under the age of 14 in factories, mines)
- Legal: POCSO Act, 2012 and Juvenile Justice Act, 2015
- Other: Operation Nanhe Farishte by the Railway Protection Force (RPF) to resque children from trafficking, etc.







Sexual assault under POCSO can't be quashed based on compromise: Supreme Court (SC)

SC in Ramji Lal Bairwa & Anr vs State of Rajasthan & Ors Case held that cases of sexual assault under Protection of Children from Sexual Offences (POCSO) Act, 2012 (refer to box) cannot be quashed on the basis of the compromise between par-

- SC held this while reviewing Rajasthan High Court's decision of quashing a 'sexual assault' case under the Act.
- Case has been heard under Special Leave Petition.
 - special power to grant special leave to appeal against any judgment/order/decree in any matter or cause passed or made by any Court/tribunal.

Key Observations

- Rejection of Compromise Precedent: Court made reference of the State of M.P. v. Laxmi Narayan (2019) case which held that an offense against the society cannot be compromised.
 - ⊕ Also, endorsed the Delhi High Court judgment (Sunil) Raikwar v. State) which held that a POCSO offense cannot be settled.
- Non Private nature of offense: Court observed that such crimes cannot be treated as private matters eligible for compromise-based quashing.
 - implications should not be dismissed solely based on a settlement.

About POCSO Act, 2012

- Aim: Gender-neutral legislation ensures child safety, punishes offenders based on the severity of offenses, and comprehensively addresses child sexual abuse.
- Definition of Child: Any individual below 18 years of age.
- Three broad categories of sexual offences punishable: Sexual assault, sexual harassment and using a child for pornography.
 - 2019 Amendment introduced more stringent punishment including the death penalty for committing sexual crimes on children.

Scheme for Strengthening the Medical Device Industry launched by Ministry of Chemicals and **Fertilizers**

It is a comprehensive scheme which targets critical areas of the medical device industry and is expected to make India self-reliant in the sector

India's medical device market is valued at approximately \$14 billion and is expected to grow to \$30 billion by 2030.

Features of the Scheme

- > Total Outlay: 500 crore
- ➤ Components: It consists of five sub-schemes namely:
 - to enhance infrastructure by creating shared facilities, including R&D labs, design and testing centers, and animal labs etc.
 - **Dependence:** aims at localized production of key components, raw materials etc.
 - **⊙** Capacity Building and Skill Development for Medical Devices: offers financial support for running various courses to develop skilled technical workforce.
 - **⊙** Medical Device Clinical Studies Support Scheme: provide financial aid for animal studies, human trials, and clinical performance evaluations.
 - **⊙ Medical Device Promotion Scheme:** supports industry associations and export councils for organizing conferences, conducting studies and surveys.

Challenges faced by the Medical device Industry: lack of infrastructures like R&D labs, design and testing center; high import dependence for high-end devices, low capital investment, inverted duty structure

India's Initiatives for Promotion of Medical Devices Manufactur-

- Production Linked Incentive Scheme for Promoting Domestic Manufacturing of Medical Devices
- Promotion of Medical Device Parks Scheme

Also in News



Commercial Courts

The government invited comments on the draft Commercial Courts (Amendment) Bill, 2024.

It aims to provide quicker and specialized adjudication of commercial disputes.

Commercial Courts

- It deals with commercial disputes arising out of ordinary transactions of merchants, bankers, export or import of merchandise or services, intellectual property rights etc.
- Commercial Courts Act, 2015 provided for constitution of Commercial Courts, Commercial Appellate Court, Commercial Appellate Division in High Courts etc.
- Constitution: It is done by the State Government, after consultation with the concerned High Court.
- Constitution of Commercial Division of High Courts is done by Chief Justice of High Court



World Organisation for Animal Health (WOAH)

Indian Council of Agricultural Research-National Research Centre on Equines (ICAR-NRC Equine) in Haryana has been granted WOAH Reference Laboratory status.

- This recognition is specifically for its expertise in Equine Piroplasmosis disease.
 - Equine Piroplasmosis is caused by tick-borne protozoan parasites, affects horses, donkeys, mules, and zebras.

About WOAH

- An intergovernmental organization founded in 1924.
- Objective: Disseminating information on animal diseases and improving animal health globally.
- Members: 183 including India.
- **HQ:** Paris, France









Proba-3 mission

ISRO will launch European Space Agency's (ESA) Proba-3 mission, marking a significant step in international space collaboration.

It is ESA's first launch from India since Proba-1 mission in 2001.

About Proba-3 Mission

- Aim: To observe the Sun's corona through an innovative satellite formation flight.
 - Corona is the outermost part of the Sun's atmosphere.
- Mission will deploy two satellites, launched aboard ISRO's PSLV-XL, into a high elliptical orbit that will reach 60,000 km from Earth.
 - Twin satellites will maintain an autonomous formation to allow uninterrupted observation.



National Company Law Tribunal (NCLT)

Staff Shortages and operational challenges in NCLT were highlighted in a recent ruling of Supreme Court.

About NCLT

- It is a quasi-judicial authority established under section 408 of the Companies Act, 2013.
- Jurisdiction:
 - Deals with corporate disputes of civil nature arising under Companies Act.
 - It also handles company law matters, including arbitration, restructuring, winding up, and insolvency processes for companies and LLPs under the Insolvency and Bankruptcy Code, 2016.
- Appeal: Decisions of NCLT can be appealed to National Company Law Appellate Tribunal. NCLAT decisions can further be appealed to Supreme Court on a point of law.



Directorate of Revenue Intelligence (DRI)

The Supreme Court restored Directorate of Revenue Intelligence (DRI) officers authority to issue notices and recover dues under the Customs Act. 1962.

Directorate of Revenue Intelligence (DRI)

- DRI is the apex anti-smuggling agency of India.
- Working: under the Central Board of Indirect Taxes & Customs (CBIC), Ministry of Finance
- Responsibilities
 - Detecting and preventing smuggling of contraband, including illegal drug trafficking
 - Preventing and detecting illicit international trade in wildlife and environmentally sensitive items,
 - Combating commercial frauds related to international trade and evasion of Customs duty.



Pradhan Mantri Matsya Sampada Yojana (PMMSY)

Government announced to develop 100 climate-resilient coastal fishermen villages under PMMSY.

Initiative aims to improve resilience against climate change by providing facilities like fish drying yards, emergency rescue facilities, etc.

About PMMSY

- Objectives: Double fishers and fish farmers' incomes, Enhance fish production, Modernize and strengthen the value chain etc.
- Targets of PMMSY: Increasing fish production to 22 million metric tons by 2024-25, etc.
- Implementing Agency: Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.
- Time Period: 2020-21 to 2024-25



Manas National Park

As per recent study Tiger population triples in Assam's Manas National Park.

About Manas National Park

- ▶ Location: Contiguous with the Royal Manas National Park in Bhutan
- Recognition: UNESCO World Heritage Site (1988), Biosphere Reserve
- Rivers: Major rivers include the Manas and Beki, which flow through the sanctuary and meet the Brahmaputra downstream.
- Vegetation: semi-evergreen forests, mixed moist and dry deciduous forests and alluvial grasslands.
- Key Fauna: Tiger, Pygmy hog, Indian rhinoceros, swamp deer, Bengal florican, and Indian elephant.



Allulose

The market for Allulose, a natural sugar alternative, is gaining ground in South Korea as a healthier option.

About Allulose

- Also known as D-allulose & d-psicose, Allulose is a naturally occurring sugar found at low levels in figs, kiwis & other fruits.
 - It is also commercially produced from beet sugar or corn using specific enzymes.
- **Benefits**
 - Allulose is low in calories and has a similar taste & texture to table sugar.
 - Helps in lowering of blood sugar, encourages weight loss, & reduce health risks associated with added sugar.

Personality in news



Bipin Chandra Pal (1858-1932)

Recently, birth anniversary of Bipin Chandra Pal was celebrated **Bipin Chandra Pal**

Kev Contributions:

- Participated in Swadeshi Movement(1905).
- He was an exponent of extremist form of Nationalism
- He opposed Gandhi during the Non-cooperation movement (1920) over the fact that it did not address selfgovernment.
- He was imprisoned for his refusal to give evidence against Aurobindo Ghosh in Bande Mataram sedition case
- He Initially joined Brahmo Samaj, turned to Vedanta and ended up as upholder of Vaishnava Philosophy (of Sri Chaitanya)

Literary Works:

New India (weekly Journal), Hindu Review (Monthly Journal) The New Economic Menace of India (Book).

Values: Patriotism, Courage, Sacrifice































AHMEDABAD BENGALURU

BHOPAL

CHANDIGARH

DELHI

GUWAHATI

HYDERABAD

JODHPUR

LUCKNOW

PRAYAGRAJ

PUNE