ENERGY and CLIMATE WATCH

September 2023

We welcome you to the September 2023 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 assistanceis 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.

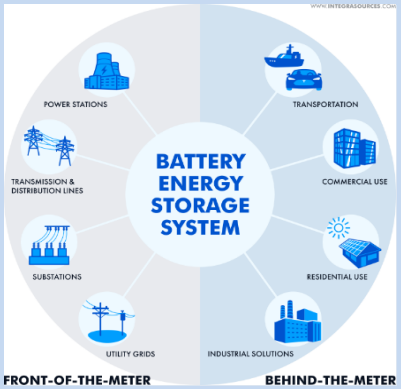
Similarly, we are also focusing on the issue of climate change in this edition. India's high population density, large spatial and temporal variability in rainfall, and high poverty rates makeit particularly vulnerable to the impacts of climate change. There has been an increase in the national mean 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 aninformed adaptation policy.

Additionally, the newsletter captures power statistics for September 2023 to update the reader on the developments in the power sector. CUTS International organised a webinar in September 2023 on 'Reimagining India's Digital Public Infrastructure Globally for Attaining the SDGs'. A brief of the webinar is discussed in the CUTS AT WORK section.

Contents

1. Government Approved ₹37.6bn Viability Gap Funding Scheme for Battery Energy Storage System
2. Global Biofuels Alliance Announced at the G20
3. Rajasthan Approves Draft of Green Hydrogen Policy 2023
4. Ministry of Power Released National Framework for Promoting Energy Storage System
5. Renewables Jobs Nearly Doubled in Past Decade, Soared to 13.7 Million in 2022
6. MNRE Issues Tender for Development of 7 GW of Offshore Wind Energy Projects
7. IREDA Signs MoUs with the Bank of Maharashtra to Finance Renewable Energy Projects

1. Government Approved ₹37.6bn Viability Gap Funding Scheme for Battery Energy Storage System



The Union Cabinet has approved the Scheme for Viability Gap Funding (VGF) to drive the development of Battery Energy Storage Systems (BESS). This scheme aims to create 4,000 MWh of BESS projects by 2030-31 through competitive bidding. It will provide substantial financial support, covering up to 40 percent of the capital cost through a ₹37.6bn Central Government-funded VGF, which will be disbursed in five instalments.

What is it about?

The scheme, Viability Gap Funding, aims to provide clean, reliable, and cost-effective electricity and includes a VGF of ₹94bn with an initial budgetary support of ₹37.6bn. The primary goal of this scheme is to achieve a standardised cost of storage (LCoS) in the range of 5.50–6.60 per kilowatt-hour (kWh), making stored renewable energy a viable option for meeting peak power demands across the country.

To ensure that consumers directly benefit from this scheme, distribution companies (Discoms) will receive a minimum allocation of 85 percent of the BESS project's capacity. This allocation will facilitate the integration of renewable energy into the national electricity grid, minimising waste and optimising the utilisation of transmission networks.

The selection of developers for these BESS projects will be conducted through a competitive bidding process open to both the public and private sectors. This approach is expected to promote healthy competition and the growth of a robust ecosystem for BESS, attracting substantial investments and creating opportunities for associated industries. The VGF disbursement will occur in five instalments, corresponding to various phases of the BESS project implementation. This move represents a crucial moment in the government's pro-environment initiatives and is expected to reduce the cost of battery storage systems while enhancing their feasibility.

This strategic move not only strengthens the integration of renewable energy into the electricity grid but also reduces the need for costly infrastructure upgrades, further contributing to a cleaner and more efficient energy landscape.

Read in detail

2. Global Biofuels Alliance Announced at the G20

India, along with the leaders of Singapore, Bangladesh, Italy, the USA, Brazil, Argentina, Mauritius, and the UAE, announced the launch of a Global Biofuel Alliance (GBA) at a G20 Summit in New Delhi to boost the use of cleaner fuels.

GBA is an India-led initiative to develop an alliance of governments, international organisations, and industry to facilitate the adoption of biofuels through facilitating technological advancements, intensifying the utilisation of sustainable biofuels, and shaping robust standard setting and certification through the participation of a wide spectrum of stakeholders.

What is it about?

The GBA, stemming from India's G20 presidency, is centred on cooperation and presents fresh opportunities for Indian industries to export technology and equipment. The alliance will boost India's existing biofuel programmes like PM-JIVAN Yojna, SATAT, and the GOBARdhan scheme, potentially boosting farmers' income, employment, and overall ecosystem development.

A total of 19 countries, including seven G20 nations, and 12 international organisations, such as the World Bank, Asian Development Bank, World Economic Forum, International Energy Agency, International Energy Forum, International Renewable Energy Agency, and International Civil Aviation Organisation, have expressed their commitment to the GBA. Notably, G20 countries anticipate unlocking economic opportunities worth a remarkable US$500bn over the next three years. Collectively, GBA members, including the USA, Brazil, and India, which together account for around 85 percent of global biofuel production and 81 percent of consumption, have the potential to significantly impact the global biofuels industry.

The global ethanol market, valued at US$99.06bn in 2022, is expected to grow at a 5.1 percent annual rate and surpass US$162.12bn by 2032. The International Energy Agency (IEA) predicts a 3.5-5 times growth potential in biofuels by 2050 due to Net Zero targets, creating a significant opportunity for India. By uniting major biofuel consumers and producers, the GBA aims to advance biofuel development and deployment, positioning it as a crucial element in the energy transition while contributing to economic growth and job creation.

Read in detail

3. Rajasthan Approves Draft of Green Hydrogen Policy 2023

The Rajasthan Cabinet has approved the draft of the "Rajasthan Green Hydrogen Policy 2023." The policy establishes a framework for the state's green hydrogen initiatives.

Under the scheme, a state-level committee led by the Chief Secretary will grant approvals for green hydrogen projects, aiming to produce 2000 kTPA (kilotons per annum) of green hydrogen within the state by 2030.

What is it about?

The Government of Rajasthan has introduced a comprehensive green hydrogen policy aimed at increasing the production of green hydrogen. The policy streamlines land allocation for renewable energy plants dedicated to hydrogen production, adhering to the Rajasthan Land Revenue Rules 2007. The land will be allocated within industrial areas through the Rajasthan State Industrial Development and Investment Corporation (RIICO), and private land can also be utilised for hydrogen plant establishment. The policy envisions the creation of at least one Green Hydrogen Valley dedicated to catering to the demands of refineries and fertiliser plants. Rajasthan sets an ambitious target of supplying a minimum of 20 percent of India's green hydrogen demand while permitting the blending of up to 10 percent green hydrogen into locally produced natural gas.

Under the policy, investors can benefit from the Rajasthan Investment Promotion Scheme, which offers a range of incentives. This includes a banking facility for water and renewable energy production with up to one-third availability. The policy allows renewable energy plants to produce hydrogen with a capacity of up to 2.5 times the contract demand. Additionally, a substantial 50 percent discount on transmission and distribution charges for a decade and a 10-year subsidy on additional and cross-subsidy charges for purchasing renewable energy from third parties will be extended. Furthermore, the policy prioritises government land allocation for green hydrogen production from brine water or treated water.

The establishment of research centres will receive a 30 percent grant, capped at ₹50mn. Notably, the first 500 kTPA-capacity renewable energy plants integrated into the Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (RVUNL) network will be granted special incentives, with each plant eligible for up to 50 MW of capacity. This comprehensive Green Hydrogen Policy positions Rajasthan as a key player in advancing renewable energy and green hydrogen production in India.

Read in detail

4. Ministry of Power released the National Framework for Promoting Energy Storage System

The Ministry of Power, Government of India, has unveiled a comprehensive National Framework aimed at promoting Energy Storage Systems (ESS) as an integral part of the country's power infrastructure.

At its core, this framework aligns with India's ambitious goals of achieving a 50 percent cumulative installed capacity from non-fossil fuel-based energy resources by 2030 and reducing its greenhouse gas emissions by 45 percent compared to 2005 levels.

What is it about?

The Government of India has introduced a comprehensive national framework for energy storage, setting forth ambitious objectives to reshape its energy landscape. This framework primarily aims to ensure a continuous supply of renewable energy, reduce emissions, and drive down energy costs by encouraging the deployment of ESS. This strategic move also seeks to reduce dependence on fossil fuel power plants, enhance grid stability and reliability, promote innovation in energy storage technologies, and ensure equitable access to energy storage solutions for all segments of the population.

According to estimates by the Central Electricity Authority (CEA), India is projected to require an ESS capacity of 16.13 GW by 2026–27 to effectively integrate the growing renewable energy capacity, with significant growth expected in the following years. The financial commitment for pumped storage plants (PSP) and battery energy storage systems (BESS) from 2022-2032 is substantial, highlighting the government's dedication to advancing energy storage technology.

One of the aims of this initiative is to address the variability of renewable energy sources such as solar and wind. These sources depend on factors like time, climate, season, and geographical location, posing a significant hurdle to maintaining a consistent power supply. ESS plays an important role in this endeavour by allowing surplus energy generated during favourable conditions to be stored and used during high-demand periods or when renewable generation is limited. This approach not only significantly reduces grid instability but also ensures a reliable and uninterrupted power supply.

India's National Framework for Energy Storage signifies a strategic leap towards transforming the nation's energy sector into a sustainable and environmentally responsible one. These commitments highlight India's resolution to combat climate change and transition towards cleaner energy sources, marking a significant milestone in its journey towards a greener future.

Read in detail

5. Renewables Jobs Nearly Doubled in Past Decade, Soared to 13.7 Million in 2022

The International Renewable Energy Agency (IRENA) released an annual review, published in collaboration with the International Labour Organisation (ILO), that provides the latest estimates of renewable energy employment globally and an overview of the renewable energy employment landscape as of 2022.

The tenth edition of "Renewable Energy and Jobs: Annual Review 2023," is the product of a continuing collaboration between the two agencies.

What is it about?

A joint report, "Renewable Energy and Jobs: Annual Review 2023," by the IRENA in collaboration with the ILO, revealed that global renewable energy employment soared to 13.7 million jobs in 2022, marking a significant increase of one million jobs from the previous year and substantial growth since 2012, when only 7.3 million jobs were recorded. This surge highlights the accelerating global shift towards sustainable energy sources.

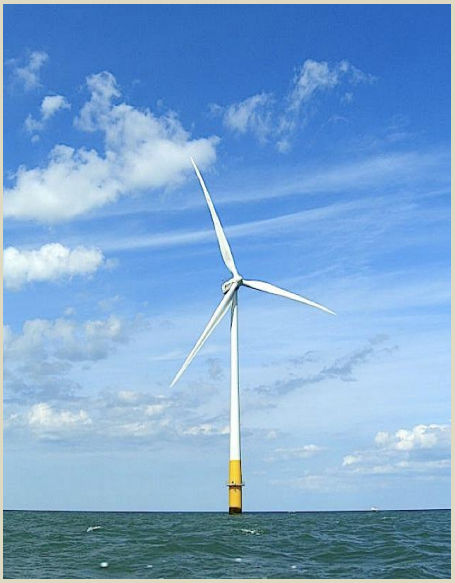
The report also highlights that while renewable energy investment is on the rise worldwide, the majority of jobs are concentrated in a few countries, notably China (41 percent of the global total), Brazil, EU nations, India, and the USA. Solar photovoltaics (PV) remained the largest employer with 4.9 million jobs, followed by hydropower and biofuels at around 2.5 million each, and wind power with 1.4 million jobs.

The report emphasises the need to expand education and training, especially for youth, minorities, and marginalised groups, to prevent the widening of skill gaps while also striving for greater gender equity. Currently, gender distribution varies among sectors, with solar technology exhibiting the best balance, with 40 percent of jobs held by women. These findings highlight the importance of inclusive growth in the renewable energy sector for a sustainable and equitable energy transition.

2022 was another outstanding year for renewable energy jobs, amid multiplying challenges. Creating many more millions of jobs will require a much faster pace of investment in energy transition technologies.

Read in detail

6. MNRE Issues Tender for Development of 7 GW of Offshore Wind Energy Projects



The Ministry of New and Renewable Energy (MNRE) has issued a tender for the construction of India's first set of offshore wind projects, offering them at seven locations off the coast of Tamil Nadu with a cumulative capacity of 7 GW. The Ministry has appointed the National Institute of Wind Energy (NIWE) as the nodal agency for conducting the bidding.

According to the tender notice, bids for 4.1 GW of projects will be issued in January 2024, with the remaining in the next financial year. The notice has invited interested parties to survey the proposed locations.

What is it about?

The MNRE has introduced a comprehensive strategy to transform the nation's energy landscape through offshore wind power. This plan outlines three distinct development models. The first model, known as VGF, aims to tender 500 MW of offshore wind projects in Gujarat and Tamil Nadu, with a four-year timeline for project commissioning to ensure predetermined power tariffs are met. The second model offers developers the opportunity to lease offshore wind sites for five years, conduct feasibility studies, and benefit from various incentives. Lastly, the third model allows developers to identify new offshore wind sites within the Exclusive Economic Zone (EEZ), inviting bids for seabed development and extending benefits similar to the second model.

In another development, MNRE has issued a public notice that proposes to allocate offshore wind sites off the coast of Tamil Nadu, amounting to a substantial 7,125 MW of offshore wind energy across seven sites. Power generation from these projects will be accessible through various channels, ensuring the widespread use of renewable energy. Leasing seabed areas to developers for an initial period of five years, with a one-year extension option, enhances flexibility in harnessing India's abundant offshore wind potential.

This strategic initiative highlights India's commitment to clean and sustainable energy, positioning the nation as a global leader in offshore wind energy development. It marks a significant milestone towards a greener and more sustainable future for India

Read the tender here *and the* ***public notice here***

7. IREDA Signs MoUs with the Bank of Maharashtra to Finance Renewable Energy Projects

The Indian Renewable Energy Development Agency (IREDA) signed an initial pact with the Bank of Maharashtra (BoM) to finance renewable energy projects. Under this agreement, the BoM can invest in the bonds issued by IREDA under the specified terms and conditions of the offering.

The MoU was signed by Bharat Singh Rajput, General Manager (Technical Services), IREDA, and Rajesh Singh, General Manager (Retail & MSME Credit), BoM.

What is it about?

In a significant move to address the substantial funding requirements of India's renewable energy sector, including emerging technologies such as green hydrogen and offshore wind, the IREDA has inked MoUs with public sector banks and financial institutions. These agreements signify a concerted effort to promote and facilitate co-lending for large-scale renewable energy projects, marking a crucial milestone in India's journey towards sustainable energy solutions.

The recently signed MoU between IREDA and the BoM is symbolic of this ongoing commitment to advancing renewable energy adoption in the country. The primary objective of this collaboration is to establish a robust financial framework that will enhance access to clean and sustainable energy solutions for a wide spectrum of communities and industries. This initiative highlights the significance of synergistic efforts between financial institutions and government bodies, aligning with India's ambitious goal of achieving Net Zero emissions by 2070.

The MoU encompasses a range of essential services aimed at promoting renewable energy projects. These services include co-lending and co-origination support, which streamlines the financing process for renewable energy projects, making funds more readily accessible. Additionally, the collaboration will facilitate loan syndication and underwriting, simplifying the financing process further. IREDA borrowers will benefit from the efficient management of Trust & Retention Accounts, ensuring transparency and accountability in financial transactions. Lastly, a commitment to establishing stable fixed interest rates spanning a three-four-year period for IREDA borrowings highlights the partnership's focus on long-term sustainability for renewable energy projects. Through these strategic partnerships, India takes a significant step towards realising its vision of a sustainable and green future.

Read in detail

CUTS AT WORK

CUTS organised a webinar entitled 'Reimagining India's Digital Public Infrastructure Globally for Attaining the SDGs." The objective of the session was to discuss how digital public infrastructure (DPI) can contribute to the attainment of the SDGs and how India's DPI can be reimagined globally.

Amar Patnaik, Member of Parliament, Rajya Sabha stated in his opening remarks that India's DPIs, such as Aadhaar, UPI, and the Ayushman Bharat Digital Mission, have played a significant role in accelerating the growth towards the SDGs. He also lauded the New Delhi Declaration at the G-20, wherein India plans to build and maintain a Global Digital Public Infrastructure Repository (GDPIR).

The panellists discussed the need for digital infrastructure to be neutral. The hallmark of digital infrastructure is that it is invisible to the public eye. Before implementing DPI, a comprehensive framework is essential to guaranteeing data security and privacy. These solutions should prioritise the end user and undergo rigorous testing across borders, promoting cross-border cooperation between nations.

There is a need to champion democratic approaches such as creating mass-scale digital access points and making DPI available to sectoral experts. A specific emphasis was placed on not creating an exclusionary policy. It is imperative to increase global south collaboration, with public-private partnerships (PPPs) and regional cooperation playing crucial roles. Capacity-building initiatives are also indispensable to ensure the effective implementation of DPI initiatives, contributing to a more equitable and sustainable future.

Other panellists in this webinar included Lorrayne Porciuncula, Co-founder and Executive Director, Datasphere Initiative; Osama Manzar, Founder and Director, Digital Empowerment Foundation; Parminder Jeet Singh, Digital Society Researcher; and Hanani Hlomani, Research Fellow, ICT Africa (RIA). The session was moderated by Navneet Sharma, Director General, CUTS Institute for Regulation & Competition (CIRC).

Read in detail here: https://tinyurl.com/ykzerypd

Power Statistics for September 2023

Installed capacity (GW)	Thermal		RE (including 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					
424.28	238.44	56.19	178.36	42.03	68.29%	28.25%	240.5	239.7	0.3%

CUTS International

D-217, Bhaskar Marg, Bani Park, Jaipur 302 016, India.
Ph: +91.141.228 2821, Fax: +91.141.228 2485, E-mail: cuts@cuts.org, Web: www.cuts-international.org
Also at Delhi, Calcutta and Chittorgarh (India); Lusaka (Zambia); Nairobi (Kenya); Accra (Ghana);
Hanoi (Vietnam); Geneva (Switzerland); and Washington DC (USA).