

EV BATTERY FIRES: THE SCIENCE, THE RISKS, AND THE INDORE WAKE-UP CALL

Causes of Thermal Runaway in EV Batteries

- **Physical Damage to Battery Pack** - Strong impacts (especially to the undercarriage) can damage the battery casing. This may puncture or deform cells, leading to internal short circuits and overheating.
- **Overcharging and Faulty Chargers** - Charging beyond safe limits can cause charge buildup in unstable areas of the battery. Use of third-party or damaged chargers increases this risk. Repeated overnight charging with unsafe chargers can worsen the problem.
- **Manufacturing Defects** - Rare defects like metal protrusions inside cells can connect positive and negative electrodes. This leads to sudden high current flow, generating excessive heat and triggering thermal runaway.
- **Electrical Infrastructure Issues** - Weak or old wiring and extension cords may not handle sustained current. This can cause overheating during charging, indirectly increasing fire risk.

Industry and User Measures to Improve EV Battery Safety

- **Advanced Cooling Technologies** - EVs use coolant channels to absorb and dissipate heat. New systems are being developed where coolant evaporates to improve heat transfer, helping manage sudden temperature spikes.
- **Safer Battery Design Innovations** - Shift towards solid-state batteries (using solid electrolytes) to reduce fire risks. Improved internal firewalls to prevent fire from spreading between cells if one fails
- **User-Level Safety Precautions**
 - Use only manufacturer-approved chargers.
 - Avoid unattended or overnight charging with unsafe setups.
 - Ensure home electrical systems can handle high loads.

- Get batteries checked after impacts.
 - Allow battery to cool after long drives before charging and keep charging areas clear.
 - **Strengthened Safety Standards in India**
 - Bureau of Indian Standards (BIS) updated EV battery safety norms in 2023.
 - Under AIS-156 standards, batteries must:
 - Undergo tests for heat propagation
 - Provide at least five minutes for passenger evacuation in case of fire
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WORLD WATER DAY



- World Water Day held on **March 22 every year since 1993.**
 - It is an annual United Nations Observance focusing on the **importance of fresh water.**
 - **History**
 - The idea of World Water Day was first introduced in 1992 during the **United Nations Conference on Environment and Development held in Rio de Janeiro.**
 - Following the conference, the United Nations declared March 22 as the official day to focus on water-related issues worldwide.
 - A core focus of World Water Day is to support the achievement of **Sustainable Development Goal 6: water and sanitation for all by 2030.**
 - **Theme (2026):** Water and Gender.
 - This theme highlights the important **role of women and girls in water management.**
 - **Significance of the World Water Day:** World Water Day raises awareness about serious water challenges such as water scarcity, pollution, and lack of sanitation facilities.
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MUTUAL CREDIT GUARANTEE SCHEME



- It provides **60 % guarantee coverage** by **National Credit Guarantee Trustee Company Limited (NCGTC)** to Member Lending Institutions for credit facilities up to **100 crore rupees sanctioned to eligible MSMEs** under MCGS-MSME for purchase of equipment and machinery.

Salient Features of Mutual Credit Guarantee Scheme:

- **Target:** Borrower should be an MSME with valid **Udyam Registration Number**.
- The eligibility criteria have also been **expanded to service sector MSMEs**.
- The **minimum project cost requirement** towards machinery and equipment has been reduced to **60 per cent from the earlier 75 per cent**.
- The **5% upfront contribution** has been **made refundable**, with one per cent returned each year from the fourth year onwards, **subject to satisfactory loan performance**.
- The credit **guarantee would expire after 10 years**, as compared to the unspecified period in the earlier scheme.
- It is applicable to all loans sanctioned under MCGS-MSME during the period of **4 years** or till cumulative guarantee of **7 lakh crore** are issued, whichever is earlier.
- **Eligible exporters:**
 - Profitable units having **exported at least 25% of their sales turnover** in each of previous 3 financial years
 - **Guaranteed loan amount is pegged at ₹20 crore**, and upfront contribution is 2% of the loan amount, a **maximum of ₹40 lakh**, with 1% each refundable in the **4th and 5th year** of the guarantee period.

SUPREME COURT ON PAID MATERNITY LEAVE FOR ADOPTIVE MOTHERS

- The Supreme Court struck down the restrictive provision limiting maternity leave for adoptive mothers.
- Adoptive mothers are now entitled to 12 weeks of paid maternity leave regardless of the child's age at adoption.
- The Court held that such restrictions violate principles of equality and child welfare.
- The judgment recognises adoptive mothers as having the same rights and responsibilities as biological mothers.

Rationale Behind the Judgment

- **Beyond Biological Definitions**
 - The Court stated that motherhood cannot be viewed through a “**narrow lens of biology**” and must include adoptive relationships.
- **Child-Centric Approach**
 - Adopted children often face emotional and psychological challenges.
 - The initial bonding period is critical for their development.
 - The Court noted that children raised in institutional settings may have higher stress levels, requiring greater parental care after adoption.
- **Right to Reproductive Autonomy**
 - Adoption was recognised as part of an individual's reproductive choices, linking the judgment to broader constitutional rights.

Limitations of the Earlier Law

- The earlier provision was considered inadequate for several reasons:
 - The three-month age limit excluded most adoptive parents
 - Adoption procedures in India often take longer than three months
 - Data showed that less than 5% of adopted children were below three months of age
- As a result, many adoptive mothers were effectively denied maternity benefits.

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Impact of the Judgment

- **Greater Inclusivity:** The judgment ensures equal treatment of adoptive and biological mothers under labour laws.
- **Improved Child Welfare:** Adequate maternity leave allows adoptive parents to:
 - Build emotional bonds
 - Support child development
 - Provide a stable home environment
- **Support for Working Women:** The decision reduces the conflict between career and caregiving responsibilities for adoptive mothers.

Court's Observations on Parenthood

- The Supreme Court emphasised that parenting responsibilities should not be viewed as solely maternal.
 - It highlighted the importance of shared parenting
 - Recognised the role of fathers in childcare
- The Court recommended that the Union government consider a formal legal framework for paternity leave.

Status of Paternity Leave in India

- Currently, male government employees are entitled to 15 days of paternity leave.
- In the private sector, policies vary across organisations.
- There is no comprehensive national law governing paternity leave, leading to uneven benefits.

Significance of the Judgment

- **Constitutional Values:** The judgment strengthens principles of Equality (Article 14) and Dignity & autonomy.
 - **Gender Justice:** By recognising shared parenting, it moves toward a more gender-balanced framework.
 - **Labour Law Reform:** It highlights gaps in India's labour laws and the need for modern, inclusive policies.
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PRARAMBH 2026



- PRARAMBH (Policy Reform and Responsible Action for Mission Viksit Bharat) is a nationwide awareness campaign on **Income Tax Act, 2025**.
 - It is aimed at familiarising citizens with the provisions of the **Income Tax Act, 2025**, set to come into effect **from April 1, 2026**.
- It has been designed as an **extensive, multi-channel initiative** spanning print, television, radio, outdoor advertising, digital platforms, and social media.
- **Ministry Involved:** Ministry of Finance
- **Key Features of PRARAMBH:**
 - **Comprehensive Outreach:** It includes a wide **range of taxpayer-centric resources** such as, guidance notes and brochures, **tutorial videos, FAQs and educational content** and Public engagement initiatives like the MyGov Quiz.
 - **Multilingual Approach:** Brochures containing detailed information were also **launched in 10 regional languages** beside English and Hindi for wider outreach and awareness
 - **AI-Driven Support:** AI-enabled **chatbot ‘Kar Saathi’**, designed to assist taxpayers with queries related to the new Act, rules, and procedures.
 - **Income Tax Website 2.0:** The upgraded platform is designed to offer improved usability, simpler navigation, and more efficient service delivery for taxpayers.



GLOBAL TERRORISM INDEX

- It is published by the **Institute for Economics and Peace (IEP)**, a Sydney-based independent, non-profit think tank.
- It is a comprehensive study analysing the **impact of terrorism for 163 countries** covering 99.7 per cent of the world’s population.

- **Methodology**
 - The GTI scores each **country on a scale from 0 to 10**; where 0 represents no impact from terrorism and 10 represents the highest measurable impact of terrorism. This produces a composite score so as to provide an ordinal ranking of countries on the impact of terrorism.

Key Highlights of Global Terrorism Index 2026

- Deaths from terrorism fell by 28 per cent and incidents decreased by 22 per cent
- **Six of the ten countries most impacted** by terrorism are in **sub-Saharan Africa**, maintaining its position as the epicenter.
- For the first time, **Pakistan leads the Index** as the country most impacted by terrorism.
- **India is placed 13th** on the list.
- **Deadliest terror outfits (2025)**: IS, Jamaat Nusrat Al-Islam wal Muslimeen (JNIM), Tehrik-e-Taliban Pakistan (TTP), and alShabaab.

MANGROVES



- Mangroves are **salt-tolerant trees and shrubs** that grow in coastal intertidal zones, primarily in **tropical and subtropical regions**.
 - It thrives in **saline or brackish waters**, withstanding harsh environmental conditions such as tidal fluctuations, high salinity and **low oxygen levels in the soil**.
- **Mangroves Characteristics:**
 - **Salt Tolerance:** They possess specialised root structures, such as salt-filtering roots and salt-excreting leaves, to manage high salinity levels.
 - **Aerial Roots (Pneumatophores):** These roots **help in respiration** by obtaining oxygen from the air in waterlogged soils.
 - **Prop Roots:** Provide stability against tidal waves and storm surges.
 - **Vivipary (Seed Germination):** Seeds **germinate while still attached to the parent tree** to overcome the challenge of germination in saline water.

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- **Efficient Carbon Sequestration:** Mangroves are among the most carbon-rich ecosystems, playing a vital role in mitigating climate change.
 - Mangrove forests act as a **crucial buffer between land and sea**, providing habitat for various marine and terrestrial species.
 - In India this ecosystem is found in **Sundarbans** (West Bengal), **Mahanadi, Godavari, and Krishna Deltas** (Odisha & Andhra Pradesh), **Pichavaram Mangroves** (Tamil Nadu), **Bhitarkanika Mangroves** (Odisha), **Gulf of Kutch** (Gujarat), **Andaman & Nicobar Islands and Lakshadweep regions**.
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SHAHEEN FALCON



- The Shaheen falcon (*Falco peregrinus peregrinator*) is a **non-migratory subspecies of the Peregrine falcon**.
 - **Appearance:**
 - The face is characterised by a dark vertical stripe from the eye to the side of the face, which often gives the bird a severe appearance.
 - The bird has a muscular body — with the **female being larger than the male**.
 - **Habitat:** It is found on **rocky and hilly regions** on cliffs and rock pinnacles.
 - **Distribution:** This small but powerful-looking falcon is **found mainly in the Indian subcontinent**.
 - These birds have also been reported from the **Andaman and Nicobar Islands** in the Bay of Bengal.
 - **Food Habits:** It eats chiefly birds; occasionally mammals, including bats, rats, rabbits and voles; also insects, reptiles and exceptionally fish.
 - Peregrines are **masters of the stoop**.
 - Their bodies are shaped to generate high speeds and turn into a weapon when they go into hunt mode.
 - **Conservation Status**
 - **IUCN:** Least Concern
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INS TARAGIRI



- It is the **fourth ship of Nilgiri Class (Project 17A)** built by **Mazagon Dock Shipbuilding Ltd (MDL)**.
- It is a reincarnation of the erstwhile INS Taragiri, a Leander-class frigate that was part of the Indian Naval fleet.
- It is designed by the **Warship Design Bureau (WDB)**.

Features of INS Taragiri:

- It is fitted with an advanced weapon and sensor suite compared to the P17 (Shivalik) class.
- It is designed for '**High-Speed – High Endurance**' versatility and multi-dimensional maritime operations.
- The ship's weapon suite is featuring supersonic **Surface-to-Surface Missiles**, **Medium Range Surface-to-Air Missiles**, and a **specialised Anti-Submarine Warfare suite**.
- **Propulsion:** It is configured with **Combined Diesel or Gas (CODOG)** propulsion plants, comprising a diesel engine and a gas turbine that drive a **Controllable Pitch Propeller (CPP)** on each shaft, and state-of-the-art **Integrated Platform Management System (IPMS)**.
- **Weapon suit:** The potent weapon and sensors suite comprises **BrahMos SSM**, **MFSTAR** and **MRSAM complex**, **76mm SRGM**, and a combination of close-in weapon systems, along with rockets and torpedoes for anti-submarine warfare.