ENERGY and CLIMATE WATCH

CUTS International

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We welcome you to the eighth edition of our monthly newsletter on energy and climate change. It consists of significant developments 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, comprehensive policy and regulatory framework assistance is required for the renewable sector. The push from industry is also necessary to adopt new technologies and make a 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 states and regions, a prerequisite for an informed adaptation policy.

Additionally, the newsletter captures power statistics for January 2023 to update the reader on the developments in the power sector. CUTS organised a Policy Dialogue on January 18, 2023, to discuss Rajasthan's experience in implementing decentralised solar plants and agricultural feeder-level solarisation under different components of the PM-KUSUM scheme. The 'CUTS AT WORK' section includes a brief description of the event.

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1. Green Growth is One of the Budget's Top Priorities for 2023-24

The Budget 2023 has allocated □102.22bn toward the renewable energy sector in the Union Budget 2023. The outlay is an increase of 48 percent over last year's allocation of □69bn (budget estimate) and 45.3 percent over the revised estimate of □70.33bn. Green growth has been announced as one of the seven priority sectors for the government, with the focus being on programmes for fuels, energy, farming, mobility, buildings, equipment, and policies for efficient use of energy across various economic sectors.

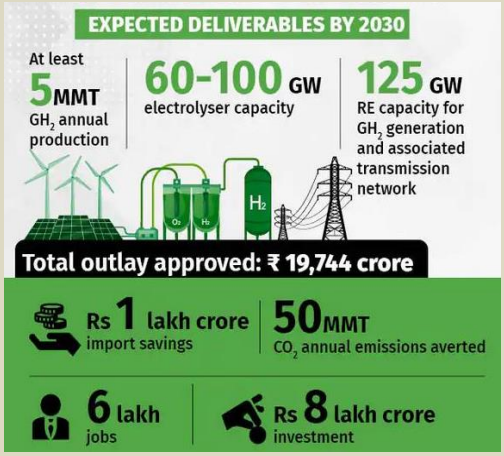
What is it about?

The Union Budget introduced in the Parliament on February 01, 2023, increased infrastructure investment and energy transition allocations. Some of the key announcements for green growth made at the budget presentation included:

- **Green Hydrogen:** □2.97bn has been allocated for the first year of the National Green Hydrogen Mission. This will facilitate the economy's transition to low carbon intensity, reduce dependence on fossil fuel imports and make the country assume technology and market leadership in this sunrise sector.
- **Energy Transition:** The budget provides □350bn for priority capital investment toward energy transition, net zero objectives, and energy security under the monitoring of the Union Ministry of Petroleum and Natural Gas.
- **Battery Storage:** A viability gap funding support for battery energy storage systems with a capacity of 4,000 MWh was announced to spur sustainable development. A detailed framework for pumped storage projects will also be formulated. Custom duty concession on lithium-ion batteries is also extended.
- **Renewable Energy Evacuation:** Re-evacuation facilitates generated power to be swiftly evacuated to the power grid for distribution. An interstate transmission system for evacuation and grid integration of 13 GW of renewable energy from Ladakh will be constructed with an investment of □207bn, including central support of □83bn.
- **Green Credit Programme:** A Green Credit Programme will be notified under the Environment Protection Act, 1986, to encourage behavioural change. This will incentivise environmentally sustainable and responsive actions by companies, individuals, and local bodies and help mobilise additional resources for such activities.
- **Vehicle Replacement:** Furthering the Vehicle Scrapping Policy, the budget for 2023-24 allocated funds to scrap old vehicles of the Central Government. States will also be supported in replacing old vehicles and state ambulances.

Read in detail

2. Indian Government Approves National Green Hydrogen Mission



The government approved the National Green Hydrogen Mission, aimed at making India the global hub for the production of green hydrogen. The total outlay for the mission is □197.44bn, out of which the government has allocated □174.9bn for the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme, □14.66bn for the upcoming pilot projects, □4bn for R&D, and □3.88bn towards other mission components.

The Ministry of New and Renewable Energy will coordinate the implementation of the mission.

What is it about?

The mission seeks to promote the development of a green hydrogen production capacity of at least 5 million metric tonnes (MMT) per annum with an associated renewable energy capacity addition of about 125 GW in the country by 2030. It will also result in a cumulative reduction in fossil fuel imports of over □1tn and abatement of nearly 50 MMT of annual greenhouse gas emissions by 2030.

The mission will facilitate demand creation, production, utilisation and export of green hydrogen. Under the SIGHT programme, two distinct financial incentive mechanisms - targeting domestic manufacturing of electrolysers and production of green hydrogen, will be provided under the mission. The mission will also support pilot projects in emerging end-use sectors and production pathways. Regions capable of supporting large-scale production and/or utilisation of hydrogen will be identified and developed as Green Hydrogen Hubs.

Read in detail

3. NTPC Commissions India's First Green Hydrogen Blending Project

The National Thermal Power Corporation (NTPC) has commissioned India's first green hydrogen blending project. The green hydrogen blending has started in the piped natural gas (PNG) network of NTPC Kawas township, Surat. The project is a joint effort of NTPC and Gujarat Gas Limited (GGL).

This set-up is geared up to supply H2-NG (natural gas) to households of Kawas township at Adityanagar, Surat. Green hydrogen in Kawas is made by electrolysis of water using power from already installed 1 MW floating solar project.

What is it about?

The Petroleum and Natural Gas Regulatory Board (PNGRB), the regulatory body, has approved 5 percent vol./vol. blending of green hydrogen with PNG to start with and the blending level would be scaled phase-wise to reach 20 percent. Green hydrogen, when blended with natural gas, reduces CO2 emissions keeping the net heating content the same. This feat is achieved only by a few countries like UK, Germany, and Australia.

This would bring India to the centre stage of the global hydrogen economy. India would not only reduce its hydrocarbon import bill significantly but can also bring forex ashore by being a green hydrogen and green chemicals exporter to the world.

Read in Detail

4. Ministry of Power Advises Utilities to Not Retire Thermal Plants Until 2030

The Ministry of Power has asked utilities to not retire any coal-fired power plants untill 2030 and urged for carrying ot renovation and modernisation (R&M) for life extension and improve the flexibility and reliability of thermal units considering the expected demand scenario and availability of capacity in future. There are currently 179 coal-fired power plants operating in India, out of which, government had planned to reduce the electricity output of at least 81 coal-fired power plants over the next four years.

What is it about?

The Government of India strives to provide affordable electricity on a 24x7 basis to common citizens. However, the country is witnessing an energy demand post-pandemic that projected to surge all-time high in the coming summer of 2023 and beyond. Therefore, the role of thermal fleets, including old thermal units, becomes crucial to support renewable integration. It may be noted that about 15-16 GW of new thermal capacity is expected by December 2023. Accordingly, R&M for life extension is to be considered after 2023.

Read in detail

5. Renewable Investments Matches Fossil Fuels for the First Time in 2022

According to Energy Transition Investment Trends 2023, a report published by BloombergNEF, investment in low-carbon energy technologies worldwide was equal to the money spent on fossil fuels. The amount of investment in cleaner energy technology in 2022 was US$1.1tn.

Investment towards energy transition grew by US$261bn from the previous year, a 31 percent increase from 2021. But the investment in fossil fuels was also simultaneously up US$214bn over 2021 levels.

What is it about?

The trillion-dollar investment in energy transition included renewables (solar, wind, nuclear), storage, charging infrastructure, hydrogen production, and carbon capture, utilisation, and storage. It also included techs such as small-scale solar, heat pumps, and zero-emission vehicles. Solar and wind power accounted for the most significant chunk of 2022 investments, reaching US$495bn, a 17 percent increase from the previous year.

But electric vehicles (EVs) came in close behind, with US$466bn, and the amount invested worldwide is growing far faster, at 54 percent. Nearly half of all global energy transition investments were in China (US$546bn), while the US came in second at US$141bn.

Read in Detail

6. Reserve Bank of India to Auction Green Bonds Worth □160bn

The Reserve Bank of India (RBI) will auction □160bn (US$1.93bn) worth of sovereign green bonds in two tranches in the government's first-ever such debt sale to raise funds to finance clean projects. The RBI will auction 5-year and 10-year green bonds worth □40bn each on January 25 and on February 09 in what will be a uniform price auction.

The proceeds will be used to fund solar power projects, followed by wind and small hydro projects and other public sector projects which help reduce the economy's carbon intensity.

What is it about?

A Green Finance Working Committee, headed by the Chief Economic Adviser V Anantha Nageswaran, will select public sector projects for green financing from those submitted by government departments. Environment specialists and representatives from the Ministry of Environment, Forests and Climate Change will guide the Committee's choice.

The Committee will identify new projects each year and ensure the proceeds from the bond sales are allocated within 24 months from the date of issuance. The investment in green bonds can qualify towards statutory liquidity ratio (SLR), the minimum percentage of deposits commercial banks are required to invest in liquid assets, such as government bonds.

Read in Detail

7. Ministry of Power Notifies Electricity (Amendment) Rules, 2022

The Ministry of Power (MoP) has notified the Electricity (Amendment) Rules, 2022 to further amend the Electricity Rules, 2005.

The MoP has inserted rules for surcharge payable by consumers seeking open access, timely recovery of power purchase costs by distribution licensee, subsidy accounting, resource adequacy, development of hydro power, energy storage system, and implementation of uniform renewable energy tariff for central pool.

What is it about?

The Ministry of Power has substituted rules for resolving disputes wherein the appropriate commission will pass a final order for dispute resolution within 120 days from the date of receipt of the petition in the commission. This may be extended by 30 days for reasons to be recorded in writing. If a final order cannot be issued, for any reason, to be recorded in writing, then an interim order will be issued by the appropriate commission within the prescribed timeline. In case the final order has not been passed by the appropriate commission, within 120 days or 150 days, as the case may be, the aggrieved party may be allowed to make an application to the Appellate Tribunal for appropriate relief.

Read in Detail

8. India's Renewable Energy Sector Ripe for Global and Domestic Investments

India's renewable energy sector, which is on the cusp of another growth spurt driven by the next wave of policies and reforms, offers significant investment opportunities for global and domestic investors, states the latest report by the Institute for Energy Economics and Financial Analysis (IEEFA). The report highlights several sectoral reforms that will attract more investment to clean energy sector companies - the green energy corridor scheme, Production Linked Incentive (PLI) schemes and privatisation of state electricity distribution companies

What is it about?

The report highlights three technologies offering ample space for global investments – battery energy storage systems (BESS), offshore wind, and green hydrogen. It also identifies emerging trends that provide new avenues for investments in India's renewable energy sector. Corporate decarbonisation is a growing trend buoyed by increasing net-zero commitments by Indian companies.

Other important trends include the energy-as-a-service model and hybridising solar and wind power for minimising variability and optimally utilising the infrastructure. It also suggested that the government should incentivise DISCOMs to partner with private counterparts to reduce aggregate technical and commercial (AT&C) losses and bring efficiencies to the sector.

Read in Detail

9. CESL Floats Tender for 4,675 E-Buses Worth □50bn

Convergence Energy Services Ltd., a wholly-owned subsidiary of Energy Efficiency Services Ltd. (EESL) has floated a tender for 4,675 electric buses worth □50bn.

This is the second tender under the National Electric Bus Programme (NEBP) and the third such tender for electric buses, following the tender for procurement of services from 5,450 electric buses, and a recently concluded tender for 6,465 e-buses.

What is it about?

Three states: Delhi, Kerala and Telangana, are covered in this tender and will deploy 2,400, 775 and 1,500 electric buses, respectively. Aiming to accelerate the adoption of EVs and cut down fuel imports, carbon emissions and air pollution, state transport units (STUs) in the three states will deploy the e-buses based on a dry lease.

The tender includes three electric buses: 9-meter standard floor AC, 12-meter low floor and standard floor non-AC, and AC electric buses. These buses will be owned and maintained by service providers for 10 and 12 years while being operated by the STUs.

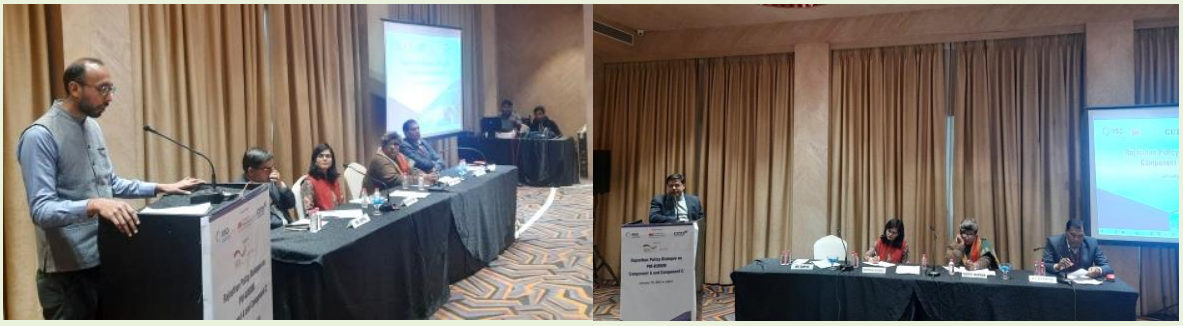
Read in detail

CUTS AT WORK

Consumer Unity and Trust Society (CUTS) and the International Institute of Sustainable Development (IISD) organised the Rajasthan Policy Dialogue to discuss Rajasthan's experience in implementing decentralised solar plants and agricultural feeder-level solarisation under different components of the PM-KUSUM scheme on January 18, 2023.

This policy dialogue's objective was to bring stakeholders from state implementing agencies, private developers, research and financial institutions, and farmer producer organisations (FPOs) in Rajasthan to identify the key technical and financial challenges in implementing PM-KUSUM components A and Component C. The event attracted approximately 40 participants from various stakeholder categories, including Industry, Research Organisations and FPOs.

Anil Dhaka, Managing Director of Rajasthan Renewable Energy Corporation, said that the lack of a subsidy in KUSUM-A is the primary reason why the scheme has not been as successful as anticipated. Himani Mehta, Assistant Director, Ministry of Renewable Energy, said that there is a huge potential and farmers across the country have shown interest, but credit must be given to Rajasthan, which remains the front runner with 63 MW of solar projects under component A and 1,100 solar-powered pumps under component C. NK Gupta, Technical Manager, Rajasthan Renewable Energy Corporation, reiterated that payment security mechanisms had boosted the confidence of banks in financing farmers to set up solar plants.



Read in detail

Power Statistics for January 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					
410.34	235.81	57.51	167.75	40.88	78.52%	18.45%	206.23	205.03	0.6%

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