

INNOVATING ENERGY

Energy Efficient Solutions for the Future



FOR EDITORIAL DETAILS AND ADVERTISEMENT ENQUIRIES

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EDITOR'S NOTE



Animesh

CGM and Head (PR & Sales)

Dear Reader,

The arrival of the monsoon has given welcome respite from the sweltering heat that most parts of India experienced this summer. The summers are getting hotter – a sign that global warming is approaching alarming levels and must be curbed through immediate, decisive, worldwide action. When I say worldwide, I mean every nation, government, institution, industry, organization, and individual on earth. Each of us, whether we realize it or not, contributes to greenhouse emissions every day. Therefore, it is in our hands to reduce it.

It starts with something as simple as replacing the ceiling fans we use with energy-efficient variants. In a country with a largely warm and humid climate like ours, the use of ceiling fans is almost indispensable throughout the day. Unsurprisingly, ceiling fans contribute to a huge percent of India's residential electricity consumption. Replacing these fans with energy-efficient fans will go a long way towards reducing electricity consumption, yielding savings on electricity bills, and reducing the amount of fossil fuels used to generate electricity.

Similar benefits can be gained by replacing the CNG cooking stoves in our kitchen with energy-efficient induction cookers. In rural and tribal areas that do not yet have reliable, round-the-clock electricity supply, there is the option of using solar-based induction cookers. Naturally, these cookers need to be affordable and accessible to ensure wide-scale adoption. It is one of the many things that we, EESL, are focusing on.

How we travel short-to-medium distances in our daily lives is yet another important factor that determines our carbon footprint. It is easy to see that using public transportation instead of private vehicles will help in reducing traffic congestion, pollution, and fuel consumption. More and more people are starting to buy electric scooters; this is a very positive trend and must be encouraged. We are also seeing the advent of e-bicycles, and while it is still early days, it isn't hard to imagine them becoming popular across cities for their environmental and health benefits.

In this newsletter, we shall delve deeper into these trends and about the initiatives that are underway to make them popular, accessible, and affordable among the masses. Awareness triggers intent; intentions guide actions; and actions yield results. Being aware of the need for energy efficiency and the solutions available for achieving it is the first and very important step in helping our country meet its environmental goals. By walking that path, we will make our own lives healthier and more sustainable along the way.



Accelerating the adoption of energy-efficient fans in India

Ashish Malviya

DGM, EESL

As the effects of climate change continue to manifest globally, the demand for cooling solutions in India is projected to surge dramatically. Unfortunately, this escalating demand places a significant burden on electricity systems and contributes to higher greenhouse gas emissions. However, there is a viable solution that can expand access to cooling while mitigating environmental impact: the widespread adoption of energy-efficient and climate-friendly cooling appliances.

In India, almost 90% of households heavily rely on fans for cooling and ventilation purposes. Astonishingly, ceiling fans alone accounted for approximately 40% of India's residential electricity consumption in 2021. It is projected that this figure will remain substantial at 32% by 2030. Given the popularity of ceiling fans, with nearly 40 million units sold annually, there exists a massive opportunity to reduce energy demand by promoting the use of energy-efficient and affordable fans for thermal cooling and ventilation.

Recognising the rising energy consumption associated with fans, the Bureau of Energy Efficiency (BEE) took a significant step by mandating the Standards and Labeling (S&L) programme for ceiling fans in India. This pioneering initiative aims to enhance the overall energy efficiency of ceiling fans available in the market. With the policy framework firmly in place, the next crucial step is to encourage the widespread adoption of efficient ceiling fans. By transitioning the entire stock of residential ceiling fans and the annual market towards super-efficient models, India could save a remarkable 15% of its residential power consumption each year.

To drive this much-needed market transformation, Energy Efficiency Services Limited (EESL) plans to deploy 10 million energy-efficient fans in the Indian market. EESL, in collaboration with the Collaborative Labeling and Appliance Standards Program (CLASP), recently organised a workshop aimed at accelerating the adoption of energy-efficient fans in India. This workshop brought together a multitude of stakeholders, including government agencies, civil society organizations, fan manufacturers, fan manufacturer associations, retailers, and more, to facilitate knowledge sharing and insights on how to expedite the adoption of energy-efficient fans and enable market transformation in India.

EESL has consistently shown dedication towards encouraging the adoption of energy-efficient appliances. LED bulbs, tube lights, and high-performance fans have already been the focus of their initiatives. Notably,

ceiling fans alone contribute to approximately 40% of total residential electricity consumption, which accounts for over a quarter of India's overall electricity usage. By replacing all existing ceiling fans with the most efficient models available today, it is estimated that nearly 20% of total residential electricity consumption can be diminished. EESL aims to capitalize on this enormous potential for savings by deploying 10 million energy-efficient ceiling fans across India.

Through these concerted efforts, EESL aims to address the dual challenges of meeting the growing cooling demand and reducing the carbon footprint associated with energy consumption. By promoting the adoption of energy-efficient fans, not only can substantial energy savings be achieved, but it will also pave the way for a more sustainable and environmentally conscious future.

The workshop organised by EESL and CLASP played a crucial role in uniting various stakeholders and fostering collaboration towards this common goal. The participants shared their views, experiences, and insights on how to overcome barriers to adoption, increase consumer awareness, enhance manufacturing capabilities, and create supportive policies. By pooling resources and knowledge, these collective efforts can unlock the immense potential for energy savings in the cooling sector, leading to a greener and more efficient India.



Electric cycles: The next frontier of sustainable mobility in India



The landscape of transportation in India is undergoing a remarkable transformation, driven by the rising demand for electric vehicles. Green Mobility' is one of the key transformation areas expected to reduce carbon intensity, achieve energy transition, and provide large-scale job opportunities. One of the key interventions to drive green transition for the economy is by promoting a mix of more energy efficient modes of transportation and improving efficiency of existing modes.

Sustainable Micro Mobility solutions would play a crucial role in reshaping the mobility paradigm by reaching the last mile. While electric scooters have garnered significant attention, e-bicycles are gradually emerging as a preferred option for intra-city mobility. E-bicycle is the eco-friendly alternative for the large population using ICE two-wheeler/ public transportation (shared) offering a high-quality seamless journey to the commuter.

In Tier 1 cities, the demand for e-bicycles is growing faster, with sales in India rising at a double-digit yearly pace as compared with the previous years. The market for electric bicycles is expected to develop rapidly, due to increased demand leading to many companies entering the market. E-bicycles may be the preferred mode of transportation soon as they allow consumers to cruise through rough ground, which is otherwise very hard to navigate without an electric motor.

One of the key advantages of e-bicycles is their low upfront cost in comparison to e-scooters. This affordability factor, coupled with low cost of running—estimated to be in the range of 10-15 paisa per kilometer—makes it an incredibly cost-effective choice for short distance commute applications. Additionally, they are also exempt from license and registration requirements. Electric bicycles offer ease of use and are low maintenance resulting in a hassle-free ownership experience.

The potential of the Indian e-bike market is immense, with recent projections indicating that it will reach a value of US\$ 2,113 million by 2028. The demand for e-bicycles in cities is gradually picking up, reflecting a shift in consumer preferences towards sustainable transportation options. Recognising this trend,

numerous companies have entered the market to cater to the rising demand. In recent times, E-bicycles are witnessing popularity amongst youngsters in metro cities such as Delhi where E-bicycles are available as a service. An increasing number of cycling enthusiasts are switching to electric cycles, utilising them for leisure activities as well as to enjoy the associated health benefits.

However, it is in rural areas where e-bicycles hold immense potential to revolutionise the switch towards green transportation. Inhabitants of rural areas, especially women working in self-help groups, factories, manufacturing units, and school children, often rely heavily on public transportation due to the lack of viable options for personal mobility. Furthermore, public transport in low-density rural areas tends to be very limited or unavailable. It is here that electric bikes can play a critical role, by providing a reliable mode of transportation to the commuter.

E-bicycles shall provide a useful addition/ alternate to available transport modes in rural areas by combining the assets of active modes (e.g., health benefits, flexibility, enjoyment) with those of motorised modes (e.g., range, speed, comfort). As such e- bikes may support more sustainable rural mobility in terms of increased accessibility, health, and environmental benefits

Despite these potential benefits however, e-bicycle use in rural areas has received limited attention. Developing e-bicycle mobility in these areas can support more healthy and sustainable rural mobility. Various mobility surveys conducted among rural residents have shown that conventional bicycle is already used among a broad population of varied ages and backgrounds and for different purposes. And it is time to test the potential of e-bike use in rural areas.

To unlock the full potential of e-bicycles in rural India, addressing the issue of higher upfront costs compared to conventional cycles is paramount. EESL is keen to implement faster adoption of sustainable micro-mobility solution through Electric Bicycles in India. The programme would not only synergistically support the “Reaching the Last Mile” priority of the Government of India but also intends to empower the rural and semi urban India by providing them access to Green Mobility.

As part of the efforts to promote electric-bicycles, EESL showcased electric bicycles at the Kerala Legislative Assembly and the Energy Management Centre on the occasion of World Environment Day. Additionally, an awareness session on energy efficiency and renewable energy was also organized for around 250 students of MGM School.

E-bicycles is observed as a practical and environmentally friendly solution for intra-city mobility, particularly in rural India. By gaining support from State governments and priority groups such as self-help group, start-up village entrepreneurship programmes, rural livelihood missions, and healthcare workers, the initiative undertaken by EESL holds the potential to create a win-win situation for all stakeholders. This endeavor has the power to bring about a market transformation in the electric bicycle segment, empowering the nation with an affordable and sustainable means of transportation.



Electric cooking

A sustainable and convenient cooking solution for India

Abhishek Gupta

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Project Evaluation & Assessment



India has the incredible opportunity to build a thriving ecosystem for clean cooking, thereby reducing indoor air pollution considerably. A substantial portion, ranging from 20% to 50% of India's ambient air pollution is attributed to indoor cooking and heating practices. Traditional methods, like the burning of cow dung and firewood, not only harm the environment but also endanger human health. However, amidst these challenges lies a pressing call for a cleaner and more sustainable fuel source for households. Electric cooking has emerged as a remarkable solution that promises to revolutionize the way we cook and ignite a healthier, greener future.

Recognizing the immense potential of clean cooking solutions, the Government of India has launched several initiatives, including the Pradhan Mantri Ujjwala Yojana (PMUY) in 2016, as well as the promotion of piped natural gas (PNG) and electric cooking under the "Go-electric" campaign in 2021. Despite these efforts, approximately 442 million people in India still lack access to clean cooking solutions. This not only results in trillions of dollars in damage to the climate and local economies but also causes an alarming 0.8 million premature deaths annually. To combat this, further initiatives are needed to promote clean cooking on a larger scale. It is pertinent to note that clean cooking is amongst the few initiatives which have the potential to address 10 out of 17 Sustainable Development Goals (SDGs) namely 1. No Poverty; 2. Zero Hunger; 3. Good Health & Well-Being; 4. Quality Education; 5. Gender Equality; 6. Clean Water and Sanitation; 7. Affordable and Clean Energy; 10. Reduced Inequalities; 13. Climate Action; 15. Life on Land

The promotion of electric stoves as a viable alternative to traditional cooking methods requires a multi-faceted approach. First and foremost, there is a need for research and development to create energy-efficient and low-cost electric cooking devices that cater to the diverse needs of Indian households. Additionally, suitable financing solutions must be made available to ensure affordability and accessibility for all segments of society. Furthermore, reliable electricity services are essential to support the widespread adoption of electric cooking.

India's clean cooking journey necessitates the proliferation of electric stoves, with future power demands being met by renewable sources such as solar energy, bolstered by battery storage. The convergence of solar power, battery storage, and electric cooking will be pivotal in completely decarbonizing India's cooking energy use in the long run. By leveraging these sustainable technologies, the country can significantly reduce its carbon footprint and mitigate the adverse effects of indoor air pollution.

To address the growing demand for energy-efficient and environment-friendly cooking appliances, Energy Efficiency Services Limited (EESL) has made commendable strides in the cooking solution space. In the financial year 2024, EESL plans to distribute 20,000 electric induction cook stoves to community

centres, anganwadis, and other states, with a particular focus on regions like Ladakh and the Northeast. Additionally, EESL aims to launch solar-based induction cooking solutions for rural and semi-urban households, starting with the pilot phase that will see the distribution of 1 lakh Solar-Induction Cooking Systems (SICS) to intended households. Recognizing the importance of energy-efficient solutions, EESL also intends to market 20,000 electric pressure cookers in the same fiscal year.

These initiatives by EESL encompass a wide range of societal segments, catering to the aspirations of the middle class and upper middle class, as well as those under the poverty line. Under this ambitious initiative, individuals with solar rooftops will be provided with multi-burner solar induction cookstoves. This marks a significant transition from traditional LPG/PNG cooking methods to the utilization of clean and renewable solar energy. Similarly, the programme extends its reach to the BPL/rural population, facilitating a shift from biomass-based cooking to single-burner solar cookstoves. Recognizing the unique needs of urban and semi-urban areas, EESL aims to introduce electric cookers with coil-like electric kettles.

With this comprehensive approach, EESL is not only enabling a complete transformation from conventional cooking methods but also providing cutting-edge technology. This commitment to embracing cutting-edge technology while addressing diverse cooking needs highlights EESL's efforts towards building an inclusive and sustainable cooking environment in the country.

In line with these efforts, a recent workshop organized by the Bureau of Energy Efficiency (BEE) in collaboration with the Collaborative Labelling and Appliance Standards Programme (CLASP) sought to drive stakeholder dialogue on transitioning to electric cooking. The workshop emphasized that electric cooking is a key pathway towards achieving "Mission Life," which aims to transform individuals into eco-warriors who adopt sustainable lifestyles.

By embracing energy-efficient electric cookstoves, India can secure both long-term and short-term energy security in a cost-effective manner. With the collective efforts of the government, organizations like EESL, and public awareness, electric cooking can revolutionize India's cooking sector, drastically reduce indoor air pollution, and pave the way for a sustainable future for all.



Top Energy Trends from India and across the globe



Global Oil demand growth to slump, peak in sight as clean energy transition accelerates: IEA Report

The International Energy Agency (IEA) forecasts a significant slowdown in global oil demand growth as the world approaches a peak in consumption. In its "Oil 2023 medium-term market report", IEA attributed the deceleration to high prices and concerns over the security of oil supplies, which have expedited the transition toward cleaner energy technologies. According to the report, global oil demand is expected to rise by 6% between 2022 and 2028, reaching 105.7 million barrels per day (mb/d). The growth will be supported by strong demand from the petrochemical and aviation sectors. However, annual demand growth is projected to diminish from 2.4 mb/d this year to just 0.4 mb/d in 2028, indicating an approaching peak.

Consumers can now save up to 20% in electricity bills with the new tariff rule

The Government of India has introduced two changes to the prevailing power tariff system and now across the country consumers can save up to 20 per cent in power bills by planning usage during solar hours or daytime as the government is set to implement a 'time of the day' tariff. The Government of India has introduced two changes to the prevailing power tariff system, through an amendment to the Electricity (Rights of Consumers) Rules, 2020. The changes are the introduction of the Time of Day (ToD) Tariff, and the rationalization of smart metering provisions, the Ministry of Power said.



India to produce 55 million tonnes of green hydrogen in 2050

India will produce about 55 million tonnes of green hydrogen in 2050. However, due to a slower demand uptake profile, the country will remain a marginal importer in the coming decade, said the latest report by Deloitte. According to the report titled 'Green Hydrogen in energizing the path to net zero' Europe, China, and India can produce substantial amounts of hydrogen but are also likely to rely on imports throughout the transition. It said that the interplay between demand and supply for hydrogen is stark in the case of India and is based on the assumption that India will undertake accelerated decarbonisation of its industrial and transportation sectors using hydrogen.

World not on track to reach Sustainable Energy Goals, says Report

A joint report prepared by organisations including the World Bank and World Health Organisation (WHO) has observed that the world is not on track to achieve sustainable energy-related goals set by the UN in 2015. The report titled 'Tracking SDG 7: The Energy Progress Report 2022' is prepared by the International Energy Agency, the International Renewable Energy Agency, the United Nations Statistics Division, the World Bank and the WHO. Sustainable development goal (SDG) 7 is one of 17 such goals set by the UN in 2015 as part of a world vision and aims to "ensure access to affordable, reliable, sustainable and modern energy for all" by 2030. The report also highlighted that India was responsible for the world's second-largest increase in consumption of non-renewable electricity, and offset progress made by other countries in moving towards renewable alternatives.



Spain's energy firms look to central Europe markets for green hydrogen deals

Spanish oil company Cepsa (CPF.GQ) signed two agreements aimed at shipping green hydrogen between Spain and the Netherlands, a day after renewable energy giant Iberdrola (IBE.MC) took a similar step. The two Spanish companies are vying to become green hydrogen leaders, with planned investments worth billions of euros. The recent agreements will help them sell part of their expected production of green hydrogen and derivatives to industrial customers eager to decarbonise in Europe's economic powerhouse, Germany, and neighbouring countries via the Netherlands.

Germany hails EU deal on renewable energy raising target for 2030 to 45%

Germany's economy minister welcomed a deal Friday among European Union countries to increase by more than a third the bloc's renewable energy target for 2030. Representatives of the 27 member states approved a package raising the current goal of 32% to 45% by 2030. About 22% of the EU's total energy consumption came from renewables in 2021, meaning the new target will double the amount in less than a decade. The deal includes a number of exceptions to cover the interests of various member states, including specific clauses on hydrogen production.



Monthly Highlights

EESL India @EESL_India · Jun 21

We conducted a rejuvenating **#yoga** session for all employees in collaboration with National Yogasana Sports Federation today. It was a perfect opportunity to unwind, relax & connect with our inner selves **#InternationalYogaDay @Yogasanaindia @drjaideeparya @uditsheth @Worldyogasana**



PMO India

EESL India @EESL_India

Pleased to share that we have been awarded Elets National Energy Awards '23 in the 'Energy Efficiency & Reliability' category. It was an honour to receive this recognition from Hon'ble Minister of New & Renewable Energy Sources, Punjab Govt. Shri **@AroraAmanSunam**



EESL India @EESL_India

Thrilled to announce that our CEO Mr **@vishalkapoor91** has been recognised among the 'Top EV Charge Leaders' by **@EMobility_Plus** at **#EVChargeIndia2023**! His visionary leadership has been the driving force for our organization to accelerate India's journey towards **#sustainability**



EESL India @EESL_India · Jun 20

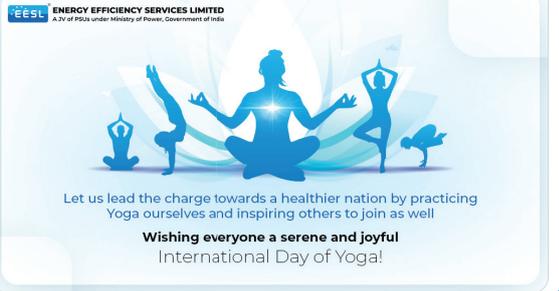
Get ready to unroll your mat and embrace the experience of **#Yoga**! As we approach **#WorldYogaDay**, let's prepare to embark on a journey of self-discovery, inner peace, and physical well-being. **#healthylifestyle #YogaForHealth @MinOfPower @MinOfCultureGol @CEO.EESL**



Together, let's shape a healthy future for ourselves by embracing Yoga as an essential element of our **everyday routines**

EESL India @EESL_India · Jun 21

Let's flow together towards harmony, peace, and well-being, as we celebrate the day of our yogic heritage. Let's embrace the power of stillness by breathing in positivity & giving out the warmth of our inner light. Happy **#InternationalYogaDay2023 @MinOfPower @MinOfCultureGol**



Let us lead the charge towards a healthier nation by practicing Yoga ourselves and inspiring others to join as well

Wishing everyone a serene and joyful International Day of Yoga!



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