

Innovating Energy

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EDITOR'S NOTE

Dear Reader,

Illumination is a cornerstone of any society. It plays a critical role in the development of a nation, facilitating connectivity, trade, education and safety. A good lighting infrastructure can act as a catalyst for positive evolution of a nation, from a social, economic and cultural standpoint. However, it is also pivotal for lighting to be sustainable and environment friendly. It has to align with the Sustainable Development Goals (SDGs) of a

nation, especially through cost and energy efficiency. India was perhaps one of the frontrunners in recognising the importance of a sustainable and energy efficient lighting infrastructure.

In this newsletter, we shine light on some of the initiatives that brought about a paradigm shift in how we view illumination. We trace the rise of LED technology and how a market for it was built from scratch, through the highly successful UJALA (Unnat Jyoti by Affordable LEDs for All) programme. The article '*UJALA's journey through the years*' takes us through that voyage, as it witnesses how this initiative began as a small pilot in 2014 and became the world's largest zero subsidy domestic lighting programme, covering all 28 states and 8 UT's of India, spanning across 7.8 crores households.

We then move to another highly lauded and impactful initiative - Street Lighting National Programme. The article '*Deconstructing unprecedented success of Street Lighting National Programme*' decodes how this programme achieved the unprecedented milestone of installation of 1 crore smart LED street lights setting a global benchmark. The article '*Transforming India's lighting industry through LEDs*' takes a more holistic view of the impact of these two initiatives and discusses how it led to the metamorphosis of the lighting industry in India.

India has set a precedent for other countries to follow, by completely transforming its lighting industry. EESL, through its bulk procurement model altered the market for LEDs forever. It led to the plummeting of the prices of LED bulbs, making them more accessible and affordable. The success of its lighting programmes, if replicated in other sectors can pave the way for a more sustainable and energy efficient future for India.

With Regards,

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Transforming India's lighting industry through LEDs

Lighting industry in the last few years have undergone a massive change as LED penetration has surged at lightning speed, with other conventional lighting sources being slowly phased out. This is happening all over the world. In India, however, the pace seems to be faster than most of the other developing countries, as the central government is proactively supporting the replacement of conventional lights by creating a public distribution system for LED lamps through a super energy service company – Energy Efficiency Services Limited (EESL). While this initiative of the central government has helped the industry in scaling up the business operations faster, bringing down the input cost and resulting in reduction of selling price, on the other side, the market has become more competitive due to the reduced prices, making LED products more affordable. This in turn, reduces manufacturing margins, as against the volume wise growth of more than 12%, the value turnover growth is only 2%.

ELCOMA had prepared a Vision 2020 document, which envisaged the reduction of power consumption in lighting sector from 18% to 13%, thus saving more than 27000 Megawatt of power. The government in 2014 adopted this plan of making LED lighting affordable & accessible and appointed EESL to execute the same. Owing to better performance, existing street lights are being replaced with smart LED street lights. Many states are joining hands with EESL, while the industry too is opting for LED replacement. This has the benefit of not only reducing the power consumption but also improves longevity of the lights and provides improved illumination at night. It is a challenging and competitive time for the industry as existing lighting companies and new players are entering this arena with newer competencies and more cost-effective business models.



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Deconstructing unprecedented success of Street Lighting National Programme

Launched by Hon'ble Prime Minister, Shri Narendra Modi on 5th January, 2015, the Street Lighting National Programme (SLNP) began with installation of 91,000 energy efficient LED streetlights in the state of Andhra Pradesh. Over a span of 5 years, this programme has now reached the milestone of installation of more than one crore streetlights across India. In the process, EESL became the world's largest streetlight management company. The success of SLNP has been possible through the staunch support from the Government, Urban Local Bodies (ULBs) and the industry. The rising awareness on the importance and the potential of energy efficiency has also been an enabler in this journey.

The globally acclaimed Street Lighting National Programme has been instrumental in retrofitting 10,700,381 streetlights across India as of now. This has resulted in estimated energy savings of 7186.82 MUs per year, with avoided peak demand of 1197.8 MW and estimated GHG emission reduction of 4.95 million tCO₂.

India's streetlights are vital component of the nation's investment in infrastructure and road safety. To bring in mass-scale transformation, EESL adopted a unique strategy of partnering with states, municipal bodies and ULBs, replacing conventional streetlights with LEDs at its own costs with no upfront investment by the municipalities. This model made the adoption of LED lights even more attractive.

Utilising its unique business model, EESL recovers its capital investment over time by monetising the savings that occur due to the reduction in energy and maintenance costs. A seven-year contract with the local bodies guarantee a minimum energy saving of typically 45-50% and provides free replacements and maintenance of lights at no additional cost to the civic partners. The state-of-the-art Centralised Control and Monitoring System (CCMS) for remote operation and supervising has also helped mitigate the lack of monitoring mechanism and warranties against technical defects.

EESL's revolutionary business model has made SLNP attractive and scalable, helping it overcome barriers that prevent the replacement of streetlights, as evident by the earlier mentioned landmark of 1 crore installations. This success has been replicated globally as well, with the installation of 2500 LED streetlights in Maldives.



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UJALA's journey through the years

UJALA (Unnat Jyoti by Affordable LEDs for All), started in 2014 as a small pilot by Energy Efficiency Services Limited (EESL) in Puducherry. Since then, it has emerged as the world's largest zero subsidy domestic lighting programme and now covers all 28 states and 8 UT's of India, spanning across 7.8 crore households. This scheme was launched with the aim to address India's high cost of electrification and high emissions due to consumption of more power by inefficient lighting. UJALA's success lies in its strategic approach to energy efficiency and EESL's bulk procurement model. It has single handedly created a market for energy efficient LED bulbs in India, bringing down the retail price of the LED bulbs from INR 310 to INR 38 over a span of 5 years.

It has transformed the market for domestic lighting. Under UJALA programme, till date more than 360 million LED bulbs have been distributed in the country. It has also ushered in an estimated energy saving of over 46 billion kWh per year with avoided peak demand of 9,398 MW, estimated GHG emission reduction of 38 million tonne CO₂ and monetary savings of INR 187 billion. UJALA has also been pivotal in promoting the use of the most efficient lighting technology at affordable rates for the domestic consumers and has benefited them by way of reduced energy bills. It has enhanced the awareness of consumers about the efficacy of using efficient appliances, which in turn has changed their buying preferences from low first cost-based purchases to lifecycle cost. Due to the creation of a demand for LED bulbs, propelled by EESL's strategy of aggregating demand across the country, the domestic lighting industry has received a significant impetus.

UJALA stands as a testament of EESL's dedicated efforts in creating a sustainable and energy efficient India. The remarkable success of UJALA has made a difference in the lives of the people by improving their quality of life, generating prosperity in local communities and in expanding energy access to all.

5 Years of UJALA & SLNP

