

# INNOVATING ENERGY



## NEED FOR SWIFT & IMPACTFUL CLIMATE ACTION



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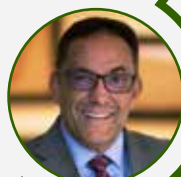
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## **Editor's Note**

Dear Reader,

We have slowly reached a tipping point in our fight against climate change. The 2022 COP conference and the emerging global consciousness around the perils of rising carbon intensive practices marks a shift towards sustainability. In such conditions, this year's World Environment Day gained special prominence. It serves as a clarion call for raising awareness about protecting our environment, especially in the backdrop of the deteriorating ecological conditions.

The theme for World Environment Day this year was "Only One Earth" and it drew our attention towards the fragility of our unique planet and a need to take concerted steps to preserve it. It is now imperative for us to live sustainably in harmony with nature by bringing transformative changes through policies and our choices towards cleaner, greener lifestyles.

In this newsletter, aptly themed, "One earth: Need for swift & impactful climate action" we have invited a myriad of perspectives from leading sectoral experts on how we can mark a conscious shift towards sustainability. The article 'Conference of Panchayats (COP): Moving Towards Locally Led Climate Action' delves into the various ways and appropriate institutional structures to address local needs in a sustainable manner, while discussing the overall developmental agenda. In 'Ethanol: Turning The Energy Matrix Green,' we explore how biofuels and especially ethanol can reduce India's emission intensity and play a key role in helping it meet its climate goals. 'role Of International Cooperation In Building A Sustainable & Energy Secure Future' builds the case for international cooperation in ensuring continued progress and development of coordinated global efforts on sustainable water and energy solutions. In 'a Granular Approach Towards Energy Efficiency Is Now Imperative,' we take a look at Ladakh's sustainability journey and shine the spotlight on the energy efficiency potential of the healthcare sector.

Achieving the desired temperature reduction and goal of a net zero future will require each sector to become green and energy efficient. This would demand multilateral and multi-stakeholder collaboration, adoption and financing of clean energy initiatives, globally. In this newsletter, in the backdrop of World Environment Day, we seek to capture the various facets of climate action and highlight the need for devising swift, scalable and effective clean energy solutions, across sectors.







**Ashish Tiwari (IFS)**

**Secretary, Department of Environment, Forest & Climate Change at Government of Uttar Pradesh**

## **Conference of Panchayats (COP): Moving Towards Locally Led Climate Action**


Climate change is disrupting the achievements of India's development objective and Sustainable Development Goals at large. While climate change is a global concern, its impacts are felt more at the local level and requires solutions catering to the needs of local communities by involving local governance institutions. One big challenge in translating global goals into local action is to find ways and appropriate institutional structures to address local needs in a sustainable manner while addressing the overall developmental agenda. In the Indian context, one of the important stakeholders at the local level are "Gram Panchayats" i.e., village level Panchayati Raj Institutions, responsible for rural development through village development plans (GPDP).

The Government of Uttar Pradesh along with GIZ India under Indo-German Bilateral Cooperation Project - Climate Adaptation and Finance in Rural India (CAFRI) - organised Conference of Panchayats (CoP) to kick start a network of panchayats in order to deliberate on approaches and opportunities to empower Panchayats for climate action. The Conference of Panchayats was organised on the occasion of World Environment Day 2022 on 5th June 2022 at Lucknow, Uttar Pradesh. The event saw participation of more than 40,000 gram panchayats (out of total 58195) and public-private actors.

The objective of Conference of Panchayats 2022, which will be an annual feature of the State Government, was to deliberate on strategies to strengthen capacities of local institutions and actors on emerging climate risks and uncertainties, developing evidence based locally led solutions, and implementing climate initiatives over the long run. The conference agenda was organised into three sessions. The first session focussed on "Mainstreaming Climate Action & Disaster Risk Reduction and Leveraging Financing: Opportunities and Challenges at Gram Panchayat (village council)". The session highlighted the benefits of integrating climate concerns, local development planning process and the entry points for leveraging finance from existing budgetary allocations at local level. It further highlighted the importance of analysing climate data at a smaller administrative scale, like at the Panchayat level to support decentralised planning and participation of local communities.

This was followed by a panel discussion on "Climate Resilient Actions in Uttar Pradesh: Panchayat-Private-Partnership (PPP). In order to scale up investments for climate action it is important to have private sector onboard and this session focussed on ways and means to strengthen partnerships between private sector and Panchayats on scaling up climate action. Further, deliberations focused on the important role private sector can play in helping local bodies such as Gram Panchayats to translate the global and national goals on climate and development of local level. With the overall aim on how partnerships between different countries and actors can shape the global agenda while supporting local action, the last session was titled "Global Partnership for Local Action."





The Conference of Panchayats 2022 also witnessed the launch of the framework for risk integrated gram panchayat development planning— Road to Resilience 2030— jointly developed by Department of Environment, Forest & Climate Change, Government of Uttar Pradesh, GIZ India and Gorakhpur Environmental Action Group (GEAG). The framework provides for participation of local governance institutions and local actors including women groups for need based climate adaptation planning at village level.

While addressing the gathering, Honourable Chief Minister of Uttar Pradesh - Shri Yogi Adityanath stressed on the importance of gram panchayats towards ensuring a green, clean and a healthy environment and said that any goal can only be achieved if the government's vision reaches the villages.

As a next step, the Government of Uttar Pradesh will be engaging with Panchayats to pilot the framework and develop village level climate action plans to establish 27 climate resilient Panchayats from 27 highly vulnerable districts in the State that encompass local climate, disaster and SDG goals and challenges.





**Eduardo Leão de Sousa**

**Executive Director, UNICA**

## **Ethanol: turning the energy matrix green**

A global consensus is emerging on the need to transition from traditional fossil fuels to cleaner, greener alternatives. Nations across the world are working on a viable policy roadmap to usher in this shift, with the aim to mitigate the effects of climate change and decarbonize our future. Biofuels are now increasingly being viewed as the fuel for the future.

Countries are making individual and collective efforts to promote and adopt sustainable practices such as energy efficiency and low-carbon sources, with the aim of mitigating global warming and urban pollution. As they do this, they should ensure that the low-carbon development pathways should also have positive social and economic impact.

Brazil started along this path a few decades ago with ethanol, which proved to be one of the most efficient agents for decarbonizing the energy mix.

The sugarcane sector is one of the richest examples of this trend in the global economy, given that from sugarcane everything can be reused. In addition to sugar and ethanol produced from sugarcane juice, we also produce electricity from bagasse, which already represents 5% of Brazil's energy consumption. The treated vinasse returns to fertilize the fields and, together with other production residues, such as filter cake and sugarcane straw, also produces biogas for electricity, and biomethane, which replaces diesel in agricultural machinery and trucks. Sugarcane is therefore a source of renewable energy to feed our bodies, move cars and trucks, light our homes and run our factories.

India too has undertaken several initiatives over the years towards its goal of net zero emissions as part of its Paris COP21 commitments. It has been successful in driving the growth of renewable energy and is now looking at other ways to curb emissions, one of which is to produce ethanol on a large scale. India has the potential to become one of the major ethanol producers in the world due to the large quantities of sugarcane that is grown in the country.

In the midst of these efforts, on the World Environment Day, India has achieved another milestone, announced by the Honourable Prime Minister Shri Narendra Modi : India has achieved the target of 10% of ethanol blending in petrol, five months ahead of its schedule.

Brazil and India can collaborate with each other to usher in a sustainable energy transition while achieving decarbonization, social development and environment protection. Knowledge exchange should also encompass public policies, sustainable practices, and the lessons learned so far. By strengthening trade and investments in the business and infrastructure of biofuel production, we can build greater momentum towards our respective climate commitments and the transition to carbon-neutral economies.

Biofuels, especially ethanol has tremendous potential to reduce India's emission intensity and play a key role in helping it meet its climate goals. With its relative abundance and availability, along with remarkably low emissions, ethanol makes a strong case for becoming an integral part of India's energy mix.







**SAITO Mitsunori**

**Chief Representative, JICA India Office**

## **Role of international cooperation in building a sustainable & energy secure future**

We are witnessing the formation of a global consensus in combating climate change. Organizations and agencies from across the world are working towards ushering in a sustainable and greener tomorrow, with an array of climate projects in the pipeline. There has also been an increased collaboration between the nations and the agencies, who are working in a mutable, geographically agnostic ecosystem. The COP26 conference in Glasgow was a key steppingstone towards the formulation of global alliances that can help in building cross-border clean energy mechanisms.

International cooperation is imperative to ensure the continued progress and development of coordinated global efforts on sustainable water and energy solutions. It is also critical to create widespread awareness and disseminate knowledge on the advantages of such a coordinated and integrated approach.

Large-scale water and energy projects, that transcend borders to benefit people in multiple nations will be the key going forward. For example, interconnections of power grids can play a significant role in balancing structural differences or temporary fluctuations in renewable power generation, demand and supply. It can also enable efficient, sustainable and climate friendly usage of the available energy resources. Countries have general requirements for improved air quality and reduced emissions and pollution. International energy cooperation and governance must adapt to these new changes; promote the transition to clean, low-carbon, efficient and secure global energy; and drive high-quality development of global energy.

Thus, it is amply clear that international cooperation is critical to achieving global energy objectives. For us to combat the global challenge of enhancing energy security and decarbonizing the energy sector, governments have to look beyond unilateral decision making.

Regional cooperation, both within India and involving other countries, has now become especially pivotal, as it can enable technical, financial and research cooperation to help facilitate cross-border renewable energy transfer projects. For example, JICA is conducting a survey on cross-border electricity trade (CBET) in Bhutan, Bangladesh, India, and Nepal to identify opportunities to facilitate a cross-border power transmission line. Several recommendations for desirable modalities (Long-term PPA, electricity trading market, etc.) and steps to formulate CBET projects will be provided as an outcome of the survey. This will hasten the creation of a global ecosystem of interconnected renewables. Such trans-national projects, supported by multilateral organizations and global financial institutions can be true gamechangers.

Further, to support ambitious transition needed for India's net-zero target in 2070, decarbonization of thermal power plants by introducing ammonia co-firing, grid stabilization measures for mass introduction of variable renewable energy (VRE), optimization of power distribution system operation, and improvement of energy efficiency in industrial sector are the required focus areas of assistance in energy sector.





**Dr. Iftakhar Ahmed Chowdhury (IRS)**

**Add. Secretary, Health & Medical Education  
Department, Ladakh**

## **A granular approach towards energy efficiency is now imperative**

Energy efficiency is increasingly being acknowledged as the catalyst in keeping the burgeoning energy demand in check. Efficiency of energy use through innovative interventions is now more pivotal than ever before.

We have already seen remarkable efficacy of integrating energy efficiency solutions into the energy mix. In fact, according to International Energy Agency (IEA), energy efficiency improvements in India since 2010 have prevented 12 percent of additional energy use.

India's commitment to achieve net zero emissions by 2070 and to meet 50 percent of its electricity requirements from renewable energy sources by 2030 is significant for our collective global fight against climate change. India is pioneering a new model of economic development that could avoid carbon-intensive approaches that many countries have pursued in the past and provide a blueprint for other developing economies. To achieve these targets, Energy Efficiency has become imperative for India.

The scale of transformation in India is impressive. Its economic growth has been among the highest in the world over the past two decades, uplifting millions of people out of poverty. Every year, India adds a city the size of London to its urban population, involving vast construction of new buildings, factories, and transportation networks. Coal and oil have so far served as bedrocks of India's industrial growth and modernization, giving a rising number of Indian citizens access to modern energy services. This includes adding new electricity connections for 50 million citizens each year over the past decade.

Ladakh is one among few States and Union Territories, having set the target for becoming Carbon Neutral in near future. This target was set by Honourable Prime Minister of India Shri Narendra Modi during his Independence Day speech on 15th August 2020. Since the PM's announcement of a carbon-neutral Ladakh, various initiatives and projects in this direction are being undertaken by UT Administration such as installation of solar cooking device in households, promoting construction of solar passive buildings, sustainable home stay tourism, introduction of electric vehicles and solar powered charging stations, focus on drip irrigation and other energy efficient methods of micro-irrigation such as ponds to maximize the use of existing water resources etc., are being planned and worked out.

The healthcare sector, with its extensive energy usage and hitherto untapped potential for energy conservation measures, presents an ocean of opportunity for energy savings and emission reduction. What we need now is a mindset shift from the industry towards adopting energy efficiency measures.

India's healthcare industry has been growing at a brisk rate of around 22 percent since 2016. Healthcare has become one of the largest sectors in the Indian economy, in terms of both revenue and the employment opportunities generated. The rising investment in the sector has seen the development of state-of-the-art healthcare infrastructure, modern equipment, and technologies.





We have already seen the emergence of super-specialty hospitals across the country, especially in the metro cities. Conversely, these developments have also created the conundrum of high energy-intensiveness in the healthcare sector in India.

This rising energy intensiveness is bound to strain India's power sector substantially in the coming years, along with its ambitious climate goals. Many hospitals still rely heavily on diesel power generation to maintain their critical facilities in time of power cuts or fluctuations.

This presents an array of energy conservation opportunities, which have remained largely untapped due to several reasons. The key constraints have been two-fold: Low awareness among the management of the hospitals and lack of in-house expertise in implementing energy saving projects. Creating and building good energy management can foster the creation of an energy efficient culture within the hospital that can usher in a reduction in energy costs, without compromising on the quality of health care offerings to the patients. What needs to be done is to raise the level of awareness on energy efficiency among the hospital administrators and managers and inspire them to initiate and implement energy conservation programmes in their facilities.

A sharpening of focus on policy and budgetary towards healthcare, especially in developing the infrastructure and buildings of healthcare facilities can reap great benefits. It would enable a marked reduction in energy usage, along with mitigating emissions, which will be critical in combating the adverse effects of climate change. The healthcare sector has a vital role to play in building a sustainable future for our country.

The expansion of healthcare facilities in Ladakh after creation of new Union Territory in August 2019 is one of the most prominent development initiatives being undertaken. The Health & Medical Education Department, UT of Ladakh has also planned to switch to energy efficient alternatives and are in the process of finalizing different modalities in this regard.



# Top energy trends from India & across the globe

## India ranks 3rd globally for total renewable additions in 2021: Report

India ranked third globally for total renewable power capacity additions with 15.4 GW in 2021, following only China (136 GW) and the US (43 GW), according to REN21's Renewables 2022 Global Status Report (GSR 2022). The report sends a clear warning that the global clean energy transition is not happening, making it unlikely that the world will be able to meet critical climate goals this decade. According to the report, India added 843 MW of hydropower capacity in 2021, raising the total capacity to 45.3 GW. India was the second largest market in Asia for new solar PV capacity and third globally (13 GW of additions in 2021). It ranked fourth for total installations (60.4 GW), overtaking Germany (59.2 GW) for the first time. India ranked third globally for the total installed capacity of wind power (40.1 GW), behind China, the US and Germany.

## The value of urgent action on energy efficiency

The IEA Net Zero Emissions by 2050 Scenario (NZE) sees the average annual rate of global energy intensity (i.e., energy use per unit of GDP) improvement as a key measure of the economy's energy efficiency - doubling from around 2% achieved between 2010-2020 to just over 4% from 2020-2030. With accelerated action, the global economy by 2030 could be around one-third more energy efficient than in 2020. The current challenges regarding energy security, energy prices and the cost of living have intersected with the climate crisis to remind us that energy efficiency is more indispensable than ever. The cleanest, cheapest, most reliable source of energy is what countries can avoid using, while still providing full energy services for citizens. That is why the IEA refers to energy efficiency as the "first fuel". Without early action on efficiency the energy transition to net zero emissions will be more expensive and much more difficult to achieve.

## Europe faces 'scramble' to replace dwindling Russian energy: IEA

Europe must race to replace sanctioned and curtailed Russian energy supply and should double down on efficiency and renewables, including nuclear power, the International Energy Agency (IEA) reported. Gas prices have hit record levels as a slowdown in flows from Russia in recent days has deepened worries over supply in higher-demand winter months. "In the near term, the scramble for alternative sources of fossil fuels creates clear openings for non-Russian suppliers," the Paris-based watchdog said in its report on investment. Europe must react to the crisis "with a determined acceleration of investment in efficiency, renewables and other clean technologies," it added.



## India needs \$223 billion to meet 2030 renewable capacity goals: Report

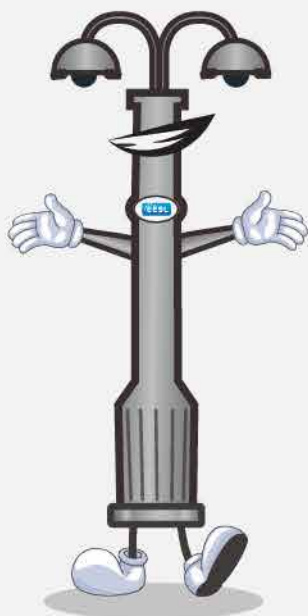
India will need \$223 billion of investment to meet its goal of wind and solar capacity installations by 2030, according to a new report by research company BloombergNEF (BNEF). The government has set a target of increasing non-fossil power capacity to 500 GW by 2030. It wants non-fossil fuel power sources to provide half of its electricity supply by 2030. By 2021, 165 GW of zero-carbon generation had already been installed in the country. Central Electricity Authority forecasts that the country's reliance on coal to drop from 53 per cent of installed capacity in 2021 to 33 per cent in 2030, whereas solar and wind together make up 51 per cent by then, up from 23 per cent in 2021.

## Shell, the oil giant, will sell renewable energy to Texans

Shell would begin selling electricity generated from renewable sources to residents and businesses in Texas, a move that brings the European oil company's shift to green energy to the U.S. market. The announcement underscores a widening gulf between the strategies of European and U.S. oil companies as elected leaders and consumers demand that the energy industry do more to tackle climate change. European businesses including Shell, BP and TotalEnergies are seeking to expand into renewable energy, electric vehicle charging and other fast-growing businesses as U.S. companies like Exxon Mobil and Chevron mostly keep their focus on oil and gas while investing in capturing carbon from industrial plants and biofuels.



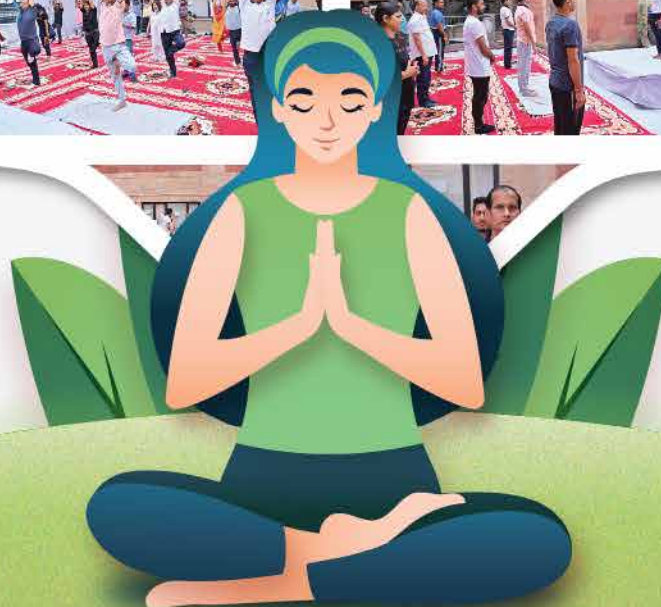




## STREET LIGHTING NATIONAL PROGRAMME (SLNP)



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