

16 November 2024

India's Renewable Energy Growth

Context: India's renewable energy sector has witnessed remarkable growth from October 2023 to October 2024, demonstrating the country's commitment to transitioning towards clean energy. According to data released by the Ministry of New and Renewable Energy (MNRE), India has made significant progress in meeting its renewable energy (RE) targets, in alignment with the Panchamrit goals set by Prime Minister Shri Narendra Modi.

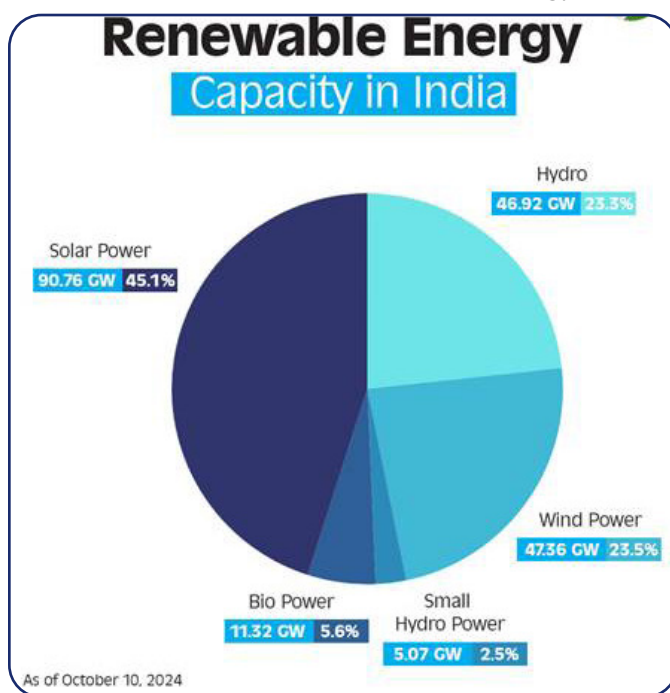
Key Highlights of Renewable Energy Growth (2023-2024)

- **Total Renewable Energy Capacity:**
 - » India's total installed renewable energy capacity increased by 24.2 GW (13.5%), from 178.98 GW in October 2023 to 203.18 GW in October 2024.
 - » Including nuclear energy, the total non-fossil fuel capacity increased to 211.36 GW in 2024, compared to 186.46 GW in 2023.
- **Solar Power Surge:**
 - » The solar power sector saw a remarkable increase of 20.1 GW (27.9%), from 72.02 GW in October 2023 to 92.12 GW in October 2024.
 - » Total solar capacity, including projects under implementation and those tendered, now stands at 250.57 GW, up from 166.49 GW last year.
- **Wind Power Growth:**
 - » Wind power experienced steady growth, with its installed capacity increasing by 7.8%, from 44.29 GW in October 2023 to 47.72 GW in October 2024.
 - » The total capacity in the pipeline for wind projects has reached 72.35 GW, reflecting India's commitment to scaling up wind energy production.

Hydro and Nuclear Contributions to Renewable Energy Mix

- **Large Hydro Projects:**
 - » By October 2024, large hydro projects contributed 46.93 GW to India's renewable energy portfolio, further diversifying the country's green energy mix.
- **Nuclear Power:**
 - » Nuclear power contributed 8.18 GW, supporting India's growing need for clean, reliable energy sources.

- » These contributions highlight that India is adopting a broad and diversified approach to renewable energy, combining solar, wind, hydro, and nuclear to ensure a balanced and resilient energy future.



Key Drivers Behind India's Renewable Energy Growth

- **Panchamrit Targets:**
 - » India aims to achieve 500 GW of non-fossil energy capacity by 2030, significantly reducing reliance on fossil fuels.
 - » By 2030, 50% of India's total energy requirements will be met through renewable energy sources, including solar, wind, and other clean energy solutions.
 - » India plans to reduce its projected carbon emissions by one billion tonnes between 2021 and 2030, aiming to minimize its carbon footprint and contribute to global climate goals.
 - » The country aims to reduce the carbon intensity of its economy by 45% by 2030, based on 2005 levels. This goal focuses on improving energy efficiency and promoting sustainable growth.
 - » The ultimate goal is for India to achieve net zero emissions by 2070, ensuring long-term

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16 November 2024

sustainability and positioning India as a leader in global climate action.

- **National Green Hydrogen Mission:**

- » India has launched the National Green Hydrogen Mission to promote hydrogen as a clean fuel, which will further boost the country's renewable energy capacity and reduce dependence on fossil fuels.

- **Production Linked Incentive (PLI) Scheme:**

- » The PLI scheme has played a crucial role in boosting the domestic manufacturing of solar photovoltaic (PV) modules, enhancing India's ability to meet its solar energy goals while reducing reliance on imports.

Operation Dronagiri: A Milestone in India's National Geospatial Policy

Context: India took a significant step towards revolutionizing its governance and economic landscape with the launch of Operation Dronagiri at the Indian Institute of Technology (IIT) Delhi. This pilot initiative is a critical component of the National Geospatial Policy 2022 (NGP 2022) and showcases the transformative potential of geospatial technologies to improve public services, drive innovation, and foster economic growth. Geospatial data is time-based data that is related to a specific location on the Earth's surface.

Key Highlights of Operation Dronagiri

- **Launch**

- » Date: November 13, 2024
- » Location: IIT Delhi's Foundation for Innovation and Technology Transfer (FITT)
- » Goal: To demonstrate the transformative potential of geospatial technologies across agriculture, livelihoods, and logistics & transport, and to streamline business operations.

- **Integration of Geospatial Data**

- » Operation Dronagiri aims to integrate geospatial data into public services, enhancing the quality of life for citizens and improving the ease of doing business.
- » Focus Areas: Agriculture, Livelihoods, and Logistics & Transport.

- **Pilot Phase Implementation**

- » The first phase will be rolled out in five states: Uttar Pradesh, Haryana, Assam, Andhra Pradesh, and Maharashtra.

- » These states were chosen for their diverse geographical and socio-economic conditions, making them ideal testing grounds for the pilot.

- **Partnerships and Collaborations**

- » The project will involve collaborations with government departments, industries, corporations, and startups to test real-world applications of geospatial data.
- » These partnerships aim to demonstrate the practical benefits of geospatial data integration and its impact on public services.

Introduction of the Integrated Geospatial Data Sharing Interface (GDI):

- A cornerstone of Operation Dronagiri is the launch of the Integrated Geospatial Data Sharing Interface (GDI), a platform designed to facilitate seamless sharing, access, and analysis of geospatial data.

- **Purpose of GDI:**

- » The GDI will unlock actionable insights from geospatial data, helping to drive better decision-making for public governance, business strategies, and research.
- » It will promote greater collaboration among stakeholders across various sectors.

- **Key Features of GDI**

- » **Data Exchange:** GDI ensures secure and efficient exchange of geospatial data using advanced data exchange protocols.
- » **Privacy and Security:** The platform integrates privacy-preserving features, safeguarding sensitive data while enabling collaboration.
- » **Impact:** The GDI will enhance disaster management, improve urban infrastructure, and monitor environmental changes with better coordination across various agencies.

What is National Geospatial Policy 2022?

- The National Geospatial Policy 2022 (NGP 2022) aims to make India a global leader in geospatial technology by developing infrastructure, fostering innovation, and creating an ecosystem for data sharing.
- **Vision and Goals:**

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16 November 2024

- » To position India as a world leader in the geospatial sector by 2030, fostering innovation and creating a thriving geospatial ecosystem.
- » Focus on digitalization, improving service delivery, and promoting the liberalization of the geospatial sector.
- **Institutional Framework:**
 - » The Geospatial Data Promotion and Development Committee (GDPDC) will play a central role in formulating strategies for the geospatial sector's growth and ensuring the implementation of NGP 2022.

Milestones Toward Realization:

- By 2025, put in place a policy framework that supports the liberalization of the geospatial sector.
- By 2030, achieve high-resolution topographical surveys and mapping for urban and rural areas.
- By 2035, develop a National Digital Twin of cities, enabling dynamic decision-making.

A Quarter of Diabetics Globally Are Indians

Context: A recent study published in The Lancet on World Diabetes Day, November 14, 2024, has raised serious concerns about the global diabetes epidemic, highlighting that a quarter of the world's diabetic population resides in India.

Key Findings from the Lancet Study

- **Global Diabetes Prevalence:**
 - » 828 million adults globally live with diabetes.
 - » India accounts for 212 million diabetic individuals—one-fourth of the global diabetes population.
- **Other countries with significant diabetes cases include:**
 - » China: 148 million
 - » US: 42 million
 - » Pakistan: 36 million
 - » Indonesia: 25 million
 - » Brazil: 22 million

The study used two common diagnostic criteria:

- **Fasting Plasma Glucose (FPG):** 7.0 mmol/L (126

mg/dL)

- **HbA1c:** 6.5% or higher (average blood sugar over three months)
- However, experts suggest that using HbA1c and fasting glucose levels as benchmarks may overestimate diabetes prevalence in India.
- Without HbA1c inclusion, the actual diabetes prevalence in India for 2022 was:
 - » 14.4% in women (69 million)
 - » 12.2% in men (62 million)
 - » Total prevalence: 131 million people
- This is far lower than the 212 million figure presented by the Lancet study when HbA1c is used.

The Treatment Gap:

- 59% of adults globally (around 445 million people) did not receive any medication for their diabetes in 2022, a significant rise from 1990 (129 million).
- In India, around 64 million men and 69 million women had untreated diabetes in 2022.
- This lack of treatment exacerbates the risk of complications such as:
 - » Amputations
 - » Heart disease
 - » Kidney damage
 - » Vision loss
 - » Premature death

What is Diabetes?

- Diabetes is a chronic medical condition that occurs when the body cannot properly regulate blood sugar (glucose) levels. Blood glucose is a vital source of energy for the body's cells, but its levels need to be carefully controlled. When this balance is disrupted, it can lead to either too high or too low levels of blood sugar, which can cause various health complications over time.
- There are two main types of diabetes: Type 1 diabetes and Type 2 diabetes, as well as a condition called gestational diabetes.
 - » Type 1 diabetes is an autoimmune condition where the body's immune system mistakenly attacks and destroys the insulin-producing cells in the pancreas, known as beta cells. Insulin is a hormone that helps glucose enter cells for energy.
 - » Type 2 diabetes occurs when the body becomes insulin resistant, meaning the cells do not respond effectively to insulin. Over time, the pancreas

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16 November 2024

cannot produce enough insulin to maintain normal blood glucose levels. A combination of genetic factors, poor diet, physical inactivity, and obesity contributes to the development of Type 2 diabetes

Shrinking Population of African Elephants

Context: Recent studies show that both savanna and forest elephants of Africa are disappearing at an unprecedented rate, driven primarily by poaching and habitat loss. The decline has become so severe that these majestic animals are at risk of extinction.

The Stark Decline in Elephant Populations:

- Savanna elephants have seen their populations drop by about 70% on average across the surveyed sites in sub-Saharan Africa.
- Forest elephants, the smaller, elusive cousins of the savanna elephant, have faced an even steeper decline, with populations dropping by 90% at many surveyed sites.
- This massive decline is based on data from 475 survey sites across 37 African countries, indicating a 77% average population decrease across these regions.

Key Factors Contributing to the Decline of African Elephants

- **Poaching**
 - » Poaching remains the most prominent threat to elephant populations. Elephants are primarily targeted for their ivory tusks, which are highly sought after on the illegal black market, especially in Asia (China, Vietnam, and other countries).
 - » On average, 20,000 to 30,000 elephants are killed every year for their tusks, causing a sharp acceleration in the species' decline.
- **Habitat Loss**
 - » Habitat destruction is another significant factor driving the decline. Agricultural expansion, deforestation, and human settlements are encroaching on elephants' natural territories, leading to habitat fragmentation.
- **Limited Protection**
 - » In many regions, conservation efforts are

insufficient, and elephants lack proper protection. Weak law enforcement and lack of resources hinder effective wildlife protection, allowing poaching and habitat destruction to continue unchecked.

- **Regional Variations**

- » While the overall trend is concerning, there are areas where elephant populations have shown resilience due to effective conservation measures.
- » Southern Africa stands out as a success story, with countries like Botswana, Zimbabwe, and Namibia seeing increases in elephant populations at 42% of surveyed sites.
- » However, in other parts of Africa, such as West Africa and the Sahel region (including Mali, Chad, and Nigeria), elephant populations have been locally extirpated (extinct) due to the pressures of poaching, inadequate protection, and political instability.



- **Conservation Status**

- » Forest elephants are now classified as Critically Endangered, while savanna elephants are listed as Endangered on the IUCN Red List.

The Importance of Elephants in Ecosystems

- Elephants are keystone species that play a crucial role in shaping their ecosystems:
 - » **Seed Dispersal:** Elephants eat fruits and plants, and through their movements, they help spread seeds, which is essential for the regeneration of forests and savannas.
 - » **Waterholes:** By digging and maintaining waterholes, elephants create essential water sources for many other wildlife species, especially during dry seasons.
 - » **Maintaining Ecological Balance:** Elephants help control the growth of vegetation, preventing the overgrowth of certain plant species and ensuring the survival of other plants and animals in their habitat.
- Without elephants, these vital ecological processes would be disrupted, leading to cascading effects that could harm the entire ecosystem.

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Current affairs summary for prelims

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Power Packed News

Prime Minister Narendra Modi to Receive Dominica's Highest National Honor

- The Commonwealth of Dominica has announced its decision to bestow its highest national honor, the Dominica Award of Honour, on Indian Prime Minister Narendra Modi recognizing his pivotal role in strengthening ties between India and Dominica, particularly during the COVID-19 pandemic.
- The award will be presented by Sylvie Berton, President of the Commonwealth of Dominica, during the India-CARICOM Summit, scheduled from November 19 to 21, 2024, in Georgetown, Guyana.
- India's contribution to Dominica's pandemic response, including the provision of 70,000 doses of the AstraZeneca COVID-19 vaccine in February 2021, played a significant role in aiding vaccination efforts on the island and supporting neighboring Caribbean nations.
- The Dominica Award of Honour also recognizes India's continued assistance in areas such as healthcare, education, and information technology under Modi's leadership.
- **About Dominica:** Dominica, a member of the Commonwealth since 1978, is an island nation of volcanic origin in the Lesser Antilles, known for its distinctive Carib Indian population and rich alluvial soils. Key geographical features include Mount Diablotins and Mount Trois Pitons.

Janjatiya Gaurav Divas

- November 15 is observed as Janjatiya Gaurav Divas in memory of India's tribal freedom fighters, with special reverence for Dharti Aaba Bhagwan Birsa Munda. In 2024, Prime Minister Narendra Modi commemorated the occasion in Jamui, Bihar, marking the start of Birsa Munda's 150th Birth Anniversary Year celebrations.
- The Prime Minister unveiled a commemorative coin and postal stamp in honor of Bhagwan Birsa Munda, who is revered as a symbol of courage and resistance among tribal communities across India. Munda bravely fought against British colonial exploitation and led movements to defend tribal rights and dignity.
- As part of the celebrations, Modi inaugurated multiple development projects worth over ₹6,640 crore, aimed at improving infrastructure and uplifting tribal communities in rural and remote regions.
- These projects align with the government's focus on honoring tribal heritage while addressing socio-economic challenges faced by marginalized populations.
- Janjatiya Gaurav Divas pays tribute to the valiant contributions of tribal leaders and reinforces India's commitment to preserving its diverse cultural heritage while fostering inclusive development.

Jhiri Mela

- Jhiri Mela has recently begun in Jammu city. Celebrated in Jhiri village on the outskirts of Jammu, Jhiri mela commemorates the supreme sacrifice of Baba Jitto, a 16th-century Dogra hero and honest farmer. Baba Jitto is remembered for his stand against injustice after being deceived by a local landlord, sacrificing his life for truth and justice.
- The festival attracts around 20 lakh visitors annually, offering a platform to promote regional unity, honesty, and courage. Pilgrims from across the region visit Jhiri to pay homage to Baba Jitto, making it a vibrant cultural and spiritual event.
- The Mela also showcases traditional arts and crafts, providing local artisans an opportunity to exhibit their skills to a broader audience. Government departments actively participate in the fair, utilizing the platform to promote rural development schemes and welfare programs.
- The event symbolizes the rich cultural heritage of Jammu and Kashmir and fosters community engagement through its emphasis on values such as integrity and resilience.

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