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Current Affairs - 04 October 2025

COMMISSION FOR AIR QUALITY MANAGEMENT IN NATIONAL CAPITAL REGION AND ADJOINING AREAS (CAQM)



- It is a **statutory body** established under the **Commission for Air Quality Management in National Capital Region (NCR) and Adjoining Areas, Act 2021**.
- **Mandate:** Better **coordination, research, identification, and resolution of problems surrounding the air quality index** and for matters connected therewith or incidental thereto.
- It undertakes **action for the prevention and control of Air pollution in Delhi-NCR & Adjoining Areas** which impacts the air quality of the National Capital Territory (NCT) of Delhi.
- The Commission is **required to coordinate its actions** on monitoring of air quality **with the government of Delhi and the adjoining states**, which includes **Punjab, Haryana, Rajasthan, and Uttar Pradesh**.

Powers:

- **Restricting activities** influencing air quality.
 - **Investigating and conducting research** related to environmental pollution **impacting air quality, preparing codes and guidelines** to prevent and control air pollution.
 - **Issuing directions on matters including inspections, or regulations**, which will be binding on the concerned person or authority.
 - **All the directions and orders** by the Commission are of **binding nature**, and any **person, officer, or authority shall be bound to comply** with the same.
 - The commission is **directly accountable to the parliament**.
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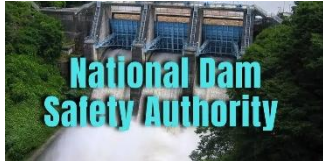
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WHAT IS THE NATIONAL DAM SAFETY AUTHORITY (NDSA)?



- It is a **statutory body** set up by the Central Government under the **Dam Safety Act, 2021**.

- It operates with a clear mandate to **regulate, oversee, and inspect dams**.
- It is **headed by a chairman** and **assisted by five members** to lead its five wings - policy and research, technical, regulation, disaster and resilience, and administration and finance.
- It has its **headquarters** at **New Delhi**.

Functions of the Authority include:

- **implementing the policies** formulated by the **National Committee on Dam Safety**;
 - **resolving issues** between **State Dam Safety Organisations (SDSOs)**, or between a **SDSO and any dam owner** in that state;
 - **specifying regulations for inspection** and investigation of dams;
 - **providing accreditation to agencies** working on construction, design, and alteration of dams.
 - One of the standout features of the NDSA's approach is its **commitment to establishing and enforcing comprehensive safety standards**.
 - These standards encompass various aspects, **including structural integrity, environmental impact, and emergency response protocols**.
 - The NDSA actively engages in **nationwide awareness programs** to educate citizens about dam safety.
 - **In the face of natural calamities** or unforeseen events, the **NDSA ensures** that **comprehensive emergency response plans are in place**.
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INTERNATIONAL SOCIAL SECURITY ASSOCIATION



INTERNATIONAL
SOCIAL SECURITY
ASSOCIATION

- It was **founded in 1927**, under the auspices of the **International Labour Organization (ILO)**.
- It is the principal international organisation **for social security organisations, governments and departments of social security**.
- **Objective:** It promotes excellence in social security administration through professional guidelines, expert knowledge, services and support to enable its members to develop dynamic social security systems.

Governance of International Social Security Association

- **General Assembly:** It is actually the constituent assembly of the Association and is **the highest statutory body**. It consists of all members of the ISSA who are directly represented. **It meets every three years**.
- **Council:** It constitutes the electoral body of the Association, composed of the titular delegates of each country in which the ISSA has at least one affiliate member, with each of these countries having one titular delegate.
- **Bureau:** It constitutes the **administrative authority** of the Association, composed of the **President of the ISSA, the Treasurer, the Secretary General**, and elected members representing the different geographical regions of the world.
- **Control Commission:** It examines the **financial records** of the Association and the annual report and statements presented to the Bureau by the Treasurer, and verify that all financial transactions have been carried out in conformity with the Financial Regulations.
- **India is a member** country of this organization
- **Headquarters:** Geneva, Switzerland.



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CASSINI SPACECRAFT



- It is a joint project of **NASA, the European Space Agency and the Italian space agency (ASI).**
- Cassini was a **sophisticated robotic spacecraft** sent to **study Saturn** and its complex system of **rings and moons** in unprecedented detail.
- It was **launched on October 15, 1997.** It was one of the largest interplanetary spacecraft.
- The mission consisted of **NASA's Cassini orbiter**, which was the first space probe to orbit Saturn, and the **ESA's Huygens probe**, which landed on Titan, Saturn's largest moon
- **Objectives of Cassini spacecraft:**
 - **Saturn**—Study cloud properties and atmospheric composition, winds and temperatures, internal structure and rotation, ionosphere, origin, and evolution
 - **Rings**—Observe their structure and composition, dynamical processes, interrelation of rings and satellites, dust and micrometeoroid environment.
 - **Titan**—Study abundances of atmospheric constituents, distribution of trace gases and aerosols, winds and temperatures, composition and state of the surface, and upper atmosphere
 - **Saturn's Magnetosphere**—Study its structure and electric currents; composition, sources, and sinks of particles within it; dynamics; interaction with the solar wind, satellites, and rings; Titan's interaction with solar wind and magnetosphere
- **Components of Cassini Spacecraft**
 - The instruments on board Cassini included **radar to map the cloud-covered surface of Titan** and a magnetometer to study Saturn's magnetic field.
 - The disk-shaped Huygens probe was mounted on the side of Cassini and carried **six instruments** designed to study the **atmosphere and surface of Titan.**



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ELECTRONICS COMPONENT MANUFACTURING SCHEME



Electronics Components
Manufacturing Scheme

- It is the first dedicated **Production-Linked Incentive (PLI) scheme** to promote the manufacturing of select passive electronic components, including resistors, capacitors, speakers, microphones, special ceramics, relays, switches, and connectors.

Objective: To develop a robust component manufacturing ecosystem by attracting investments (global / domestic) across the value chain by integrating its **domestic electronic industry with the Global Value Chains (GVCs).**

The scheme will offer **three incentive structures:**

- Turnover-linked incentive (based on revenue)
 - Capex-linked incentive (for investments in plants & machinery)
 - Hybrid incentive model (a combination of both)
 - Incentives for incremental investments and **turnover range from 1–10% depending on the year and the component.**
 - Employment generation will be a mandatory requirement for all applicants, including both component manufacturers and capital equipment producers. Thus, the scheme not only boosts manufacturing but also creates skilled jobs.
 - **Tenure:** This scheme has a **tenure of six years**, with a one-year gestation period.
 - The scheme focuses particularly on passive electronic components. In contrast, active components fall under the purview of the **India Semiconductor Mission (ISM).**
 - This scheme is set to benefit a number of industries, such as automobiles, consumer electronics, and electronics.
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GOVT MANDATES SOUND ALERT DEVICES FOR EVS TO ENHANCE ROAD SAFETY

The Ministry of Road Transport and Highways (MoRTH) has proposed mandatory **Acoustic Vehicle Alerting Systems (AVAS)** in electric cars, buses, and trucks to curb road accidents. AVAS will generate artificial sound when EVs move at **0–20 kmph**, alerting pedestrians and other road users to their presence.

As per the draft notification, all new EV models manufactured after **October 1, 2026**, must be fitted with AVAS, while existing models must comply by **October 1, 2027**. The move addresses safety concerns caused by the near-silent operation of EVs at low speeds, ensuring better audibility and reducing accident risks.

Acoustic Vehicle Alerting System (AVAS)

- AVAS is a safety feature designed to generate an audible warning sound for electric and hybrid vehicles, which are often nearly silent when operating at low speeds.
- It's intended to alert pedestrians, cyclists, and other vulnerable road users to the vehicle's presence, helping to prevent accidents.

Working of AVAS

- AVAS operates automatically based on the vehicle's driving condition:
 - **Activation**
 - The system is typically mandated to activate when the vehicle is moving at low speeds, generally from startup up to a threshold like 20 km/h (about 12 mph) or 30 km/h depending on the specific regulations.
 - It also usually activates when the vehicle is in reverse gear, regardless of speed.
 - **Sound Generation**
 - The AVAS uses an external speaker (often mounted beneath the bodywork) to generate an artificial, continuous sound.



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- This sound is usually designed to resemble that of a conventional internal combustion engine vehicle or a distinct, recognizable warning signal.
- **Speed Synchronization**
 - The system is connected to the vehicle's electronic control unit (ECU) or Controller area network (CAN)-Bus to get real-time data on speed and gear.
 - The pitch (frequency) and sometimes the volume of the generated sound automatically vary in proportion to the vehicle's speed.
 - This change in characteristic helps pedestrians to perceive the vehicle's acceleration, deceleration, and distance.
- **Deactivation**
 - When the vehicle exceeds the low-speed threshold (e.g., above 20 km/h or 30 km/h), the AVAS typically deactivates.
 - At higher speeds, the natural noise generated by the vehicle's tires on the road and aerodynamic drag becomes sufficiently loud to alert other road users.

Why India Needs Acoustic Alert Systems in EVs?

- Electric vehicles (EVs) running below 20 kmph produce minimal sound, making them harder to detect and raising the risk of accidents, especially for pedestrians and cyclists.
 - To address this safety gap, the MoRTH has proposed Acoustic Vehicle Alerting Systems (AVAS), which will generate sound to warn road users of an approaching EV.
 - The move comes amid a rapid surge in EV adoption.
 - According to MoRTH's e-Vahan portal, **19.5 lakh EVs were sold in 2024**, accounting for 7.44% of all vehicles sold that year.
 - India's EV share has grown from just 0.01% in 2014-15 to 7.31% in 2024-25, with over 56.75 lakh EVs registered by February 2025.
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THE MARITIME SIGNALLING AFTER OPERATION SINDOOR

- While the **May 2025 standoff between India and Pakistan** unfolded primarily in the air domain, **subsequent developments indicate** that the focus of their rivalry has shifted toward the maritime theatre.
- Naval manoeuvres, statements from political and military leaders, and visible demonstrations of capability all suggest that **the Indian Ocean is becoming a central arena of competition.**
- Unlike past crises that remained confined to land and air, the growing salience of the sea reflects **both changing force postures and a wider geopolitical context shaped by Chinese and Turkish involvement.**

Escalation Risks at Sea

- Unlike aerial skirmishes, **naval confrontations present a unique challenge for escalation control.**
- Ships and submarines, **once deployed, linger in contested waters, making disengagement slower and costlier.**
- **Memories of India's decisive naval blockade in 1971 continue to shape Pakistan's maritime outlook,** motivating its pursuit of anti-access/area-denial capabilities and reinforcing its emphasis on deterrence-by-denial.
- **The psychological weight of Gwadar and Karachi adds to the volatility.** Both are more than logistical hubs, they are strategic pressure points embedded within Pakistan's national security psyche.
- Any **Indian naval action against these sites risks being interpreted as existential,** potentially triggering escalation beyond limited aims.

Conclusion

- **Naval exercises, missile tests, and capability inductions** suggest that both sides are preparing for the possibility of confrontation at sea.



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- **India retains advantages in numbers and geography**, but Pakistan's modernisation, combined with Chinese and Turkish involvement, is narrowing the gap.
- **Ultimately, India faces a choice: whether to treat the maritime theatre as an arena for early signalling in crises, or to hold it in reserve as an escalatory lever.**
- **Either way, the next India–Pakistan confrontation is unlikely to remain confined to the skies;** the Indian Ocean is fast becoming the new frontier of their enduring rivalry.

KANHA TIGER RESERVE



- **Location:** It is located in the “Maikal” ranges of the **Satpuras** in the state of **Madhya Pradesh**.
- It was declared a reserve forest in 1879 and revalued as a wildlife sanctuary in 1933. Its position was further upgraded to a national park in 1955.
- **Corridor:** It has an active corridor between **Kanha and Pench Tiger Reserves**. Kanha is also connected with the **Achanakmar Tiger Reserve** of Chhattisgarh State.
- **Habitat:** It is characterized mainly by forested shallow undulations, hills with varying degrees of slopes, plateaus, and valleys.
- **Tribal Communities:** The region is known for some of the ancient tribal communities, like the **Gond and Baiga** still inhabit the region.
- It is also the first tiger reserve in India to officially introduce a mascot, “**Bhoorsingh the Barasingha**”.
- **Flora:** It is primarily a moist Sal and moist mixed deciduous forest where Bamboo, Tendu, Sal, **Jamun, Arjun, and Lendia** flourish.
- **Fauna:** The Park has a significant population of Royal Bengal Tigers, leopards, sloth bears, and Indian wild dogs.
- The Park is respected globally for **saving the Barasingha** (the state animal of Madhya Pradesh) from near extinction and has the unique distinction of harbouring the last world population of this deer species.