



## Air Quality Index

**Context:** For the first time this season, Delhi's air quality has sharply deteriorated, reaching the 'severe' category, as the Air Quality Index (AQI) surpassed the 400 mark.

- AQI is a numerical measure indicating air quality, with higher values signifying worse air quality.
- At 9 am on Friday, Delhi recorded an average AQI of 471, categorizing it as 'Severe'.
- The color-coded AQI system was introduced in India in 2014, aiding both the public and the government in assessing air quality and determining appropriate measures based on its severity.
- The AQI comprises six categories: 'Good' (0-50), 'Satisfactory' (50-100), 'Moderately polluted' (100-200), 'Poor' (200-300), 'Very Poor' (300-400), and 'Severe' (400-500).

### AQI

- The Air Quality Index (AQI) was introduced by the central government in 2014 as part of the Swachh Bharat campaign to simplify the understanding of pollution for the public.
- An expert group, composed of various professionals and experts, was established to develop the AQI. They collaborated with IIT Kanpur for a technical study.
- The AQI, according to the Central Pollution Control Board under the Ministry of Environment, Forests, and Climate Change, converts data from various air quality indicators into a single index value, nomenclature, and color to represent overall air quality.
- Pollutants Measured
  - Particulate Matter (PM10)
  - Particulate Matter (PM2)
  - Nitrogen Dioxide (NO<sub>2</sub>)
  - Sulphur Dioxide (SO<sub>2</sub>)
  - Carbon Monoxide (CO)
  - Ozone (O<sub>3</sub>)
  - Ammonia (NH<sub>3</sub>)
  - Lead (Pb)
- The index is calculated based on a formula that assigns weight to each of the factors, taking into account their impact on human health. The composite air quality index provides a single number and color to indicate the overall air quality, simplifying the presentation of information from multiple indicators.
- Monitoring stations across the country assess these indicators to calculate the AQI, allowing for standardized air quality assessment nationwide.

AQI Range	Category	Health Impacts
0-50	Good/Safe	Minimal Impact
51-100	Satisfactory	Sensitive people might experience minor breathing discomfort
101-200	Moderately Polluted	Lung disease patients may have discomfort in breathing, and heart disease, children, and older adults might experience discomfort
201-300	Poor	Breathing discomfort on prolonged exposure, and discomfort to heart disease patients
301-400	Very Poor	Prolonged exposure might lead to respiratory illness. Severely affects people with lung and heart diseases
401-500	Severe	While healthy people may experience respiratory problems, lung or heart disease patients can have severe health impacts. Even during light physical activity, people may experience health impacts

## Crowdfunding for Terrorism Financing

**Context:** An Indian extremist group, PFI, under investigation utilized well-structured networks, both offline and online, to raise funds, including the circulation of QR codes and account details, according to a recent FATF report.

- Crowdfunding is a significant global market, with experts anticipating continued growth and evolution.
- It's an innovative fundraising method used by people worldwide for legitimate projects, ideas, and business ventures.
- However, it can be exploited by bad actors, especially by extremist and terrorist groups who take advantage of permissive environments.
- **FATF Study on Crowdfunding for Terrorism Financing:**
  - The Financial Action Task Force (FATF) conducted its first comprehensive international study on terrorist financing (TF) associated with crowdfunding.

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- Crowdfunding encompasses various methods, including formal platforms, social media, messaging apps, and hybrid digital and physical approaches.
- Terrorists rely on multiple techniques to raise funds and often combine various methods.
- **Four Ways Crowdfunding Can Be Abused for TF:**
  - Abuse of Humanitarian, Charitable, or Non-Profit Causes: Individuals, unaffiliated with registered charities, launch financial appeals that appear to support humanitarian causes but actually fund terrorism.
  - Charities may launch fundraising campaigns but divert funds away from advertised humanitarian activities.
  - Non-profit organizations (NPOs) crowdfunding for legitimate purposes might become victims of extortion in high-risk environments.
- **Use of Dedicated Crowdfunding Platforms or Websites:**
  - In 2022, there were over 6 million crowdfunding campaigns worldwide, making it difficult to detect illicit activity.
  - Specialized platforms emerged to serve individuals banned from mainstream platforms, including ethnically or racially motivated terrorist (EoRMT) groups, like PFI.
  - These actors may use crowdfunding for activities promoting hate or violence, even if they don't meet the threshold of terrorism.
- **Use of Social Media Platforms and Messaging Apps:**
  - Social media and online messaging services are integral to the success of crowdfunding campaigns for terrorists.
  - Terrorist actors use these platforms strategically to share campaign links, recruit supporters, and offer advice on avoiding detection.
  - Algorithms on social media reinforce extremist beliefs and lead users to specific fundraising causes.
- **Interaction of Crowdfunding with Virtual Assets:**
  - Crowdfunding now incorporates funding options tied to virtual assets (e.g., cryptocurrencies like Bitcoin).
  - Anonymity-enhancing services, such as tumblers and mixers, can be used to conceal the origin and destination of funds linked to TF.
  - However, the use of virtual assets for TF crowdfunding campaigns varies due to conversion challenges and value fluctuations.
- **Challenges and Best Practices:**
  - Law enforcement faces challenges in proving funds were used for terrorism-related offenses.
  - Crowdfunding operations' complexity, lack of data, and anonymizing techniques complicate tracing efforts.
  - Intermediary platforms often lack expertise and mechanisms for flagging potential TF activity.
  - Best practices include improving understanding of the crowdfunding industry, conducting outreach, and enhancing information sharing.



## Direct Listing on Foreign Exchanges

**Context:** The government has allowed certain Indian companies to directly list on foreign stock exchanges to access global capital and boost outflows.

- The Ministry of Corporate Affairs (MCA) issued a notification recently, taking effect on October 30.
- This notification put into practice a provision initially announced in the Companies (Amendment) Bill, 2020.
- **Direct Foreign Listing for Indian Companies:**
  - The Companies (Amendment) Act empowers the central government to allow certain classes of public companies to list specific classes of securities in foreign jurisdictions.
  - This means certain categories of domestic public companies can now be listed on prescribed foreign stock exchanges, including the International Financial Services Centre (IFSC) in Ahmedabad.
- **Exemptions from Procedural Requirements:**
  - Section 5 of the Companies (Amendment) Act permits the government to exempt such listings from various procedural requirements.

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- These exemptions can include aspects like prospectus, share capital, beneficial ownership requirements, and failure to distribute dividends.
- **Previous Listing Methods:**
  - Prior to this provision, Indian listed companies typically used depository receipts, such as American Depository Receipts (ADR) or Global Depository Receipts (GDR), to list on foreign stock exchanges.
  - A process involved Indian companies giving their shares to an Indian custodian, who would then issue depository receipts to foreign investors.
- **Benefits of Direct Foreign Listing:**
  - The new provision offers several advantages to Indian companies, such as the ability to access foreign markets for fundraising.
  - It provides better valuation and exposure to trade in foreign currencies, including the US dollar.
  - It's particularly beneficial for startups, unicorns, and adds to India's foreign exchange reserves.
  - Indian companies are no longer required to meet time-consuming and costly accounting norms like US Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).
  - Indian Accounting Standards (IndAS) align more closely with globally accepted accounting norms, reducing the need for such preparations.

## NEWS IN BETWEEN THE LINES

### Zika Virus



Recently, five villages in Karnataka have come under surveillance due to a Zika virus outbreak.

#### What is Zika Virus?

The Zika virus is a **mosquito-borne virus** that was first identified in the **Zika Forest of Uganda in 1947**.

**Transmission:** It is primarily transmitted to humans **through the bite of infected Aedes mosquitoes**, particularly **Aedes aegypti** and **Aedes albopictus**.

It can also spread through **sexual contact, blood transfusion** and from an **infected mother to her baby** during pregnancy or childbirth.

**Symptoms:** Common symptoms, when present, include **fever, rash, joint pain, muscle pain, headache, and red eyes (conjunctivitis)**.

**Treatment:** There is no specific treatment available for Zika virus infection or disease.

### Comprehensive Nuclear Test Ban Treaty



Recently, Vladimir Putin faced criticism as he announced Russia's withdrawal from the nuclear test ban treaty.

#### About Comprehensive Nuclear-Test-Ban Treaty:

- The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is a **multilateral treaty** adopted by the **UN General Assembly on September 10, 1996**, through UNGA resolution **50/245**.
- It **prohibits states** from conducting " nuclear weapon test explosion or any other nuclear explosion" and extends the ban to any territory under a state's jurisdiction.
- On March 1, **1954**, the US conducted a **15-megaton** nuclear test at **Bikini Atoll** called "**Castle Bravo**," the most powerful explosive nuclear weapon detonated by the US.
- In response to the Castle Bravo test, Jawaharlal Nehru, India's prime minister, called for a "**standstill agreement**" to halt further nuclear tests temporarily.
- India submitted a **four-point proposal** to the UN Secretary General in April **1954**.

### Pavana River



**Concerns have been raised by citizens and environmental activists regarding the recent appearance of a thick layer of toxic foam on the Pavana River.**

#### About the Pavana River:

- Pavana River is situated in the **western part of the Maharashtra** state in India.
- This river is notable for crossing Pune City and creating a natural **divide between Pune City and the Pimpri-Chinchwad** area.
- Pavana River originates from the Western **Ghats**, approximately 6 km south of **Lonavala**.
- **Tributary:** It is a tributary of the **Bhima River** and eventually merges with the **Mula River** within Pune city.
- **Confluence:** Initially flowing eastward, the river changes its direction to become southbound, passing through the suburbs of **Dehu, Chinchwad, Pimpri** and **Dapodi** before joining the Mula River.

#### Pavana Nagar Dam:

- This **earthfill gravity dam** is **1,329 meters long and 42.37 meters high**, with a gross storage capacity of **30,500.00 km<sup>3</sup>**.
- The dam's primary purpose is to **provide an adequate water supply**.

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## White Hydrogen



Recently, an extensive reserve of naturally occurring white hydrogen was discovered in France.

### About White Hydrogen:

- White hydrogen is a **naturally occurring gas** found in the Earth's crust.
- It's also known as "**natural**," "**gold**," or "**geologic**" hydrogen.
- White hydrogen is considered a potential clean energy source.
- It only **produces water** when it is burned.
- It's hailed as a promising clean energy source for industries such as **aviation**, **shipping** and steel production.
- White hydrogen is **33% cheaper** than the cheapest hydrogen from fossil fuels and 2 times cheaper than the cheapest green hydrogen.
- The deposit could contain between **6 million** and **250 million metric tons of hydrogen**.
- Scientists **Jacques Pironon** and **Philippe De Donato** initiated a mission in northeastern France to assess methane levels in the subsoils of the Lorraine mining basin.
- The discovery and potential utilization of white hydrogen have a **significant role in addressing the climate crisis**.

## Lucy Mission



NASA's Lucy spacecraft recently achieved a significant milestone by successfully completing its first flyby of an asteroid known as Dinkinesh.

### About Lucy Mission:

- Lucy is a NASA spacecraft on a pioneering mission to explore **Jupiter's elusive Trojan asteroids**.
- The spacecraft was successfully **launched on October 16, 2021**, from the **Kennedy Space Centre in Florida, USA**.
- Lucy will investigate a remarkable number of asteroids, including two in the asteroid belt **between Mars and Jupiter** and **10 Trojans**, comprising **five asteroids** and the satellites of three of those.
- Lucy will conduct **three Earth flybys** to receive a gravity assist, making it the first spacecraft to return to the vicinity of Earth from the outer solar system.
- The spacecraft is equipped with **two infrared spectrometers** and **four cameras** for data collection.
- Trojan asteroids are asteroids that share an orbit with a planet while being situated at the leading (**L4**) and trailing (**L5**) Lagrangian points.

## Place in News

### Bahrain

Recently, against the backdrop of the ongoing conflict in Gaza, the Kingdom of Bahrain took a significant diplomatic step by halting its trade ties with Israel.

### Bahrain (Capital: Manama)

**Location:** Bahrain is an island nation situated in the Persian Gulf, in West Asia.

**Archipelago:** It consists of an archipelago, with Bahrain Island as the largest, along with numerous smaller natural and artificial islands.

### Neighboring Countries:

- Bahrain is located between Qatar and the northeastern coast of Saudi Arabia.
- It is connected to Saudi Arabia by the King Fahd Causeway.

### Geographical Features:

- **Al-Dukhān Hill (Jabal Al-Dukhān)** is the highest point in Bahrain.
- The name "Bahrain" is derived from the Arabic term "**al-bahrayn**," meaning "two seas."



## POINTS TO PONDER

- ❖ Under which act is Computer Emergency Response Team – India (CERT-In) mandated to provide Incident Prevention, Response and Security Quality Management Services? - **Information Technology (Amendment) Act 2008**
- ❖ Where are OCHA's (United Nations Office for the Coordination of Humanitarian Affairs) two main headquarters located? - **Geneva and New York**
- ❖ Which organizations jointly launched the report on hunger hotspots? - **Food and Agriculture Organization of UN and the World Food Programme (WFP)**
- ❖ Under what article of the Indian Constitution is the Governor considered the Head of State and part of the legislature? - **Article 168**
- ❖ When was the United Nations Environment Programme (UNEP) founded? - **1972**

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