

NEWS TODAY

Montreal Protocol effective in reducing emissions of Ozone-Depleting Substances (ODS): Study

Key highlights of study

- **Impact of Hydrochlorofluorocarbons (HCFCs) on Earth's energy balance and globally averaged chlorine content of ODS in troposphere has decreased since 2021, five years earlier (2026) than expected.**
 - ⊖ HCFCs are compounds containing **carbon, hydrogen, chlorine and fluorine.**
- **HCFC-22, most abundant HCFC, has declined significantly.** Its Global Warming Potential (GWP) is thousands of times more than carbon dioxide (CO₂).
 - ⊖ HCFC-22 is used as a **refrigerant in air conditioners, cold storage, retail food refrigeration, etc.**
- **Minor decline were observed in HCFC-141b, second most abundant HCFC.**
 - ⊖ HCFC-141b is used as a **blowing agent in production of rigid polyurethane foams.**
 - ⊖ **India has achieved complete phase-out of HCFC-141b** under ODS (Regulation and Control) Amendment Rules, 2014.
 - ◆ This is in line with **India's commitment under Montreal Protocol** for Substances that Deplete Ozone Layer.

Montreal Protocol

- Signed in 1987, it is a **global treaty to eliminate production and use of ODS.**
- Implemented under **Vienna Convention (adopted in 1985).**
- **Kigali Amendment to Montreal Protocol was adopted in 2016** (and entered into force in 2019) to **phase-down production and consumption of Hydrofluorocarbons (HFCs).**
 - ⊖ HFCs are **non-ODS alternative to CFCs and HCFCs.** HFC's GWP is thousands of times more than CO₂.

Ozone and Ozone-Depleting Substances (ODS)

- ODS are **human-made chemicals** containing **chlorine and bromine** (like Chlorofluorocarbons (CFCs), HCFC).
- They can reach stratosphere where they undergo catalytic reactions, further leading to destruction of ozone.
- Stratospheric ozone (**good Ozone**) is found at **10-40 KM** above Earth's surface, and protects Earth from **UV radiation of Sun.**
- **Ozone formed in Troposphere is harmful** and is called '**bad ozone**'.

Ministry of Statistics and Programme Implementation released first All-India survey on AYUSH

Survey was conducted by National Sample Survey Office (NSSO) from July 2022 to June 2023.

- Survey **collects information on awareness of people about Ayush system of medicine** and uses of Ayush for prevention or treatment of ailments.

Key findings

- Around **95% of rural population and 96% of urban population aged 15 years and above are aware of Ayush.**
- Ayush is predominantly used for **rejuvenation** (preventive) purpose **followed by therapeutic** (curative) treatment.
- During 2022-23, **use of Ayush and average expenditure incurred per person for prevention or treatment of ailments is more in urban areas** than rural areas.

About AYUSH System

- It represents traditional system of healthcare, namely, **Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa and Homoeopathy.**
- India is **2nd largest exporter of Ayurveda and alternative medicine globally.**
- **Benefits of AYUSH:** Negligible side effects, Cost-effective treatment, Individualized personal care, complement modern medicine, etc.
- **Challenges before AYUSH**
 - ⊖ **Slower healing** compared to allopathic treatment.
 - ⊖ Lack of **qualitative graduation and post-graduation courses.**
 - ⊖ **Limited Research Centres** of AYUSH in India.
 - ⊖ **Raw material-related issues** such as lower supplies, degrading quality, etc.
 - ⊖ **Lot of infrastructure remains unutilized** like hospital beds, health human resource, AYUSH hospitals and dispensaries, etc.

Initiatives taken to promote Ayush

- **National Ayush Mission**, launched in 2014 as a Centrally Sponsored Scheme under Ministry of AYUSH, to strengthen, improve and provide **Ayush healthcare services throughout the country.**
- **Global Ayush Investment and Innovation Summit (GAIS) 2022** held at Gandhinagar (Gujarat) to promote agreements, and mutual research and increase Ayush reach globally.
- **WHO - Global Center for Traditional Medicine** was established in Jamnagar (Gujarat) to accelerate global progress in Traditional Medicine.
- **Others:** Three **National Ayush Institutes of Eminence in Ayurveda, Unani and Homoeopathy, AYUSH Visa, etc.**

Researchers find new way to cool Supercomputers

Researchers from the IIT Bombay and C-MET, Pune have proposed using **Low-Temperature Co-fired Ceramic (LTCC)** as an efficient alternative to **conventionally used copper for making cold plates**.

Cooling of Supercomputers

- High-Performance Computing systems (HPCs) or supercomputers resort to **cooling using liquid coolants and cold plates** that dissipate heat.
 - In liquid-cooled devices, **liquid coolants like deionised water** are circulated through system to remove excess heat.
 - Cold plates are used like a **heat sink** transferring heat from circuit components into the coolant liquid and **copper is presently the preferred material** due to high thermal conductivity.

Use of LTCC for cold plates

- LTCC is a technology used to manufacture **ceramic substrates for circuits**.
 - Substrates** are materials on which electrical interconnections are printed resistors, inductors, etc are mounted.
- It facilitates 3D circuit packing, making **designs more compact and efficient** than conventional PCB (Printed Circuit Boards).
- LTCC can **effectively cool microprocessor chips** in supercomputers.

About Supercomputers

- Supercomputers** are largest and more powerful computers that have **multiple central processing units** grouped into 'compute nodes'.
 - Their performance is measured in **Floating-Point Operations Per Second (FLOPS)**.
- Application of Supercomputers:** Scientific research, Space exploration, Weather Forecasting and Climate Modelling, Genomic Sequencing, etc.

India's initiatives in Supercomputing

- National Supercomputing Mission:** It is steered jointly by Department of Science and Technology and Ministry of Electronics and Information Technology (MeitY) and implemented by Centre for Development of Advanced Computing (C-DAC), Pune.
- IndiaAI Mission:** Under it, **IndiaAI Compute Capacity** will build a high-end scalable AI computing ecosystem.
- International Collaborations:** India-EU Cooperation on High Performance Computing.

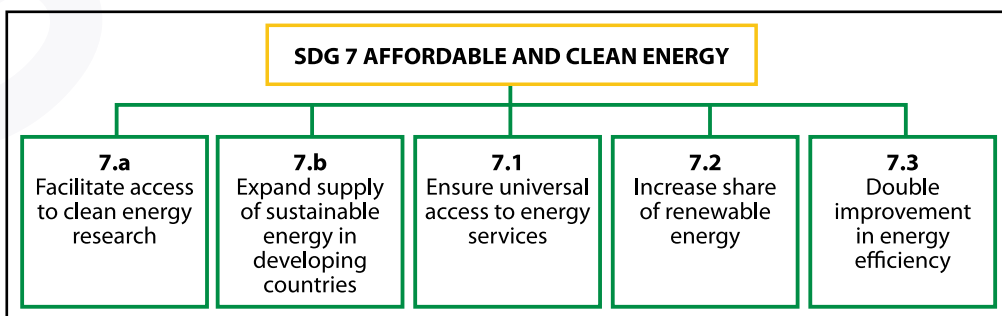
Tracking SDG 7: The Energy Progress Report 2024 released

Report is a joint effort of five SDG 7 custodian agencies – International Energy Agency (IEA), International Renewable Energy Agency (IRENA), United Nations Statistics Division (UNSD), World Bank and World Health Organization (WHO).

- Sustainable Development Goal (SDG) 7** is to ensure access to affordable, reliable, sustainable and modern energy for all.

Key Highlights

- SDG 7.1.1:** Number of people without **access to electricity** increased for first time in over a decade, reaching 685 million.
 - Factors:** Global energy crisis, inflation, growing debt distress in many low-income countries etc.
 - India:** 11 million people lack access in 2022.
- SDG 7.1.2:** 2.1 billion people live without **access to clean cooking fuels and technologies**.
 - Implications:** 3.2 million premature deaths each year.
 - India:** Largest share of the access deficit, with **360 million people lacking access**.
- SDG 7.2:** Share of **Renewable energy (RE)** in Total Final Energy Consumption (TFEC) was 18.7% in 2021.
 - India:** 34.9% renewable energy share in Total Final Energy Consumption.
- SDG 7.3:** Average annual improvements in **Energy efficiency** through 2030 must accelerate to over 3.8% to meet target.



Initiatives for SDG7 in India

- Pradhan Mantri Sahaj Bijli Har Ghar Yojana – SAUBHAGYA:** Objective of achieving universal household electrification.
- PM Surya Ghar Muft Bijli Yojana:** Providing up to 300 units of free electricity every month from solar rooftop.
- Pradhan Mantri Ujjwala Yojana:** To replace biomass as cooking fuel with LPG connections to women of BPL families.
- National Mission for Enhanced Energy Efficiency (NMEEE):** To enhance energy efficiency in energy intensive industries.

Ministry of Finance released 'Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement'

Guidelines aim to **streamline the dispute resolution process** for domestic procurement by government and its entities and addressing **unique challenges** faced by government entities with respect to arbitration.

Arbitration

- **Arbitration** is a **quasi-judicial process** in which a dispute is submitted, by agreement of the parties, to one or more arbitrators who make a **binding decision on the dispute**.
- It is a type of **Alternate Dispute Resolution (ADR)**, governed by **Arbitration and Conciliation Act, 1996** (amended in 2021).

Key Points of the Guidelines

- Arbitration **should not be automatically included** in procurement contracts, especially in large contracts.
- Arbitration may be **restricted to disputes valued below Rs. 10 crores**.
- Where arbitration is used, **institutional arbitration should be preferred**.
- **Mediation under Mediation Act, 2023, should be adopted** where possible, in high-value matters.

Challenges faced by Government with respect to Arbitration

- Government officials' **transferable jobs** may limit their **deep knowledge**, putting them at **disadvantage against private parties** in arbitration.
- Arbitrators often **lack integrity** and collude with private parties.
- Its informal and binding nature can lead to **erroneous decisions and improper application of law**.
- Many arbitration decisions are challenged in high courts, **failing to reduce the burden on courts**.

Potential Implications of the Guidelines

- The restrictions on arbitration, especially for high-value disputes, **might deter foreign investors**.
- It may **complicate the ease of doing business**, as India's ranking in 'Enforcing Contracts' remained abysmally low at 163rd (2019) by the World Bank.
- It may pose **obstacles** in fulfilling vision of India as an **international hub of arbitration**.

Global Trends Report: Forced Displacement in 2023 released by United Nations High Commissioner for Refugees (UNHCR)

Forced Displacement refers to **situations of persons who leave their homes due to factors like** persecution, violence, human rights violations, disasters, food insecurity and impacts of climate change etc.

Key Highlights

- Number of **forcibly displaced people** stood at **117.3 million (40% are children below 18 years of age)** at end of 2023.
- 68.3 million were **Internally Displaced People** i.e. people who are forced to flee but never cross an international border and remain displaced within their own countries.
- **73% of refugees originate from five countries-** Afghanistan, Syrian Arab Republic, Venezuela, Ukraine & South Sudan.

Impact on host country

- **Population shock:** Sudden increase in population generated by an inflow of people in a particular geographical area.
- **Public expenditure shock:** Increase in government spending on the part of host government.
- **Demand and supply shifts:** Changes in labor and consumer market results in loss of employment/wages for informal, low-skilled, young and female workers of host country.

Recommendations

- **Resettlement to third countries** can act as a protection tool and a solution for people facing displacement.
- **Enhance integration of refugees** through education and labour mobility.
- **Allowing refugees and asylum-seekers to enjoy right to start new lives** regulated by national and international law.

United Nations High Commissioner for Refugees (UNHCR)

- **HQ:** Geneva, Switzerland
- **Genesis:** Formally known as Office of the High Commissioner for Refugees, UNHCR was **established by General Assembly of United Nations in 1950** in aftermath of the Second World War.
- **Purpose:** Protecting rights and building a better future for people forced to flee their homes because of conflict and persecution.
- **Present in 135 countries.**
- **Received Noble Peace prize** in 1954 and 1981.

Also in News



Pantanal Wetland

South America's Pantanal wetlands is grappling with devastating wildfires.

Pantanal Wetland

- It is the **world's largest tropical wetland**, spread across three countries: **Bolivia, Brazil, and Paraguay**.
- It comprises a **UNESCO World Natural Heritage Site and Biosphere Reserve and two Ramsar sites**.
- It is a seasonal floodplain, flooded by waters of **Paraguay River System**.
- Home to South America's **highest concentration** of some wildlife species such as jaguar and caiman.
- **Less than 5% of Pantanal is protected** and around 95% is under private ownership.
- **Threats:** Cattle grazing, untreated waste pollution, pesticide runoff, unsustainable infrastructure development, etc.



Camel

UN declared 2024 as International Year of Camelids (members of camel family) to build awareness of untapped potential of camelids.

About Camel

- Camels are found in **Africa and Asia**.
- **Characteristics:** Domesticated by people, Mammals, Herbivores, survive in hot conditions (Draught animal).
- **Types of camel:** **Dromedary or Arabian camel** (single hump) and **Bactrian camel** (two humps).
- **Camels in India**
 - ⊕ **State animal of Rajasthan.**
 - ⊕ **Kharai Camel swim long distances** (3 km at a time) in sea to eat **Mangroves**; found in Kutch (Gujarat).
 - ⊕ **Bactrian camels** are found in Ladakh's Nubra Valley.
 - ⊕ **Dromedaries camel** are found in hot deserts (Rajasthan, Gujarat).



GREAT Scheme

Empowered Programme Committee of the National Technical Textiles Mission (NTTM) has approved 7 startup proposals under the GREAT scheme.

About GREAT Scheme

- Grant for Research & Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT) is part of **Research, Development, and Innovation Component of NTTM**.
- **Nodal Ministry:** Ministry of Textiles
- **Grant-in-aid:** Normally up to INR 50 Lakhs for a period of 18 months.
- **Objectives:** Utilizing the talent pool and expertise of India in Technical Textiles sector to bring innovative products/technologies to the market.



Zero-knowledge Proofs (ZKP)

Recently, a Hyderabad-based information insights and data analytics company has come up with ZKP blockchain technology in country for the first time.

About ZKP

- It is a **cryptographic protocol** that enables users to demonstrate their knowledge or validity of specific information without revealing the underlying documents or facts that support it.
- **Benefits:**
 - ⊕ **Safeguard information** in event of a cyber-breach.
 - ⊕ **Ability to assist businesses in meeting stringent requirements of data protection regulations.**
 - ⊕ **Facilitate secure sharing of personal documents.**



Artemis Accords

Armenia joins as the 43rd signatory nation to NASA's Artemis Accords for lunar exploration.

Artemis Accords

- **Established in 2020 by NASA**, in coordination with the US Department of State, together with **seven other founding member nations** (Australia, Canada, Italy, Japan, Luxembourg, UAE, and UK).
- Presently, there are **43 signatories including India**.
- Grounded in the **Outer Space Treaty of 1967**, Artemis Accords are a **non-binding set of principles** designed to guide civil space exploration and use in 21st century.
- **Vision:** Peaceful, sustainable, and transparent cooperation in space.



Symbiotic System

NASA's Hubble Space Telescope observed the symbiotic system HM Sagittae (HM Sge) in Milky Way Galaxy.

About Symbiotic System:

- It is a type of **binary star system** that consists of a **white dwarf and a red giant**.
 - ⊕ **White dwarf** is what stars become after they have exhausted their nuclear fuel.
 - ⊕ **Red giant** is a dying star in the final stages of stellar evolution.
- Here, the **cooler red giant** loses material which flows onto the **hotter compact dwarf star**.
 - ⊕ The stolen material forms an **accretion disk** swirling around the white dwarf.



Shree Jagannath Temple

Odisha has opened all four doors of Shree Jagannath Temple for devotees.

About Shree Jagannath Temple

- Located in **Puri, Odisha**, and also called as **White Pagoda**.
- **Dedicated to Lord Jagannath** (incarnation of Lord Vishnu), sister **Devi Subhadra** and elder brother **Lord Balabhadra** (holy trinity).
- Constructed by **Ganga Dynasty King Ananta Verman Chodaganga Deva**.
- One of the **four Char Dhams** (Dwarka, Badrinath & Rameshwaram) for pilgrimages in India.
- **Architecture style:** Kalinga Architecture.
 - ⊕ It has **four component parts** consisting of Vimana or Deula (Garbhagriha), Jagamohana, Natamandapa and Bhogamandapa.
 - ⊕ Architectural style of temple is a **combination of two types of temple structures**, i. e. **Rekha and Pidha**.



Jyotirmath

The Centre approved the Uttarakhand government's proposal for re-naming the **Joshimath tehsil in Chamoli district to Jyotirmath**, and **Kosiyakutoli tehsil in Nainital district to Pargana Shri Kainchi Dham**.

About Jyotirmath

- It is **one of the four cardinal mathas** established by **8th century philosopher Adi Shankaracharya** across India to promote Advaita Vedanta philosophy.
- It is believed that **Adi Shankaracharya** performed penance in Jyotirmath under a tree known as **Amar Kalpavriksha**.
- It is also known as **winter abode of Lord Badrinath**.
- It is a base camp for mountaineers attempting to climb **Nanda Devi peak**.

Places in News



Italy (Capital: Rome)

The 50th G7 summit is set to be held in Italy.

Political Features

- **Land Boundaries:** France, Switzerland, Austria, Slovenia, Vatican City and San Marino.
- **Water Bodies:** Mediterranean Sea, Adriatic Sea (northeast), Ionian Sea (southeast), Tyrrhenian Sea (southwest), and Ligurian Sea (northwest).

Geographical Features

- **Major Mountains Range:** Alps, Apennines
- **Highest Point:** Mont Blanc (Monte Bianco)
- **Major Rivers:** Po, Tiber, Adige, Arno
- **Climate:** Mediterranean type



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



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RANCHI