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Unlocking the international potential for Energy Efficiency

The world is witnessing a consensus around combating climate change. Organisations and agencies from across the globe are working to usher in a sustainable and greener tomorrow by deploying an array of climate projects. There has also been increased collaboration between nations and agencies, who are working together in a geographically agnostic climate action ecosystem. The Paris Agreement in 2015 identified improvement of energy usage efficiency to be a vital cog in the climate action mechanism. Various organisations are sharing expertise across borders to help develop the global market for energy efficiency. Energy efficiency has already permeated a host of sectors and industries in countries across the world, such as transport, building, power and lighting amongst others. It has led to considerable reduction of emissions, along with significant energy and capital savings.

According to International Energy Agency estimates, the Net Zero Emissions by 2050 Scenario involves more than 40 energy efficiency milestones without which total final energy consumption would be around 30% higher by 2030. A major challenge for accelerating the penetration of energy efficient technologies in any country is the high upfront cost. Demand aggregation is often considered as an important strategy to significantly enhance volumes, improve economies of scale and reduce the upfront cost in the process. Bundling demand allows for bulk procurement in public sector institutions and markets, which hold significant potential for improved energy efficiency and represents a large and important market in all countries

There has been a myriad of innovative implementation mechanisms, financing structures and associated institutional frameworks and delivery models that have addressed the barriers in demand side energy efficiency markets. Many of these have been adapted and implemented across the world. Energy efficiency offers significant win-win opportunities, especially for labor-intensive projects that start quickly and are rooted in local supply chains such as construction and manufacturing. It can also provide long-term benefits by lowering overall electricity demand, thus reducing the need to invest in new electricity generation and transmission infrastructure. It also helps diversify utility resource portfolios and can be a bulwark against uncertainty associated with fluctuating fuel prices. Energy efficiency brings other major benefits, as it improves the economic competitiveness of countries and businesses, makes energy more affordable for consumers

Energy Efficiency Services Limited (EESL) India has been leading the way, as an enabler of energy efficient technologies, working closely with various nations to replicate its successful domestic initiatives globally. It has a proven track record of forging new frontiers in the global energy efficiency services markets across the world. The company has taken its market transformation models to the UK, Middle East, South Asia and South-East Asia. The international potential for energy efficiency is vast and relatively untapped. EESL, with its experience, strength and capabilities in the Indian market can help other nations realise their energy efficiency potential.

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What 2022 heralds for India's energy efficiency segment

India has come a long way as a manufacturer and consumer of power since it gained independence 75 years ago. We now have an even more challenging journey ahead of us in the next 50. India, as we know, has committed to achieving net-zero emissions by 2070, reducing carbon intensity to 45 percent of current levels by 2030, and reducing carbon emissions by 1 billion tonnes, also by 2030. Energy efficiency is one of the very important ways in which India can achieve these closely interrelated targets.

Energy efficiency can accelerate progress on India's climate actions by reducing the amount of energy needed across industries and sectors. It can reduce both the amount of energy needed as well as the capacity and cost of the low-carbon energy systems that are installed to meet the energy demand. Moreover, improvements in the energy efficiency of commercial, residential, and industrial establishments can yield a huge reduction in emissions.

EESL, which celebrates its 12th anniversary this year, has pioneered and guided many of India's energy efficiency programmes. These programmes have yielded tangible benefits in terms of energy savings, cost savings, and emission reductions, and will continue to grow from strength to strength in 2022 and beyond.

Bringing energy efficiency to an important yet vulnerable sector like agriculture

The resilience and growth of India's agriculture sector can be improved, among other ways, by providing farmers with energy-efficient, easy-to-operate farming tools. EESL, through its Agriculture Demand Side Management (AgDSM) programme, distributes BEE 5-star energy-efficient agricultural pumps that ensure at least 30% reduction in energy consumption. These pumps come with smart control panels and can be operated remotely.

Making living spaces healthier and more energy-efficient

The environmental impact of residential and commercial buildings, which account for a significant percentage of the country's electricity consumption, will come under close scrutiny in the years ahead. EESL's Buildings Energy Efficiency Programme (BEEP) transforms commercial buildings in India into energy-efficient complexes. Till date, EESL has covered more than 10,460 buildings, including railway stations, under this programme. BEEP has yielded energy savings of more than 696.45 million kWh and cost savings of more than Rs 60,164 lakh till date. It has avoided energy demand to the tune of 75.64 MW and reduced CO_2 emissions by more than 571,096 tonnes.

The air conditioning systems in old buildings are often not designed for high levels of ventilation or filtration. Retrofitting these systems allows us to integrate energy efficiency measures with those for enhancing air quality. EESL's RAISE (Retrofit of Airconditioning to Improve Indoor Air Quality for Safety and Efficiency) initiative focuses on enhancing indoor air quality, thermal comfort, and energy efficiency in air-conditioning systems through upgrades or modifications to existing systems. Based on a series of pilots, EESL has developed retrofit specifications for scaling up the RAISE initiative nationwide.

Energy-efficient lighting in streets and homes

Lighting can account for up to 30-40 percent of the total energy consumption in cities. Scaling up the use of energy-efficient fans, air conditioners and light fixtures can significantly lower the amount of electricity required, which, in turn, will lessen the burning of fossil fuels, thus ultimately reducing the emission of greenhouse gases and other noxious pollutants. Two of EESL's initiatives stand out in this respect: the Street Lighting National Programme (SLNP) and Unnat Jyoti by Affordable LEDs for All (UJALA).