



19 December, 2023

Nationally Determined Contribution

Context: India has successfully met two goals outlined in its Nationally Determined Contribution well in advance of the set timeline.

- As a participant in the UNFCCC and the Paris Agreement, India submitted its initial NDC in 2015, featuring **two key targets**:
 - Decrease emissions intensity of GDP by 33-35% by 2030 from the 2005 level.
 - Attain approximately 40% cumulative electric power installed capacity from non-fossil fuel sources by 2030.

➤ India surpassed both targets well ahead of schedule:

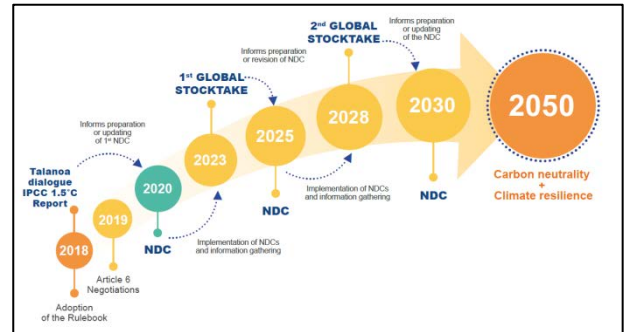
- As of October 31, 2023, non-fossil fuel-based energy contributes to 43.81% of the total cumulative electric power installed capacity, totaling 186.46 MW.
- India's third national communication to the UNFCCC, submitted in December 2023, confirms a 33% reduction in GDP emission intensity from 2005 to 2019.

➤ In August 2022, India revised its NDC with more ambitious targets:

- The goal to reduce GDP emission intensity increased to 45% by 2030 from the 2005 level.
- The target for cumulative electric power installed capacity from non-fossil fuel-based sources increased to 50% by 2030.

➤ Nationally Determined Contributions:

- **Essential to Paris Agreement:** NDCs form the core of the Paris Agreement, playing a crucial role in achieving its long-term objectives related to climate change mitigation and adaptation.
- **Country-Specific Climate Actions:** Each participating country is required, under Article 4, paragraph 2 of the Paris Agreement, to articulate, communicate, and maintain their NDCs. These contributions outline the nation's efforts to reduce emissions and adapt to the impacts of climate change.
- **Domestic Mitigation Measures:** Parties to the agreement are encouraged to implement domestic mitigation measures in pursuit of the objectives outlined in their NDCs.
- **Global Peaking of Emissions:** The overarching goal is to attain global peaking of greenhouse gas emissions as soon as possible, followed by rapid reductions based on the best available scientific knowledge. The ultimate aim is to achieve a balance between emissions and removals of greenhouse gases by the latter half of the century.
- **Equity Considerations:** Recognizing that developing countries may require more time to peak their emissions, the agreement acknowledges the need for equity in emission reductions. Such reductions are expected to align with sustainable development goals and poverty eradication efforts, which are critical for many developing nations.
- **Submission Schedule:** NDCs are submitted every five years to the UNFCCC secretariat. The Paris Agreement mandates that successive NDCs should demonstrate a progression compared to the previous ones, reflecting the highest possible ambition.
- **Long-Term Goals:** The agreement anticipates achieving its long-term goals, as specified in Articles 2 and 4.1, through a gradual increase in aggregate and individual ambition over time.
- **Regular Updating:** Parties are required to submit new or updated NDCs every five years, with submission deadlines set for specific years (e.g., 2020, 2025, 2030). This regular updating is designed to ensure continual progress toward climate action goals.
- **Flexibility for Adjustment:** Parties have the flexibility to adjust their existing NDCs at any time to enhance the level of ambition, as stipulated in Article 4, paragraph 11 of the Paris Agreement.



Telecom Bill 2023

Context: Union minister for Communications, Electronics & Information Technology Ashwini Vaishnaw presented the Telecommunications Bill, 2023 in the Lok Sabha.

➤ Introduction of the Telecommunications Bill, 2023:

- The Telecommunications Bill, 2023 aims to amend and consolidate laws related to the development, expansion, and operation of telecommunication services and networks, spectrum assignment, and related matters.
- It replaces the Indian Telegraph Act, 1885, the Indian Wireless Telegraphy Act, 1933, and the Telegraph Wires (Unlawful Possession) Act, 1950.

➤ Objectives and Reasons for the Bill:

- The statement of objectives and reasons highlights the telecommunications sector's role in economic and social development, serving as a gateway to digital services.

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- Emphasis is placed on the vital dependence of national security on the safety of telecommunication networks, necessitating a legal and regulatory framework for secure and inclusive digital growth.
- **National Security Provisions:**
 - The Bill grants the government the authority to take temporary control of telecom services and intercept messages in the interest of national security and during emergencies.
 - In cases of public emergencies or disaster management, the Central or State Government, or authorized officers, can, by notification, take possession of telecommunication services or networks from authorized entities.
- **Message Interception and Detention:**
 - The Bill allows for the interception, detention, or non-transmission of messages during public emergencies or for public safety, safeguarding the sovereignty, integrity, defense, and security of the state.
 - Specific criteria, such as preventing incitement to the commission of any offense or maintaining friendly relations with foreign states, guide the interception of messages.
- **Press Message Safeguards:** Press messages intended for publication in India, from correspondents accredited to the Central or State Government, are protected from interception or detention unless transmission has been prohibited under relevant rules.
- **Government Directive for Message Transmission:** The government, in the public interest, has the authority to direct authorized entities to transmit specific messages through telecommunication services or networks.
- **Adaptation to Evolving Telecommunication Landscape:** The Bill acknowledges the significant changes in telecommunication nature, usage, and technologies over the past decade, necessitating legislation that aligns with the evolving needs of society.
- **Implications under Indian Telegraph Act, 1885**
 - **Interception (Section 5(2)):** The Telegraph Act permits government call interception under defined situations, mirroring Article 19(2) restrictions on free speech.
 - **Conditions for Interception:**
 - Interception is contingent on a public emergency or public safety concerns.
 - Grounds for selecting a person for surveillance must be documented in writing.
 - **Journalist Exemption:**
 - Lawful interception is prohibited against journalists.
 - Press messages from accredited correspondents to the government are exempt, unless specific circumstances apply.
 - **Supreme Court's Influence and Rule 419A:** Supreme Court observations in 1996 prompted Rule 419A introduction in Telegraph Rules (2007) and IT Act rules (2009).
 - **Sanction for Interception:**
 - Rule 419A authorizes a Secretary in the Ministry of Home Affairs for central-level interception.
 - Comparable provisions exist at the state level for interception by designated authorities.

Solar Prominence

Context: Researchers from the Indian Institute of Astrophysics (IIA) investigating the development of a prominence eruption (PE) originating from the western limb of the Sun in 2013 have identified the solar burst's origin.

- Ground-based optical and radio telescope data, along with NASA's space-based satellite data, were utilized for the study.
- The research aims to enhance understanding of space weather dynamics.
- The sun frequently releases plasma and magnetic fields in the form of coronal mass ejections (CMEs).
- CMEs are associated with solar disk features like filaments or prominences.
- The triggering mechanisms of these eruptive features are of scientific interest.
- **Solar Prominence:**
 - **Definition of Prominence:** A prominence, sometimes called a filament, is a substantial structure of plasma and magnetic fields extending outward from the Sun's surface.
 - **Characteristics:**
 - Typically in a loop shape, prominences are anchored to the Sun's photosphere and extend into the solar corona.
 - They contain cooler plasma, similar in composition to the chromosphere, contrasting with the extremely hot plasma in the corona.
 - Formation occurs over about a day, and prominences may persist for weeks or months, reaching hundreds of thousands of kilometers into space.
 - Some prominences may lead to coronal mass ejections (CMEs).

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• Historical Background:

- The first detailed description dates back to the 14th-century Laurentian Codex, describing the solar eclipse of May 1, 1185.
- Angelo Secchi captured the first photographs of prominences during the solar eclipse of July 18, 1860.
- During the solar eclipse of August 18, 1868, spectroscopes detected emission lines from prominences, confirming their gaseous nature.

• Classification:

- Active region prominences form within strong magnetic fields at active region centers, having shorter lifetimes.
- Intermediate prominences form between weak unipolar plage regions and active regions.
- Quiescent prominences form in the weak background magnetic field, exhibiting greater stability and longer lifetimes.

• Morphology:

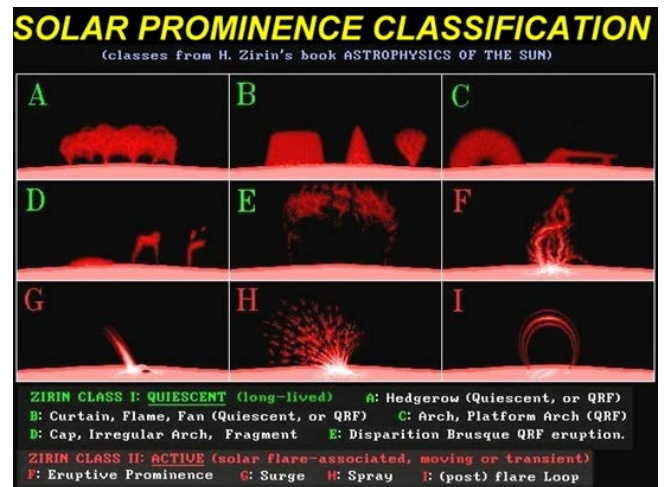
- Filament channels in the chromosphere and lower corona host prominences, thermally shielded from the corona.
- The prominence core is surrounded by a prominence-corona transition region (PCTR).
- Spines and barbs, thin structures tracing the magnetic field, define the upper main body of a prominence.
- Overarching magnetic arcades and helmet streamers extend above filament channels.

• Chirality and Orientation:

- Filament channels and their prominences exhibit chirality, with dextral or sinistral orientation.
- Orientation depends on the side of the filament channel's positive magnetic polarity.

• Formation and Eruption:

- The exact mechanism of prominence formation is not fully understood.
- Prominence eruptions, associated with speeds ranging from 600 km/s to over 1000 km/s, may lead to coronal mass ejections.
- At least 70% of prominence eruptions are linked to coronal mass ejections into the solar wind.



NEWS IN BETWEEN THE LINES

National Green Tribunal



Recently, the Southern Bench of National Green Tribunal queried the Tamil Nadu government and Chennai Petroleum Corporation Limited about an oil spill in Pulicat backwaters.

About the National Green Tribunal:

- The National Green Tribunal (NGT) is an **specialized judicial body** that handles environmental disputes in India.
- It was established on **October 18, 2010**, under the National Green Tribunal Act of **2010**.
- It **deals with civil cases** related to **environmental protection, forest conservation** and other **natural resources**.
- It comprises a **Chairperson, Judicial Members** and **Expert Members**, all of whom serve a **non-renewable 5-year term**.
- The **Chairperson is appointed by the Central Government** in consultation with the Chief Justice of India, while a Selection Committee is responsible for the appointment of Judicial and Expert Members.

Mehar Tunnel



Recently, excavation on the Mehar tunnel along the Jammu-Srinagar highway paused due to sidewall pressure and bulging issues.

About Mehar Tunnel:

- Mehar tunnel is situated along the **270-km Jammu-Srinagar National Highway**.
- It is a **780-meter C-type tunnel** that is being built as part of a national highway realignment project.
- Its construction aims to bypass the landslide-prone **Mehar-Cafeteria** stretch in Ramban district, Jammu & Kashmir.
- It designed to **enhance road connectivity** and **safety** in the region.
- The construction of the tunnel started over a year and a half ago to mitigate the risks posed by frequent landslides in the area

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Mullaperiyar Dam

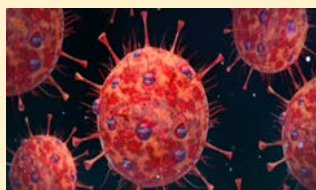


Recently, the water level at Mullaperiyar dam hit 138.05 feet, prompting the decision is to open its spillway shutters today.

Mullaperiyar Dam:

- Mullaperiyar dam is a **gravity dam** located on the confluence of the **Mullayar** and **Periyar** rivers in Idukki district of **Kerala**.
- It was built in **1895** by the **British administration** and is the **first dam in Kerala**.
- However, the dam is **operated and maintained by the Tamil Nadu** for meeting the requirements of five (Theni, Madurai, Sivaganga, Dindigul and Ramnad) of its southern districts.
- The dam is entirely in Kerala but was given on lease to Tamil Nadu on **October 29, 1886 for 999 years**.
- According to a **999-year lease agreement** made during the British rule the operational rights were handed over to Tamil Nadu.

JN.1 Variant



Recently, the Union Health Ministry issued advisory to States in view of detection of the new JN.1 variant in India.

About JN.1 Variant:

- JN.1 is derived from the **BA.2.86 (Pirola)** variant and was first identified in the **United States in September**.
- It **possesses one additional mutation** on the **spike protein** compared to **Pirola**, which is critical for viral cell entry.
- Both **Pirola** and **JN.1** were effectively neutralized by serum from previously infected or vaccinated individuals, as per WHO assessments.
- Symptoms associated with JN.1 are similar to those caused by previous strains of the virus, including **fever, runny nose, sore throat, headache** and **mild gastrointestinal symptoms** such as **abdominal pain** and **diarrhoea**.

Place in News

North Korea

Recently, North Korea test-fired its most advanced intercontinental ballistic missile that has the potential to reach the U.S.

North Korea (Capital: Pyongyang)

Location: North Korea is located in **East Asia** and occupies the northern half of the Korean Peninsula.

Boundaries: North Korea shares its border with the **Yellow Sea** and Korea Bay (West), **Japan** across the Sea of Japan (East), **China** along the Yalu (Amnok) River (North), **Russia** along the Tumen River (Northeast) and South Korea (South).

Physical Features:

- **Paektu-san**, also known as **Baekdu-san** or **Changbai Mountain**, is an active stratovolcano and the tallest mountain in North Korea.
- North Korea is dominated by the **Taebaek Mountains** along the east coast and the **Hamgyong Mountains** in the northeast.
- The **Yalu** and **Tumen** rivers are both significant rivers that form the border between **China** and **North Korea**.



POINTS TO PONDER

- Where is the Swarved Mandir inaugurated recently? - **Varanasi, Uttar Pradesh**
- 'A Green and Sustainable Growth Agenda for the Global Economy' Report is prepared by which organisations in collaboration? - **NITI Aayog, International Development Research Centre (IDRC), Ottawa and the Global Development Network (GDN), New Delhi**
- In which state is the EKAMRA project, recently featured in the news, located? - **Odisha**
- Which country announced a 50% devaluation in its currency Peso? - **Argentina**
- Which Asian country has recently launched its own Forest and Wood Certification Scheme? - **India**

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