ENERGY and CLIMATE WATCH

February 2024

We welcome you to the February 2024 edition of our monthly newsletter on energy and climate change. It consists of significant developments worldwide in India's energy and climate change space

Switching from energy systems based on fossil fuels to renewables is vital to lessen reliance on the unpredictable fossil fuel market and combat climate change. Additionally, renewable energy can increase employment across all regions, mainly rural areas. It is essential to emphasise India's enormous renewable energy potential to attract international investments and start the Green Energy Revolution. However, comprehensive policy and regulatory framework assistance is required for the renewable sector. The push from industry is also necessary to adopt new technologies and rapidly transition to a non-fossil-based energy ecosystem.

Similarly, we are also focusing on the issue of climate change in this edition. India's high population density, large spatial and temporal variability in rainfall, and high poverty rates make it particularly vulnerable to the impacts of climate change. There has been an increase in the national mean surface air temperature and hot days, significant regional variations in rainfall patterns, measurable melting of Himalayan glaciers, and rising sea levels. India will need better climate adaptability models to predict impacts on states and regions, a prerequisite for an informed adaptation policy.

Additionally, the newsletter captures power statistics for February 2024 to update the reader on the developments in the power sector. CUTS International organised a webinar on "Beyond EODB: Enabling Ease of Running a Business by Bridging Trust Deficit. A brief description of the webinar is discussed in the CUTS AT WORK section.

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1. Government Approves PM-Surya Ghar

The Union Cabinet has approved PM-Surya Ghar: Muft Bijli Yojana with a total outlay of ₹75,021 crore for installing rooftop solar and providing free electricity to up to 300 units every month for One Crore households.

The proposed scheme will result in the addition of 30 GW of solar capacity through rooftop solar in the residential sector.

What is it about?

The major highlights of the scheme include:

Central Financial Assistance (CFA) for Residential Rooftop Solar

i. The scheme provides a CFA of 60 percent of system cost for 2 kW systems and 40 percent of additional system cost for systems between 2 to 3 kW capacity. The CFA will be capped at 3 kW. At current benchmark prices, this will mean ₹30,000 subsidy for 1 kW system, ₹60,000 for 2 kW systems, and ₹78,000 for 3 kW systems or higher.

ii. The households will apply for subsidy through the National Portal and will be able to select a suitable vendor for installing rooftop solar. The National Portal will assist the households in their decision-making process by providing relevant information such as appropriate system sizes, benefits calculators, vendor ratings, etc.

iii. Households will be able to access collateral-free low-interest loan products of around 7 percent at present for the installation of residential RTS systems up to 3 kW. The agreement ensures exploration and exclusivity rights to evaluate, prospect, and explore in the stated blocks.

Through this scheme, the households will be able to save electricity bills as well as earn additional income through the sale of surplus power to DISCOMs. A 3 kW system will be able to generate more than 300 units a month on average for a household.

It is estimated that the scheme will create around 17 lakh direct jobs in manufacturing, logistics, supply chain, sales, installation, O&M, and other services.

Read in detail

2. Interim Budget 2024-25 Aims to Expand Clean Energy and Sustainable Mobility

The interim budget 2024-25 has introduced a new scheme for Bio-Manufacturing and proposed measures to enhance the Green Energy and Electric Vehicle (EV) adoption in India.

e-Buses have been prioritised in the EV ecosystem for better public transportation. Blending, coal gasification, and liquefication have been placed at the forefront of clean technology.

What is it about?

The interim budget 2024-25 has introduced a new scheme for bio-manufacturing and bio-foundry, offering environment-friendly alternatives such as biodegradable polymers, bio-plastics, bio-pharmaceuticals, and bio-agri-inputs.

The budget has also emphasised expanding and strengthening the e-vehicle ecosystem by supporting the manufacturing and charging infrastructure. The focus is particularly on the e-buses which will be promoted through the payment security mechanism. To meet the commitment of 'net zero' by 2070, the budget has proposed:

- Viability gap funding for harnessing offshore wind energy potential;
- Setting up coal gasification and liquefaction capacity of 100 metric tonnes (MT) by 2030;
- Phased mandatory blending of Compressed Bio Gas (CBG) in Compressed Natural Gas (CNG) for transport and Piped Natural Gas (PNG) for domestic purposes; and
- Financial assistance for procurement of biomass aggregation machinery.

Read in detail.

3. MNRE Notifies Guidelines for Pilot Projects on the Use of Green Hydrogen

The Ministry of New and Renewable Energy (MNRE) has issued guidelines for the implementation of pilot projects for the use of Green Hydrogen in the Transport sector.

The Scheme will be implemented with a total budgetary outlay of ₹496 crores till the financial year 2025-26.

What is it about?

With the falling costs of renewable energy and electrolysers, it is expected that vehicles based on green hydrogen can become cost-competitive over the next few years. Future economies of scale and rapid technological advancements in the field of vehicles powered by hydrogen are likely to further improve the viability of transport based on green hydrogen.

Considering this, under the National Green Hydrogen Mission, along with other initiatives, the MNRE will implement pilot projects for replacing fossil fuels in the transport sector with Green Hydrogen and its derivatives. These pilot projects will be implemented through the Ministry of Road Transport and Highways and the Scheme Implementing Agencies (SIAs) nominated under this Scheme.

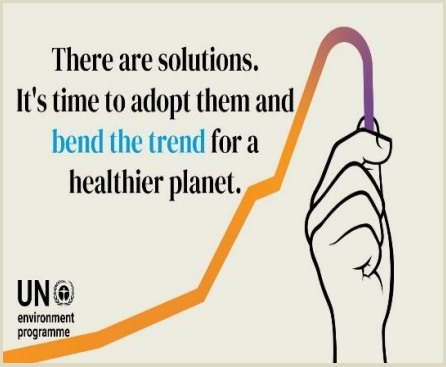
The scheme will support the development of technologies for the use of Green Hydrogen as a fuel in Buses, Trucks, and four-wheelers, based on fuel cell-based propulsion technology/internal combustion engine-based propulsion technology. The other thrust area for the scheme is to support the development of infrastructure such as hydrogen refuelling stations.

The scheme will also seek to support any other innovative use of hydrogen for reducing carbon emissions in the transport sector, such as blending methanol/ethanol based on green hydrogen and other synthetic fuels derived from green hydrogen in automobile fuels.

The use of Green Hydrogen in the transport sector, via the proposed pilot projects, will lead to the development of necessary infrastructure including refuelling facilities and distribution infrastructure, resulting in the establishment of a Green Hydrogen ecosystem in the transport sector. With the expected reduction in the Green Hydrogen production cost over the years, the utilisation in the transport sector is expected to increase.

Read in detail

4. UNEP Releases Global Resources Outlook 2024



The United Nations Environment Programme (UNEP) has released the report on the Global Resources Outlook 2024 with the theme 'Bend the Trend: Pathways to a Liveable Planet as Resource Use Spikes.'

Examining the major trends of resource utilisation, the report argues that better resource management is essential for the 2030 Agenda for Sustainable Development to succeed through the given recommendations.

What is it about?

The report finds the global resource agenda not being aligned with the environmental agenda. Material use has increased more than three times over the last 50 years and it continues to grow on average over 2.3 percent per year. Trends in domestic extraction have shifted, with upper middle-income countries measuring the highest rate of domestic material extraction per capita. High-income countries continue to use six times more materials per capita than low-income countries. Increasing resource use is the main driver of the triple planetary crises. The report further highlights the unsuitable built environment and mobility systems for sustainable material utilisation.

However, the resource use curve can be bent while growing the economy, reducing inequality, improving lives and dramatically reducing environmental impacts. The following policy actions are put forth:

- Sustainability of the new building stock, retrofitting the existing building stock, more intensive use of buildings and decarbonisation of material production.
- Moving towards walking, cycling and public transportation in cities, reducing carbon-intensive frequent travelling modalities and decreasing emissions intensity of transport modalities.
- Reducing food loss, food waste and the demand for the most resource-intensive food commodities whilst reducing, protecting and restoring productive land for maximum well-being and minimal impact.
- Decarbonising electricity supply through the scaling up of low-resource renewable energies and increased energy efficiency, and decarbonising fuels.
- Institutionalising resource governance and defining resource use paths and directing finance towards sustainable resource use.
- Making trade an engine of sustainable resource use and creating circular, resource-efficient and low-impact solutions and business models.

Read in detail.

5. CPI Releases Financing Adaptation in India Report

Climate Policy Initiative (CPI) released the report entitled 'Financing Adaptation in India', emphaising the adaptation finance needs in India both as a discourse and a policy question.

The report offers an analysis of India's approach to climate adaptation, investment needs and funding gaps and explores the possibility of bridging the funding gap through public and private finance.

What is it about?

The report delves into the adaptation finance landscape in India and finds out the existing gap areas which need to be addressed through policy changes. India has a common framework for climate vulnerability assessments but has not yet established one for climate risk. India also lacks a systematic methodology for evaluating the extent to which development programmes address climate risk and vulnerability, making it difficult to distinguish between adaptation and development and to track funding specifically for adaptation measures.

The report talks about the substantial state-level investment needs. The report stresses upon the primary responsibility of states for adaptation-related interventions. However, over the last few years, state finances have been depressed by several factors including the economic slowdown in 2019-20 and the COVID-19 pandemic, constraining their ability to invest in adaptation. States also face borrowing constraints under new fiscal rules and pressure to reduce existing debt burdens, which further constrain their ability to bridge the adaptation funding gap.

CPI recommends the following actions to increase state fiscal capacity and mobilise private finance to bridge the adaptation funding gap:

- India's upcoming Finance Commission could include adaptation-related interventions as a variable when setting the criteria and formula for the devolution of funds to state governments.
- The introduction of time-bound climate-incentivised borrowing ceilings that account for state-specific climate risk and vulnerabilities.
- It is equally necessary to build effective and comprehensive green finance data. This is crucial for understanding investment needs. High-quality data can help to increase transparency, tracking, and better decision-making.
- Governments could deploy financial mechanisms/instruments such as public-private partnerships (PPPs) and blended financing, and offer assurance of minimum investment return, or assured revenues, to spur private capital in climate adaptation.

Read in detail.

6. Global Union Minister Launches Coal Logistics Plan and Policy

Union Minister of Coal, Mines, and Parliamentary Affairs Pralhad Joshi launched an initiative titled "Coal Logistics Plan and Policy" organised by the Indian National Committee World Mining Congress with the patronage of the Ministry of Coal.

Coal Logistics Plan proposes a strategic shift towards a railway-based system in First Mile Connectivity (FMC) projects, aiming for a 14 percent reduction in rail logistic costs and an annual cost saving of ₹21,000 crore.

What is it about?

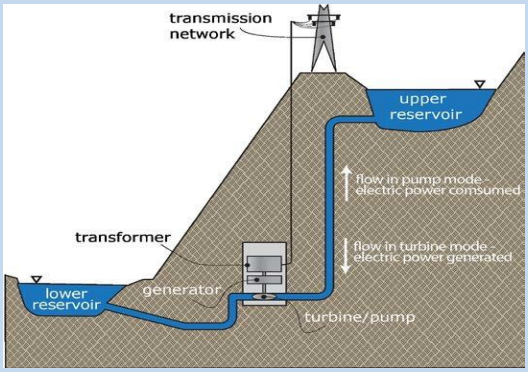
Addressing the event, Pralhad Joshi highlighted the imperative need for efficient logistics to meet the escalating energy demand projected to surge from 980 MT to 1.5 BT by 2030. The Coal Logistics Plan proposes a strategic shift towards a railway-based system in FMC projects, aiming for a 14 percent reduction in rail logistic costs and an annual cost saving of ₹21,000 crore. He emphasised on augmentation of railway network capacity through First-Mile Connectivity. This transformative approach is expected to minimise air pollution, alleviate traffic congestion, and reduce carbon emissions by approximately 100,000 tonnes per annum. Moreover, a 10 percent saving in the average turnaround time of wagons nationwide is expected.

Highlighting the significance of integrated transportation systems, Shri Joshi emphasised the Ministry's initiative to integrate Rail-Sea-Rail (RSR) transportation, which has witnessed a remarkable growth of around 50 percent over the past five years, with plans for further expansion to 120 BT by FY 2030. Additionally, aligned with PM Gati Shakti 37 critical railway projects have been identified to meet the future coal evacuation demand. He also emphasised that the Ministry has launched 15 railway projects to address multimodal connectivity gaps, out of which 5 projects have already been commissioned.

The launch of the Coal Logistics Plan marks a significant milestone in India's journey towards modernising coal transportation, enhancing efficiency, and promoting sustainability. With collaborative efforts from government bodies, industry leaders, and stakeholders, India is poised to unlock the full potential of its coal industry, ensuring a resilient and sustainable energy future.

Read in detail

7. CareEdge Ratings Launches Report on Pumped Storage's Competitiveness



CareEdge Ratings has launched a report on the pumped storage system, which is to substantially improve India's storage capacity, aligning itself with the new renewable purchase obligation (RPO) and energy storage obligations (ESO) to support India's renewable energy goals.

The report has highlighted that pumped storage system is more competitive than battery energy storage systems.

What is it about?

The report dwells upon the new RPO and ESO norms which has pushed for the capacity augmentation of Energy Storage Systems (ESS). Assuming 4 hours of storage per GW, India requires 12 GW storage capacity in FY24, which is likely to increase further to 70 GW by FY30.

The industry would necessitate ₹4 lakh crore incremental debt financing for the installed Renewable Energy (RE) capacity to reach 425 GW, Pumped Storage Projects (PSP) capacity of 19 GW and Battery-Enabled Storage Solutions (BESS capacity) of 42 GW by 2030.

Assuming that the requirement is to supply 20 hours of RE power in a day, a relative comparison between PSP and BESS has been done. It has been assumed that power from Energy Storage System (ESS) will be supplied for 6 hours a day and Variable Renewable Energy (VRE) will be used for the remaining 14 hours. The levelised cost from PSP comes to be ₹4.7 per unit whereas the levelised cost from BESS comes to be ₹6.6 per unit. Thus, at present, especially if one has to provide storage for longer durations, PSP is preferable from a cost standpoint.

Significant technological advancements, cost economies and financing stimulus are needed to uplift BESS.

Read in detail.

CUTS AT WORK

CUTS hosted a webinar entitled "Beyond EODB: Enabling Ease of Running a Business by Bridging Trust Deficit," aimed to address the challenges faced by businesses in India due to regulatory complexities.

Pradeep S. Mehta, Secretary General of CUTS International, highlighted the significance of creating transparent and business-friendly regulatory frameworks to attract both domestic and foreign investments. He also spoke about the procedural burdens and the lack of accountability, particularly affecting small and medium-sized enterprises (SMEs).

Amol Kulkarni, Director of Research at CUTS, provided an overview of the discussion paper titled "Bridging Trust Deficit: Enabling Ease of Running a Business in India," shedding light on the prevalent trust deficit between government entities and businesses.

During the panel discussion, Danish Hashim, Chief of Ease of Doing Business at CII, advocated for a centralised Grievance Redressal System to ensure accountability and streamline processes. He stressed the importance of leveraging technology to combat corruption.

Legal concerns were addressed by Angira Singhvi Lodha, Partner at Khaitan & Khaitan, who proposed an Ombudsman system similar to the banking sector to address issues of unease in litigation.

Bhuvana Anand, Co-founder of Prosperiti, emphasised the need for a shift in attitudes towards reforms, especially concerning MSMEs.

Rishi Agrawal, Co-founder & CEO of Teamlease Regtech, underscored the disproportionate compliance burden borne by MSMEs and advocated for modernising regulations to align with contemporary times.

Anil Bhardwaj, Secretary General of Federation of Indian Micro and Small & Medium Enterprises (FISME), stressed the necessity of targeted reforms for starting and conducting businesses, particularly for micro-enterprises in the informal sector.

Jacob Crasta, representing Laghu Udyog Bharti, highlighted the importance of fair treatment for entrepreneurs and advocated for stringent punishment for guilty officials.

Read more about the webinar here: https://tinyurl.com/f3mw5jh3

Power Statistics for January 2024									
Installed capacity (GW)	Thermal		cluding large hydro)		Thermal power penetration in the generation mix (%)	RE power penetration in the generation mix (%)	Peak demand (GW)	Peak demand met (GW)	Shortage
	Capacity (GW)	As a % of the total installation	Capacity (GW)	As a % of the total installation					
429.96	240.43	55.91	182.04	42.33	81.55	15.56	222.73	222.32	0.2

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