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CLIMATE EQUITY AND INDIA'S CLIMATE ACTION

- At an international conference on “The Future of Environment and Climate Dynamics”, organised by the National Green Tribunal (NGT), the Indian PM highlighted the unequal distribution of global carbon emissions.
- The Indian PM questioned the narrative that places disproportionate responsibility for global emissions on developing countries.
- **India's per capita carbon emissions** are about 2.2 tonnes annually, less than half the global average of 4.7 tonnes.
- **Developed countries** have per capita emissions roughly six times higher than India's. For example, per capita emissions of the US (14.2 tonnes) and Russia (14 tonnes) are substantially higher than India's.
- India's cumulative contribution to global carbon emissions during 1751–2024 is about 3.5%, compared with 23.5% for the US, 15.4% for China, 6.6% for Russia, 5.1% for Germany and 4.3% for the UK.
- India argues that developed countries bear greater historical responsibility, having achieved development through extensive fossil-fuel consumption over the past two centuries.
- At the same time, India maintains that it has not evaded its climate responsibilities and has **implemented its commitments** under the Paris Agreement.

India's Climate Action:

- India is the **only G20 country** to have fulfilled all its COP21 Paris commitments ahead of schedule, particularly in areas such as non-fossil-fuel capacity, renewable energy and emissions reduction.
- India's climate **initiatives** highlighted at the conference include -
 - **Solar energy capacity:** Increased from around 2 GW in 2012 to 160 GW.
 - **PM-KUSUM:** Around 30 lakh farmers have received solar pumps.
 - Expansion of wind and hydropower.

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- Promotion of rooftop and decentralised solar power.
- **Electric vehicles:** Annual sales increased from around 3,000 in 2014 to 25 lakh in the previous year.
- **Metro rail:** Expanded from less than 250 km across five cities before 2014 to over 1,000 km across 20 cities.
- 100% railway electrification.
- Expansion of inland waterways.
- Around 3,000 km of Dedicated Freight Corridors (DFCs), reducing fuel consumption.
- India has also promoted international initiatives such as the International Solar Alliance, Global Biofuel Alliance and International Big Cat Alliance.

India's Position Ahead of COP31:

- India is expected to continue advocating climate action based on -
 - Equity and climate justice
 - Historical responsibility
 - **Implementation of existing commitments**
 - Greater attention to the needs of vulnerable developing countries
 - Balancing developmental needs with climate action
- The issue has acquired greater significance as vulnerable countries seek support through mechanisms such as the **Loss and Damage Fund (LDF)** for climate-induced disasters.

Conclusion:

- **India's climate diplomacy** seeks to reconcile developmental aspirations, climate justice and global environmental responsibility.
- Its position stresses that present-day emission obligations must be considered alongside historical emissions, per capita disparities and the developmental needs of poorer countries.
- This position simultaneously demonstrates domestic progress in renewable energy, clean mobility, electrification and biodiversity conservation.

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AUTONOMY FOR LADAKH - WHY PUNJAB AND HARYANA SHOULD PAY ATTENTION

- The Centre has proposed a new constitutional provision, **Article 371(K)**, and a Union Territory-level governance arrangement for Ladakh, while local leaders continue to press for stronger political representation, land safeguards and administrative accountability.

Beyond a Constitutional Question

- The glaciers and snowfields of Ladakh sustain agriculture across the northern plains, making the region far more than a remote frontier.
- Punjab and Haryana remain deeply dependent on Himalayan waters. What happens to snowfall, glacial melt, and hydrological rhythms in the high Himalaya travels downstream.
- Himachal Pradesh, whose Lahaul-Spiti region lies alongside Ladakh, is part of this larger ecological chain.

The Indus Waters Treaty

- The Indus Waters Treaty of 1960, negotiated with the help of the World Bank, divided the Indus river system between India and Pakistan.
- The eastern rivers, Ravi, Beas and Sutlej, were allocated to India, while the western rivers, Indus, Jhelum and Chenab, were allocated to Pakistan, subject to specified uses by both countries.
- The Indus itself flows through Ladakh before continuing into Pakistan. In April 2025, India announced that it was placing the treaty in abeyance following the Pahalgam terror attack.
- This makes the demand for constitutional safeguards in Ladakh more than a question of identity and representation.
- For local leaders, autonomy is also about control over the pace and nature of development in a cold desert where cultivable land is scarce and water is precious.

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The Land Question

- Land has become one of the sharpest flashpoints in the ongoing talks.
- At the centre of the dispute is **Ailan No. 38**, a regulation from the Dogra-Maharaja period, dating to the reign of **Maharaja Hari Singh**, relating to the cultivation and ownership of barren land known as **nautor**.
- Recent moves to place a ceiling on the land individuals can claim have drawn strong local opposition.

Rising Land Prices

- The concern is not simply about changing ownership patterns. It is also about what this could mean for the social and ecological character of the region. The very landscape that attracts outsiders is among the least equipped to absorb unlimited human pressure.

Why the Plains Should Care?

- Governance in a climate-stressed Himalaya requires thinking across administrative boundaries and across decades rather than in short political cycles.
- For decades, the political relationship ran largely in one direction: the plains decided Ladakh's political fate. The direction of consequence may now be changing; Ladakh's ecological fate could determine the future of the plains.
- This means Punjab and Haryana have a stake in decisions about land use, construction, tourism pressure and glacial protection in Ladakh, because those decisions shape water availability downstream long after the constitutional debates are concluded.

The Core Question

- The question before the Centre and Ladakh's political leadership is therefore more complicated than statehood or representation alone:
 - Can there be a model of governance for fragile regions that combines political representation with ecological responsibility?
- Article 371(K) as proposed may address the first half of that question. Whether it addresses the second remains unclear, and it is the second that will determine outcomes far beyond Ladakh's boundaries.

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SLOWING THE AI RACE: SAFETY CONCERNS FROM WITHIN THE INDUSTRY

Anthropic CEO Dario Amodei has urged artificial intelligence companies to **slow the race** to build ever more powerful models. He made the call in an essay published recently. The appeal drew quick backing from OpenAI CEO Sam Altman and from Elon Musk.

What Amodei Is Asking For?

- Amodei is not asking for a halt. He wants the industry to "**pace the frontier**" so that safety research can catch up.
- His argument is simple. Gaining even another year or two before models reach critical capability levels would give researchers valuable time to strengthen safeguards and reduce the risk of catastrophic failure.

The Core Worry: Self-Improvement and Autonomy

- **Recursive Improvement** - Models are increasingly able to improve themselves and help build the next generation of AI systems. They could eventually improve faster than humans can understand, monitor or control them.
- **Agentic Autonomy** - AI agents can now break a broad task into smaller jobs, use software tools, and work for long stretches with little human intervention.
- Together, these make the traditional approach — build a more capable system first, address its risks later — increasingly dangerous.

The Trigger: Anthropic's Threat Report

- Anthropic had published a threat-intelligence report on misuse of its Claude models between **December 2025 and August 2026**, across **seven harm areas**.
- Its central finding was not that people asked AI for dangerous answers. It was that they handed it the work.
- **The autonomy spectrum**
 - **Assistant (low autonomy)**: Used conversationally to help build malware, phishing kits and surveillance tooling. The human operates.

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- **Directed execution (medium):** The model runs commands against live networks and harvests credentials, but a human makes each targeting decision.
- **Orchestrator (high):** Multi-agent systems run reconnaissance, exploitation and theft against several victims in parallel. One case ran thirteen collection agents on a schedule with no human in the loop.
- **The Seven Areas**
 - **Cyber operations:** Operators based in Hunan, China — two of them undergraduate students — ran several AI agents at once, working round the clock.
 - The agents scouted targets, hunted for unknown flaws in security devices, and carried out live break-ins.
 - Around 50 organisations were targeted, from schools and hospitals to government agencies.
 - **Influence Operations (Fake newsrooms, real broadcast towers):** Nine cases across Russia, Iran, Turkey, the Gulf, South Asia, Africa and Europe. One network published 8,913 articles in roughly 20 languages.
 - **Surveillance:** Profiling of clergy, activists and diaspora groups; a national platform in Mali with reach over about 25 million SIM cards.
 - **Scams and Fraud (Dating apps with nobody behind them):** Over 20 dating apps populated by 4,700+ AI personas; 25,000+ users interacted with them.
 - **Biological Misuse:** Five cases where Anthropic judged that the help sought could support bioweapons work. The requests involved altering the chikungunya virus, and studying bird flu, orthopoxviruses and new toxins. One came disguised as a research grant application.
 - **Conventional Weapons:** Six cases involving drone swarms and missile software; no evidence any weapon was fielded.
 - **Illicit Distillation:** Distillation — training a smaller model on a larger one's outputs — is ordinary practice. Alleged unauthorised training on Claude outputs, including a campaign peaking near three million exchanges a day.

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WHAT IS A BATTERY ENERGY STORAGE SYSTEM (BESS)?



- A BESS is a system that **stores electrical energy in rechargeable batteries** and **releases it when power is needed**.

- A complete BESS is more than a battery. A **complete BESS**

typically includes:

- **Battery cells or modules**, which store the energy
 - A **Battery Management System (BMS)**, which monitors cell voltage, temperature, and state of charge to keep the battery safe and efficient
 - A **Power Conversion System (PCS)**, often called an inverter, which converts stored DC power to usable AC power (and back again during charging)
 - **Thermal management**, such as cooling or heating systems, to keep the battery within a safe operating temperature range
 - A **control and monitoring system**, sometimes cloud-connected, that manages charging and discharging based on rules, schedules, or grid signals
 - An **enclosure**, ranging from a small wall-mounted box for homes to a shipping-container-sized unit for utility projects.
- It operates by **capturing electricity from various sources** (either from the grid, from solar panels, from wind turbines, or from any other generation source), **storing it**, and **discharging it when needed**.
 - BESS technology allows **electricity to be stored when supply is abundant, demand is low, or power prices are favorable**.
 - The system can then **discharge during outages, peak demand periods, renewable generation dips**, or times when electricity is more expensive.
 - This flexibility makes BESS **valuable for commercial facilities, industrial sites, utilities, microgrids, and renewable energy projects**.

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BIDRIWARE



- It is a **form of metal handicraft** which has been made for centuries by artisans from **Karnataka's Bidar district**.
- It is renowned for its **intricate, handcrafted designs**.
- **Origin:**
 - The origin of Bidriware as a craft is attributed mostly to the **Bahamani Sultans** who ruled the region during the **14th and 15th centuries**.
 - It was first brought to India by the noted **Sufi Khwaja Moinuddin Hasan Chisti** in the form of utensils.
 - The art form developed in the kingdom was a mix of **Turkish, Persian and Arabic influences**, which were intermingled with the local styles, and thus a unique style of its own was born.
- It has obtained a **Geographical Indications (GI) tag**.
- **How is Bidriware made?**
 - It is made primarily from a **zinc-copper alloy**, while silver is used for **intricate inlay work**.
 - The craftsman uses small chisels to engrave the design over the **freehand etching**. Craftsmen engrave **delicate floral and geometric patterns** on the surface and inlay silver into them.
 - Fine wire or flattened strips of pure silver are then carefully hammered into these grooves.
 - The **characteristic deep-black lustre** is produced using soil sourced from the historic Bidar Fort.
 - The soil is added to a chemical solution during the final stage of the process, giving the metal its distinctive black finish.
 - The product then undergoes a process **called buffing to smoothen the surface**.

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KAVACH SYSTEM



- It is an **indigenously developed Automatic Train Protection (ATP)** system that provides Train Protection as well as Collision Prevention capabilities for trains.
- It was adopted as **National ATP system in July 2020**.
- It has been developed by the **Research Design and Standards Organisation (RDSO)**.
- **Working Principle:**
 - It operates through continuous **real-time communication** between trackside systems and locomotives using secure **Ultra High Frequency (UHF) radio antenna** and track-mounted **Radio Frequency Identification (RFID)** tags.
 - These tags provide precise train location, while wayside (stationary) units collect live data from station interlocking systems, including signal aspects, point positions, track occupancy, and route status.

Key safety features:

- **Detection and prevention of Signal Passing at Danger (SPAD):** It automatically stops the train before the signal.
- **Cab signaling** with display of movement authority, target distance, speed, and signal aspects.
- **Prevention of all types of train collisions:** head-on, rear-end, and side-on.
- Continuous **real-time updates** to the locomotive.
- **Automatic horn activation** when approaching Level Crossing Gates.
- **Emergency Stop (SoS)** messages in critical situations.
- Centralized live monitoring of train movements through the **Network Management System (NMS)**.