

We welcome you to the third 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.

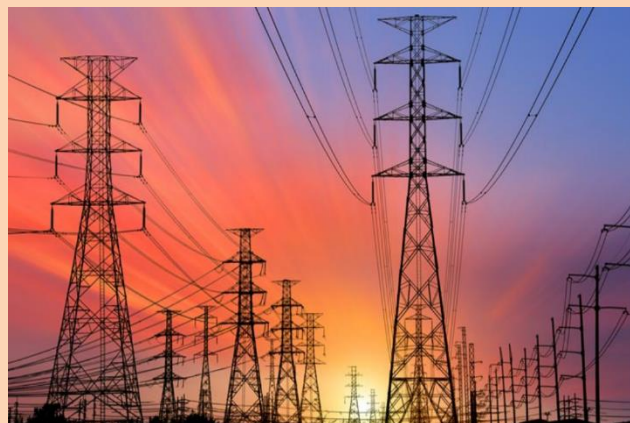
Similarly, we are also focusing on the issue of climate change in this edition. India's high population density, large spatial and temporal variability in rainfall, and high poverty rates make it particularly vulnerable to the impacts of climate change. There has been an increase in the national mean 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 August 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. Ministry of Power Amends Energy Conservation & Electricity Act



Minister of Power and Renewable Energy, R K Singh, introduced two bills in Lok Sabha early in August 2002 – The Energy Conservation (Amendment) Bill 2022 and The Electricity (Amendment) Bill 2022. The bill on Energy Conservation was passed without much deliberation, while the Electricity bill was referred to the Standing Committee of parliament for consultations.

What is it about?

The Energy Conservation Bill aims to: (i) mandate the use of non-fossil sources, including green hydrogen and ammonia, biomass and ethanol for energy and feedstock, (ii) establish carbon trading markets, (iii) bring large residential buildings under the ambit of the energy conservation regime, (iv) enhance the scope of the Energy Conservation Building Code, (v) amend penalty provisions for non-compliance to fuel consumption norms, (vi) increase members in the governing council of the Bureau of Energy Efficiency, and (vii) empowers the state electricity regulatory commissions (SERCs) to make regulations to discharge its functions smoothly.

[Energy Conservation Bill](#)

The Electricity Amendment Bill proposes: (i) a regulatory framework for multiple electricity service providers within a region, (ii) penalty for non-compliance with renewable purchase obligations, (iii) impetus for the development of Hydro Energy, (iv) structural changes in the selection committee for appointing members in SERCs, and (v) increase in the number of members in SERC and appellate tribunal for electricity.

[Electricity Amendment Bill](#)

2. Rajasthan Issues Electric Vehicle Policy 2022



The Rajasthan government has developed its electric vehicle (EV) policy to encourage the purchase of EVs. The policy targets market penetration of 15 percent in two-wheelers, 30 percent in three-wheelers, and five percent in four-wheelers, and a manufacturing target 3.5 million per year by 2027.

What is it about?

The government announced the EV policy in the budget 2019-20 and approved the draft policy in May 2022. The provision under the announcement was to reimburse ₹5,000-10,000 SGST amount for two-wheelers and ₹10,000-20,000 for purchasing three-wheelers according to the vehicle's battery capacity. At the same time, the Transport Department has received a sum of ₹400mn to clear the pending cases of the grant on the purchase of EVs. An amount of ₹180mn is given as grants to people who bought EVs in the last financial year in 12 Regional Transport Office (RTO) areas of the state. A grant amount of ₹50mn is to be disbursed to 3,000 vehicle owners (who purchased vehicles in the current fiscal year) in the state.

[Read in detail](#)

3. Madhya Pradesh Rolls out Renewable Energy Policy 2022



The 'Madhya Pradesh Renewable Energy Policy 2022' targets 20,000 MW of renewable energy production capacity in the state by 2027. It also envisages investment of ₹500bn for renewable energy generation and ₹100bn for equipment manufacturing by 2027. The policy aims for 50 percent of renewable energy in the state's energy mix and to generate 50,000 new jobs by 2030.

What is it about?

The New and Renewable Energy Department of Madhya Pradesh has issued the renewable energy policy for 2022-2027. The policy offers several incentives to project developers to achieve the production capacity and investment targets, such as exemption in electricity duty and energy development cess; 50 percent reimbursement on stamp duty on the purchase of private land; a rebate of 50 percent on circle rate for government lands; waiver of wheeling charges; facilitation for carbon credit mechanism. The policy also promotes renewable energy equipment manufacturing and production of green hydrogen through incentives under the Industrial Promotion Policy.

[Read in detail](#)

4. India Updates NDC on Climate Change



The Union Cabinet has approved India's updated Nationally Determined Contribution (NDC) to be communicated to the United Nations Framework Convention on Climate Change (UNFCCC). The new NDC does not include 500 GW of renewable energy capacity addition by 2030 but retains the target of 50 percent of power from non-fossil fuels. This will supposedly provide ease in achieving the climate targets and ensuring energy security for the country.

What is it about?

Earlier, India submitted its NDC to UNFCCC in October 2015. The 2015 NDC comprised eight goals; three of these had quantitative targets up to 2030, namely, installed power capacity from non-fossil sources to reach 40 percent; reducing the emissions intensity of GDP by 33 to 35 percent compared to 2005 levels and creating additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover.

As per the updated NDC, the target is to reduce the emissions intensity of its GDP by 45 percent by 2030 from the 2005 level and achieve about 50 percent of installed power capacity from non-fossil sources by 2030. The target of 500 GW of renewable energy by 2030 as part of the [panchamrit goals](#) has been dropped because of keeping options open for new coal-based plants in the projected 820 GW capacity if excess demand is not met from renewables.

[Read in detail](#)

5. India's Annual Green Energy Finance just one fourth of its Requirement



The "Landscape of Green finance" report by the Climate Policy Initiative claims that green finance in 2019-2020 was ₹3.1bn per annum, which is less than one-fourth of India's requirement. The report estimates that for India to achieve the climate goals, it requires approximately ₹162.5tn from 2015-2030 or roughly ₹11tn per year. The study tracked public and private financing in key economic sectors like clean energy, transport and energy efficiency.

What is it about?

India needs approximately ₹162.5tn till 2030 for NDCs and ₹716tn to achieve net-zero emissions by 2070. India's current tracked green finance represents less than 25 percent of the total requirement across sectors to meet the NDCs, accounting for mitigation only. Adaptation flows are even more muted. The total fund flow towards mitigation was almost equally split between clean energy (42 percent) and energy efficiency (38 percent), and was significantly higher than clean transport (17 percent).

Domestic sources continue to account for the majority of green finance, with 87 percent and 83 percent in FY2019 and FY2020, respectively. The share of international sources increased from 13 percent in FY 2019 to 17 percent in FY 2020. The Foreign Direct Investment (FDI) flows increased substantially from FY2016-2018, reaching nearly ₹90bn in FY2020. However, green finance still only accounts for ~3 percent of total FDI inflows to India.

[Read in detail](#)

6. Renewable Energy Potential to Drop due to Climate Change



Solar and wind potential in India are likely to face a negative trend in the future due to climate change, according to the study 'Analysis of future wind and solar potential over India using climate models' by the Indian Institute of Tropical Meteorology. The research uses state-of-the-art climate models devised by the Intergovernmental Panel on Climate Change (IPCC) to analyse the wind and solar projections for the renewable energy sector over the Indian subcontinent.

What is it about?

Regional analysis of wind potential indicates that the frequency of high energy-producing wind speeds will decrease, whereas low energy-producing wind speeds will likely increase in the future. Solar projections for the future suggest that solar radiation will reduce during all seasons over most of the Indian landmass. The seasonal and annual wind speeds will likely decrease over North India and increase along South India. The southern coast of Odisha and the southern Indian states of Andhra Pradesh and Tamil Nadu show promising potential for wind energy in the climate change scenario. Parthasarathi Mukhopadhyay, one of the researchers who conducted the study, said, "Our industry must adapt to the changing climate, and our technologies must keep pace. Such predictions should not be taken as facts, but as possibilities."

[Read in detail](#)

7. Green Ammonia Plant in Rajasthan with an Investment of ₹400bn



Avaada Group, an integrated energy enterprise, has signed a memorandum of understanding (MoU) with the Department of Industries and Commerce, Government of Rajasthan, to set up a Green Ammonia facility and a Renewable Energy power plant in Kota, Rajasthan. The MoU proposes an investment of ₹400bn while providing direct employment opportunities to about 3,500 people and indirect jobs to over 10,500 people.

What is it about?

The MoU signed was part of the investment promotion strategy for the Investment Rajasthan Summit recently held in New Delhi. Calling the collaboration a game changer for India's green push, Vineet Mittal, Chairperson, Avaada Group, said, "The biggest advantage of green hydrogen is that it burns clean, leaving only water vapour behind. This could be groundbreaking for industries that require high-temperature heat, such as foundries, glass and steel, as it will not only replace fossil fuels with renewable sources but also produce green ammonia and a substitute for gas."

[Read in detail](#)

8. Delhi Targets One Charging Point for every 15 EVs by 2024



Delhi's charging/ swapping infrastructure action plan for 2022-25 includes incentives for battery swapping facility operators and installing one charging point for every 15 EVs by 2024. The Delhi government will also involve power distribution companies in studying the impact of EV charging on the grid. The plan promotes battery as a service model, thus reducing the upfront cost of EVs significantly.

What is it about?

The Delhi government launched the action plan for charging/swapping infrastructure for EVs in Delhi on the completion of two years of its EV policy introduced in 2020. As per the plan, Delhi will aim to install around 18,000 public and semi-public charging points by 2024. The targets have been set based on EV sales projections for 2024 (25 percent of all new vehicle registration as EVs). One public charging point will be installed for every 15 EVs, spread evenly and accessible within a 03-kilometre radius from anywhere in Delhi to cater to the demand for better-charging infrastructure. [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](#)'. The organisation carried out a survey in Delhi, Jaipur and Lucknow to gauge the impact of e-mobility in last mile transportation on local economy and livelihoods opportunities, including gender and skill inclusivity, reduced environmental pollution and improved standard of living of citizens from a 'just transition' point of view.

Power Statistics for August 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					
401.13	236.06	58.85	161.29	40.21	66.98%	12.67%	192.36	190.35	1%