

22 June, 2023

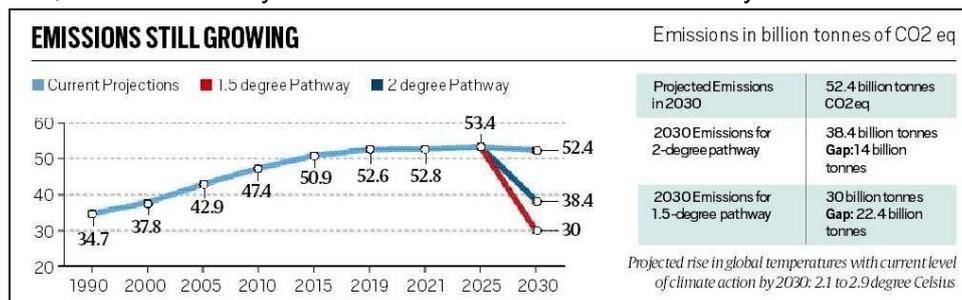
New Collective Quantifiable Goal

Context: The Bonn climate conference in Germany aimed to outline the political agenda for the COP28 in Dubai and review the climate finance architecture.

- The Bonn climate conference in Germany aimed to outline the political agenda for the COP28 in Dubai and review the climate finance architecture.
- The conference highlighted a significant funding gap for climate action, leading to a longstanding deadlock between developed and developing countries on the source and form of climate change funding.

What is New Collective Quantified Goal?

- The NCQG (New Collective Quantified Goal) was established in the 2015 Paris Climate Agreement to set a reference point for climate financing by 2025, considering the needs and priorities of developing nations.
- The NCQG is considered the most crucial climate goal, increasing the commitment ceiling from developed countries and addressing the escalating funding requirements for Loss and Damage.
- The \$100 billion per year commitment to developing nations by developed countries, set in 2009, has not been fully met, and there are concerns of misleading reporting and inflated figures.
- Developed countries bear greater responsibility due to their high carbon emissions from economic growth, but climate finance funds are often inaccessible, delayed, and burden developing countries with loans and debt.
- Developed countries argue that the NCQG should be a collective goal for all nations, potentially placing the burden of net-zero pathways on developing countries that lack the resources.
- Mobilizing private-sector investments and loans is seen as a critical aspect of climate finance by some countries.
- The Global Stocktake at COP28 will play a significant role in shaping the future of climate action.
- The deadline to agree on the NCQG is approaching in 2024, and estimates suggest that global investments of \$4 trillion to \$6 trillion annually are needed for a low-carbon economy.



Climate Financing

- Climate finance refers to the provision of financial support at local, national, or transnational levels to address climate change through mitigation and adaptation actions.
- The UNFCCC, Kyoto Protocol, and Paris Agreement emphasize the need for financial assistance from Developed Countries to Developing Countries based on the principle of Common but Differentiated Responsibility and Respective Capabilities (CBDR).
- COP26 witnessed new financial commitments aimed at assisting developing countries in their efforts to adapt to the impacts of climate change.
- The international carbon trading mechanisms established at COP26 will contribute to funding adaptation initiatives.

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- The objective remains consistent, with financial resources flowing from wealthier nations to less endowed and more vulnerable nations to achieve the global climate goals.

100-billion finance and its significance

- The USD 100 billion target was set by developed countries at UNFCCC COP15 in Copenhagen in 2009.
- It aimed to ensure meaningful mitigation actions and transparency in implementation by committing to mobilize USD 100 billion per year by 2020 for the needs of developing countries.
- The target was officially recognized at UNFCCC COP16 in Cancun.
- At COP21 in Paris, the USD 100 billion goal was extended until 2025 to provide continued financial support.
- After COP26, it was agreed upon that developed nations would double their collective provision of adaptation finance by 2025 compared to 2019 levels.
- This commitment seeks to achieve a balance between funding for adaptation and mitigation efforts.

Star Rating for Coal and Lignite Mines

Context: The Ministry of Coal has initiated the Star Rating Registration process for Coal and Lignite Mines for the financial year 2022-23.

- The Star Rating policy evaluates mines based on seven key parameters: Mining Operations, Environment-related parameters, Adoption of Technologies, Best Mining Practices, Economic performance, Rehabilitation & Resettlement, Worker-related Compliance, and Safety & security.
- The registration process began on 30th May 2023, and the Star Rating portal opened on 01.06.2023.
- Participating mines are encouraged to undertake a comprehensive self-evaluation process by July 31, 2023.
- The top 10% of the highest-scoring mines will undergo further validation through an inspection conducted by a committee, while the remaining 90% will undergo an online review process.
- All participants can contribute to the evaluation by reviewing other mines.
- The comprehensive review will be finalized by October 31, 2023.
- A Coal Controller review will be conducted, and the final results will be published by January 31, 2024.
- The evaluation process will be carried out by the Coal Controller's Organization, ensuring transparency and impartiality.
- The aim of the Star Rating program is to enhance the performance and sustainability of coal and lignite mining, promote responsible practices, and drive competitiveness in the sector.
- The ratings awarded range from Five Star to NO Star, providing a comprehensive assessment of each mine's achievements.

Coal and its Types

Peat:

- Soft, crumbly, dark brown substance formed from generations of dead and partially decaying organic matter.
- First step in the formation of coal, slowly transforming into lignite under pressure and temperature.
- Lowest carbon content (<60%) and energy density of 15 MJ/kg.
- Must be buried deep (4-10 km) by sediment to turn into coal.

Lignite:

- Brown coal with a carbon content ranging from 65-70%.
- Lowest quality of coal, containing higher amounts of compounds other than carbon, such as sulphur and mercury.

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- Youngest fossil fuel, approximately 60 million years old.
- Relatively low energy density of 18 MJ/kg.
- Higher moisture content and lower carbon content result in increased carbon dioxide emissions.

Sub-Bituminous:

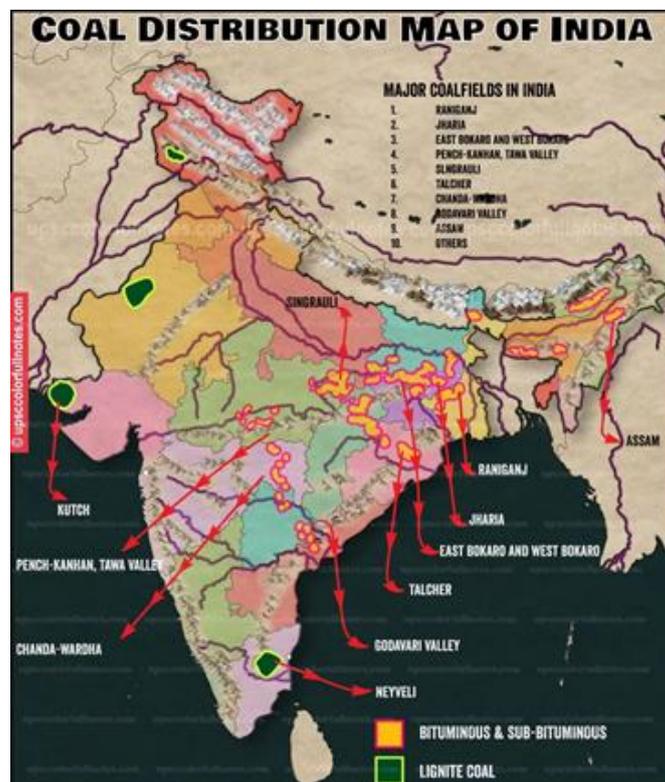
- Grey-black or dark brown coal representing an intermediate stage between lignite and bituminous coal.
- Carbon content varies from 70-76%.
- Approximately 251 million years old.
- Longer burial time compared to lignite leads to higher energy density ranging from 18-23 MJ/kg.
- Widely used coal type, accounting for 30% of coal resources.

Bituminous:

- Second highest quality of coal with a carbon content ranging from 76-86%.
- Most abundant type and approximately 300 million years old.
- Relatively high energy density of 27 MJ/kg.
- Ideal for steel and cement production, electricity generation, and coke production.
- High carbon and low moisture content make it suitable for various industrial applications.

Anthracite:

- Dark black, highest quality coal with a carbon content of nearly 95%.
- Very hard with low moisture content.
- Formed from biomass buried 350 million years ago.
- Exceptionally high energy density of 33 MJ/kg.
- Burns at high temperatures and releases significant energy.
- Clean burning properties with less smoke production.
- Used for space heating and home heating stoves due to its clean and efficient burn.



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Global Gender Index

Context: India has moved up eight places to rank 127 out of 146 countries in gender parity, as per the World Economic Forum's Gender Gap Report 2023.

Major Findings of the Report

- India has shown a 1.9 percentage point improvement in sex ratio at birth, leading to an increase in gender parity after a period of slow progress.
- Vietnam, Azerbaijan, India, and China have lower overall rankings on the Health and Survival sub-index due to skewed sex ratios at birth.
- India's gender parity at birth stands at 92.7%, an improvement from previous editions but still lower than top-scoring countries with 94.4% parity.
- Vietnam, China, and Azerbaijan have gender parity at birth below 90%.
- The Southern Asian region has achieved 63.4% gender parity, which is the second-lowest among the eight regions.
- The South Asian region's score has increased by 1.1 percentage points since the last edition, driven by improvements in populous countries like India, Pakistan, and Bangladesh.

Global Gender Gap Index

- The Global Gender Gap Index, initiated by the World Economic Forum (WEF) in 2006, is a long-standing index that tracks progress in closing gender gaps over time.
 - It has been consistently used to measure gender parity worldwide.
- The index assesses gender equality across four key dimensions:
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival
 - Political Empowerment
- Each of these dimensions, as well as the overall index, is assigned a score ranging from 0 to 1.
 - A score of 1 indicates full gender parity.
 - A score of 0 represents complete gender disparity.
- The purpose of the index is to facilitate cross-country comparisons and identify effective policies to address gender gaps.
- By benchmarking the current state and evolution of gender parity, the index aims to support the implementation of strategies that foster gender equality and inclusivity.

World Economic Forum

- **World Economic Forum (WEF):**
 - Swiss non-profit foundation established in 1971.
 - Headquartered in Geneva, Switzerland.
 - Recognized as the international institution for public-private cooperation by Swiss authorities.
- **Mission of the WEF:**
 - Improve the state of the world.

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- Engage business, political, academic, and other leaders to shape global, regional, and industry agendas.
- Founder and Executive Chairman: Klaus Schwab.
- **Major reports published by the WEF:**
 - Energy Transition Index.
 - Global Competitiveness Report.
 - Global IT Report (co-published with INSEAD and Cornell University).
 - Global Gender Gap Report.
 - Global Risk Report.
 - Global Travel and Tourism Report.
- **Purpose of WEF reports:**
 - Provide insights and analysis on global issues.
 - Offer recommendations and promote dialogue among stakeholders.
 - Address critical challenges in various areas such as energy, competitiveness, technology, gender equality, risk assessment, and travel and tourism.

NEWS IN BETWEEN THE LINES

Supercapacitor



Context: Scientists at the Gujarat Energy Research and Management Institute (GERMI) have developed a groundbreaking paper-based supercapacitor using seaweed.

Keyhighlights:

- This supercapacitor has high tensile strength, a fast charging/discharging cycle, high power density and a longer lifecycle. It can fully charge a device within 10 seconds.
- The researchers extracted cellulose nanofibers from seaweed and transformed them into graphene oxide and zinc oxide to create the anodic paper supercapacitor.

What is supercapacitor?

- A supercapacitor is a type of energy storage device that can quickly store and release electrical energy.
- It is like a fast-charging battery that can deliver a burst of power when needed.
- It is commonly used in applications that require rapid energy transfers, such as powering electronic devices or providing quick bursts of energy in hybrid vehicles.
- It is made from cellulose nanofibers extracted from seaweed, specifically green seaweed (chlorophyta).

Classification of Seaweed:

- Chlorophyta (green), rhodophyta (red), and phaeophyta (brown)
- Green seaweed has high cellulose content.

Applications of Supercapacitor:

The paper-based supercapacitor has a wide range of applications, including electronics, memory backup systems, airbags, heavy machinery and electric vehicles.

Supercapacitors vs Batteries:

- Supercapacitors are energy storage devices that store energy electrostatically, charge and discharge rapidly, have high power density, and a long lifespan.
- Batteries, on the other hand, store energy through chemical reactions, charge and discharge more slowly, have higher energy density, and a limited lifespan.

Scientists: Priyank Bhutiya and Syed Zaheer Hasan

Research Findings: Published in BioNanoScience journal

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Tiger Deaths in Uttarakhand



Context: Recently, in Uttarakhand, a total of 16 tigers have died in the past six months, prompting concerns from the Environment Ministry.

The National Tiger Conservation Authority:

- The National Tiger Conservation Authority (NTCA) is a statutory body established by the Government of India under the Wildlife (Protection) Act, 1972.
- It was formed in 2005 with the primary objective of conserving and protecting tigers and their habitats in the country.
- The NTCA works in close collaboration with state governments, local communities and various stakeholders to implement tiger conservation initiatives.

Tiger Population in Uttarakhand: Over 420 tigers as per recent tiger census

Causes of Tiger Deaths:

- Territorial fights among the big cats
- Territorial fights among tigers:
- Poaching
- Human-wildlife conflicts
- Habitat loss and fragmentation
- Accidents and natural causes

Conservation of Tigers in India:

- Project Tiger launched in April 1973 by the Government of India.
- India achieved a doubling of tiger population in 2018, four years ahead of the target year 2022.
- 2018 tiger census showed a rise in the tiger population.
- India among the 13 countries with tiger reserves aiming to double tiger populations by 2022.
- India has approximately 2,967 tigers as per the 2018 tiger census.
- Currently, 51 Tiger Reserves in the country.

Project Tiger:

- Launched from Jim Corbett National Park, Uttarakhand.
- Ongoing scheme of the Ministry of Environment, Forest and Climate Change (MoEFCC).
- Applicable in nine reserves across different states.
- Project Tiger converted into National Tiger Conservation Authority (NTCA) through an amendment in 2006.
- NTCA addresses ecological and administrative concerns for tiger conservation.

Veerangana Rani Durgavati Gaurav Yatra



Context: Union Home Minister Amit Shah to launch the six-day 'Veerangana Rani Durgavati Gaurav Yatra' in Madhya Pradesh.

Objective of the Yatra: To create awareness and promote the significance of Queen Durgavati's legacy among the tribal population.

Tribal Population in Madhya Pradesh:

Tribals constitute 21% of the state population and 47 out of the 230 Assembly seats are reserved for them.

About Veerangana Rani Durgavati:

- Rani Durgavati was born on October 5, 1524, in the family of King Keerat Rai of the famous Chandel dynasty in Kalanjar, Uttar Pradesh.
- She shifted her capital from Singorgarh fort to Chauragarh in the eastern region of Madhya Pradesh.
- She engaged in various public welfare works, including the construction of lakes, wells, water reservoirs and support for scholars.
- Rani Durgavati successfully defended her kingdom against invasions, including repelling attacks by Afghan warlords and Baz Bahadur, the successor of Sujat Khan.
- In 1562, the Mughal forces led by Asaf Khan invaded her kingdom, and despite being outnumbered and facing modern weapons, Rani Durgavati fought bravely but ultimately took her own life to avoid surrender.
- Her martyrdom on June 24, 1564, is commemorated as "Balidan Diwas," and her mausoleum is located in Barela, Jabalpur.

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Places in News

The Hindu Kush Himalayas (HKH)

Context: Recently, a new report from the International Centre for Integrated Mountain Development (ICIMOD) reveals that the Hindu Kush Himalayas (HKH) have experienced a 65% faster loss of glacier mass.

Geographical Location:

- The Hindu Kush Himalayas stretch across Central Asia, covering parts of Afghanistan, Pakistan, India, Nepal, Bhutan and China.
- It encompasses a vast mountain range that acts as a natural boundary between South Asia and Central Asia.

What is the Hindu Kush Himalaya?

- The Hindu Kush Himalayas (HKH) is a transboundary mountain range located in South Asia, spanning across several countries.
- It is a vast mountain system that stretches approximately 3,500 kilometers (2,175 miles) from Afghanistan in the west to Myanmar in the east.
- It is a diverse and ecologically rich area known for its towering peaks, glaciers, and unique biodiversity.
- The Hindu Kush Himalayas (HKH) region is also known as "Third Pole", which is often described as the third-largest repository of ice and snow on Earth after the North and South Poles.

Ecological Significance:

- It serves as a crucial water source for 12 rivers that flow through 16 Asian countries, making it essential for the sustenance of millions of people.
- Its glaciers act as natural water reservoirs, providing a consistent supply of freshwater to rivers, lakes and underground aquifers.
- The region's diverse ecosystems support a wide range of plant and animal species, including endangered and endemic ones. The HKH region is a source of clean energy through hydropower generation.

