ENERGY and CLIMATE WATCH

CUTS International

September 2022

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

It is vital to switch from energy systems based on fossil fuels to renewables to lessen reliance on the unpredictable fossil fuel market and combat climate change. Additionally, the use of renewable energy has the potential to increase employment across all regions, particularly in rural areas. It is essential to emphasise India's enormous renewable energy potential to attract international investments and start the Green Energy Revolution. However, the renewable sector requires comprehensive policy and regulatory framework assistance. The push from industry is also necessary to adopt new technologies and rapid 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 the number of 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 state and region, a prerequisite for informed adaptation policy.

Additionally, the newsletter captures power statistics for September 2022 to update the reader on the developments in the power sector. CUTS' is carrying out a project on the decarbonisation of medium and heavy-duty vehicles operating in the freight network of India. A brief of this project, along with other e-mobility initiatives, is showcased in the CUTS AT WORK section.

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1. CEA Issues Draft National Electricity Plan for Generation

The Central Electricity Authority (CEA) has issued the draft National Electricity Plan for generation. The report projected the share of non-fossil-based capacity to rise to 57.5 percent by 2026-27 and 68.4 percent by 2031-32. The capacity addition of 228 GW comprising 40 GW of Conventional and 187 GW of Renewable is required during 2022-27 to meet the energy requirement for 2026-27.

What is it about?

The projected electrical energy requirement and peak electricity demand are estimated at 1,874 BU and 272 GW for the year 2026-27 & 2,538 BU and 363 GW for the year 2031-32. Besides the 25 GW already under construction, India will need an additional coal-based capacity of up to 28 GW by FY32 to cater to this demand. The total fund requirement for the capacity edition during 2022-27 would be ₹14.31tn. CEA has invited comments and suggestions on the draft by December 05, 2022.

Draft National Electricity Plan

2. ₹195bn Approved Under PLI Scheme for High-Efficiency Solar Modules

The Union Cabinet has approved the Ministry of New & Renewable Energy's proposal for the implementation of the Production Linked Incentive (PLI) Scheme (Tranche II) on the 'National programme on High-Efficiency Solar PV Modules', with an outlay of ₹195bn for achieving manufacturing capacity of Giga Watt (GW) scale in High-Efficiency Solar PV Modules.

What is it about?

The scheme aims to build an ecosystem for manufacturing high-efficiency solar PV modules in India and reduce import dependence. The incentives will be available for five years post-commissioning of manufacturing plants. Benefits from the scheme are expected to be i) 65 GW per annum manufacturing capacity; ii) Direct investment of around ₹940bn; iii) Direct employment of about 195,000 and indirect employment of 780,000 persons; iv) Import substitution of approx. ₹1.37tn.

Read in detail

3. Renewable Energy Jobs Increased by 700,000 in 2021

The International Renewable Energy Agency (IRENA), in collaboration with the International Labour Organisation (ILO) has published a report, "Renewable energy and jobs: Annual review 2022". As per the report, worldwide employment in renewable energy was 12.7 million in 2021, up from 12 million in 2020. An estimated 38.2 million jobs could be created in renewable energy by 2030.

What is it about?

Nearly two-thirds of all jobs in 2021 were created in Asia, with China alone accounting for 42 percent of the global total. The European Union and Brazil followed it with 10 percent each and the United States and India with 7 percent each. Solar energy, the fastest growing sector, provided 4.3 million jobs - more than a third of the total renewable energy workforce. Worldwide employment in renewable energy in 2030 could rise to 38.2 million under an ambitious energy transition scenario with front-loaded investments. The number of jobs in the energy sector could increase to 139 million, including more than 74 million in energy efficiency, electric vehicles, power systems/flexibility and hydrogen.

Read in detail

4. Denmark Becomes First Country to Pay for 'Loss & Damage' from Climate Change

Denmark has promised €13.4mn to develop nations damaged by climate change. By doing so, it became the first country to offer "loss and damage" compensation for those in the most climate-vulnerable regions of the world. The pledge was made during a ministerial meeting at United Nations General Assembly in New York.

What is it about?

The Danish Foreign Ministry said in a statement that €4.7mn would go to an organisation based in Frankfurt, Germany, that subsidises insurance in poorer countries. A further 32.5 million Danish crowns (€4.4mn) will go to the ministry's "strategic partnerships with civil society, which work with climate-related loss and damage". There will be a special focus on the Sahel region, which spans North Africa's Sahara desert. Another €3.4mn will be spent on "strategic efforts" to support current climate change negotiations in the run-up to COP27. The final €941,314 will be given to civil society actors working in developing nations to improve resilience to the impacts of climate change.

Read in detail

5. Adani Green Commissions 600 MW Solar-Wind Hybrid Project in Rajasthan

Adani Green Energy has commissioned world's largest co-located 600 MW Wind-Solar hybrid power plant at Jaisalmer, Rajasthan. The plant has Power Purchase Agreements (PPA) with Solar Energy Corporation of India (SECI) at ₹2.69/kWh for 25 years. The project consists of 600 MW solar and 150 MW wind plants.

What is it about?

The hybrid power plant has been implemented with cutting-edge technology, consisting of 600 MW solar and ~150 MW wind plants. The solar plant uses technologically superior bifacial PV modules and employs horizontal single-axis tracker (HSAT) technology to capture maximum energy from the sun. The co-located plant shall not only reduce the intermittency of renewable power but also help the Nation optimise the transmission network. In May 2022, Adani Green operationalised India's first hybrid power plant with a capacity of 390 MW at Jaisalmer, Rajasthan.

Read in Detail

6. Countries Need to Pledge Seven Times Higher to Get on Track for 1.5°C

'United in Science' - a report by the World Meteorological Organisation (WMO) indicates that national mitigation pledges for 2030 have shown progress toward lowering greenhouse gas emissions. Still, the aggregate effect is insufficient to meet the goals of the Paris agreement. The ambition of these new pledges needs to be four times higher to limit warming to 2° C and seven times to 1.5° C.

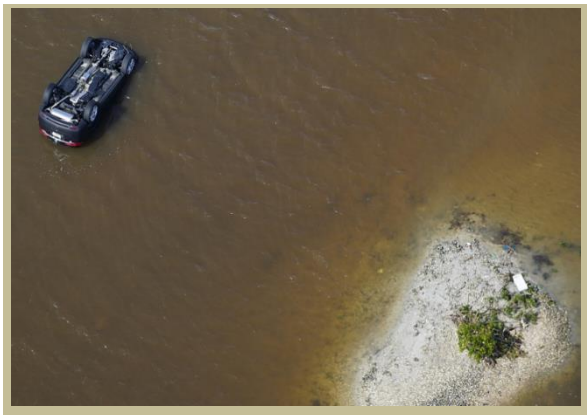
What is it about?

Key messages from the report are:

Atmospheric greenhouse gas concentrations continue to rise and fossil fuel emissions are now above pre-pandemic levels. **Recent years saw record high temperatures and ocean heat.** Looking forward, there is a 48 percent chance that, during at least one year in the next five years, annual mean temperature will temporarily be 1.5 °C higher than in 1850-1900. **Mitigation pledges are insufficient to achieve the Paris Agreement.** Enhanced action is needed to prevent the continued warming that is increasing the likelihood of irreversible changes in the climate system, known as tipping points. **Billions of people around the world are exposed to climate change impacts**. Cities - responsible for up to 70 percent of human-caused emissions - will face increasing socioeconomic impacts. The world's most vulnerable populations will suffer most, as seen in recent extreme weather events. **Adaptation is crucial to lowering the risks to climate impacts**. Early warning systems can save lives, reduce losses and damages, reduce disaster risk, and support climate change adaptation.

Read in detail

7. Climate Change Added 10 Percent to Hurricane Ian's Rainfall



Climate change added at least 10 percent more rain to Hurricane Ian; a study prepared immediately after the storm shows. The research, which is not peer-reviewed, compared peak rainfall rates during the real storm to about 20 different computer scenarios of a model with Hurricane Ian's characteristics in a world with no human-caused climate change.

What is it about?

Michael Wehner, Climate Scientist at Lawrence Berkeley National Lab and Kevin Reed, an Atmospheric Scientist at Stony Brook University, published a study earlier this year looking at the hurricanes of 2020. They found that during their rainiest three-hour periods, they were more than 10 percent wetter than in a world without greenhouse gases trapping heat. A long-time rule of physics is that for every extra degree of warmth, the air in the atmosphere can hold 7 percent more water. Recently, the Gulf of Mexico was 0.8 degrees warmer than normal, which should have meant about 5 percent more rain, and the reality turned out to be even worse. The study found the hurricane dropped double that - 10 percent more rain. Ten percent may not sound like a lot, but 10 percent of 20 inches is two inches, which is a lot of rain, especially on top of the 20 inches that already fell, Reed said.

Read in detail

CUTS AT WORK

CUTS, in the space of electric mobility, is carrying out projects 'Exploring the potential of Last Mile Transportation as an enabler for Green Jobs' and 'Decarbonisation of Freight Sector in India'. We recently surveyed Delhi, Jaipur, Lucknow and Bengaluru to gauge the impact of e-mobility in last mile transportation on local economy and livelihoods opportunities including gender inclusivity, skill inclusivity, reduced environment pollution and improved the standard of living of citizens from a 'just transition' point of view.

Power statistics for September 2022

Installed capacity (GW)	Thermal		RE		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					
405.77	236.06	58.18	162.93	40.15	66.7%	13.06%	196.61	195.23	0.7%

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