

INNOVATING ENERGY



"With 'Innovating Energy, we will provide our esteemed readers a great resource for tracking the opportunities we are leveraging and the impact of our work in India and other countries."

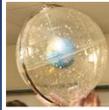
The inaugural edition of our monthly newsletter, Innovating Energy, is our humble effort to give the Indian energy efficiency ecosystem the due importance it deserves. Over the last three years, the benefits of energy efficiency have been accessed by

an ever-growing pool of public and private companies, industries, local bodies, and most importantly consumers.

These benefits have earned global attention and enabled us to expand our offerings to international partners, while bringing home new technologies, services, and business models that can catalyse more growth and sustainability. The credibility and momentum built in such a short period is a testament to India's spirit of constant growth. Our efforts, opinions and work reflected in the newsletter, define our purpose & our vision.

Towards our collective mission of enhancing energy efficiency in India, I humbly welcome your valuable inputs, ideas and suggestions.

**With regards,
Saurabh Kumar**

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<p><i>"While the demand in energy is increasing everyday, our environment is in a state of crisis. Hence we need innovation in better energy access with the help of the young innovators to come together and come up with ideas that can change the energy ecosystem"</i></p> <p>- Shri R.K. Singh (Hon'ble Union Minister of State (IC), Power & New and Renewable Energy)</p>	

STANDBY POWER:

The Last Mile of Energy Efficiency



*Dr. Ajay Mathur,
Director General, TERI*

As global initiatives have shown, innovation, whether through product, policy, or a combination of both is instrumental in ensuring that a market is built. Innovation

breaks through the clutter and creates a clear purchase and investment motive. Supported by policy measures, barriers and market imperfections can be addressed. In the energy policy framework of Europe, for example, policy support for innovation has been made a central pillar, instead of existing

as an abstract concept.

The next innovation challenge for India

While India's energy efficiency story has gone from success to success, the last mile of energy usage – standby power – is still unaddressed. Standby power is power consumed BY appliances that are 'switched off' but still consume power because they are still plugged in. Consumers think that the device has gone to sleep, when its power consumption continues, in fact

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just little different to when it is active. In 2014, a study highlighted that the loss due to standby power was a whopping 175MW or 25% of the total electricity produced worth 613 crores in Delhi alone. Now imagine the standby power resulting from the multitude of high-tech devices owned by every single resident of a household today. Then factor in the hundreds of devices switched on 24 hours in any average-sized office. Tens of billions of electricity units generated by polluting coal-powered plants are lost without any constructive use.

The obvious solution would be to simply disconnect the power source, but this is not always possible due to the sheer inconvenience created by the many devices that today's households use. This challenge is exacerbated by a new challenge - the rise of Internet of Things (IoT) enabled smart devices. By 2030, the most significant addition to standby power wastage is expected to be smart sockets, smart light bulbs and smart street lights. This is due to the always-on nature of the sensors, actuators, gateways, communication modules and other network-related subcomponents of IoT solutions. IEA analysis states that worldwide network-related standby energy use could grow 20% per year to 46 TWh by 2025.

Voluntary labeling is globally the most widely accepted measure to



address standby power losses, and the Bureau of Energy Efficiency (BEE) has issued endorsement of electronic product labels to account for their total electricity usage.

BEE has also participated in global dialogue with bodies like the International Energy Agency to identify pathways to mitigate standby power. This approach is vital considering the impact of a fast globalizing world, and booming business in appliance export and import. International cooperation can streamline varying inter-country regulations and policies and help manufacturers to reach economies of scale for adopting advanced standby technologies and management features into their products.

Simultaneously, it can create the framework for concerted R&D to explore new techno-economic solutions to reduce standby power use. The result should be two-fold: an economy-driven push for certain product-related action (e.g.; setting minimum standards or rules as well as the duty to label

products); and policy support (e.g.; taxes and charges, licenses, subsidies and incentives). Supported by customer awareness and voluntary agreements, it is possible to create an entirely efficient range of products across sectors and applications.

Internationally, appliance design has begun to provision for preventing standby power wastage. Most developed countries have regulations restricting standby power of devices sold to one watt (and half that from 2013). Combining technologies, business, and knowledge from Indian and international research centres, innovation at an unprecedented scale will be needed to achieve this vision of end-to-end energy efficiency. At the very least, we should initiate action on a small scale - possibly by stimulating innovation for a 1-W standby-power smart multi-socket power strip that is connected to the internet, and can use commands from Alexa or Google Assistant to switch-on or switch-off connected air conditioners and other loads.



INSPIRE 2018: A Quick Round Up

EESL has always believed in the power of cross-stakeholder collaboration in enabling more low carbon growth and clean energy future. This gets reflected with the success year-on-year of our annual event, International Symposium to Promote Innovation & Research in Energy Efficiency (INSPIRE) which accelerates our efforts towards advancing universal access to power, energy security and sustainability.

Organised in partnership with the World Bank and with support from Asian Development Bank (ADB), The Energy and Resources Institute (TERI), World Resource Institute (WRI), Bureau of Energy Efficiency (BEE) and United Nations Environment

Programme (UNEP), INSPIRE 2018 set the tone for innovation in India's energy scenario. In association with WRI, the first edition of #InnovateToINSPIRE, a first-of-its-kind energy innovation challenge, was organised to invite ideas for scalable solutions in the realm of energy efficiency.

The challenge invited participants to submit sustainable and scalable solutions to seven specific challenges spanning across Grid Management, E-Mobility, Energy Efficient Technologies and financial instruments. It received good response from participants across the world, with 94 submissions. Renowned personalities from diverse fields including academia, policy making, finance, media and research identified four path breaking innovations from these

submissions who were recognised by Hon'ble Minister of Power, New and Renewable Energy, Shri R.K. Singh during the inaugural session.



The winners were:

1. Next Drive Electric, retrofitting cars to electric, a 360 degree eco system player

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2. Minion Labs for developing devices for every appliance, devices & tools turning ON and OFF inside the building at a single point of connect and gives you a comprehensive report with predictive analytics & maintenance

3. Cydee technologies Private Limited, for developing unique streetlights that provide 60% energy savings

4. Mobile Li-ion Battery System (MOLIB) MOBILE Charging Station providing DC Fast charging, AC fast charging and normal AC charging for EVs at key locations,

such as makeshift parking zones for exhibitions, etc. MOLIB will respond to SOS calls for road side assistance of discharged EVs

During the three-day event, over 300 delegates from India, Korea, Nepal, Bangladesh, Vietnam, Thailand and the US, deliberated on key energy policies, market transformation strategies, and sustainable business models.

INSPIRE 2019 - The fourth edition of INSPIRE is scheduled to take place during 10th, 11th and 12th November, 2019 in New Delhi,

DID YOU KNOW



Laser Printers draw 30%-35% of their peak power requirements even when they are not in use if left connected to a power source

India. To know more details on INSPIRE and #InnovateToINSPIRE, please log on to www.innovatetoinspire.in.

EESL ENERGY EFFICIENCY SERVICES LIMITED

MILESTONES ACHIEVED TILL 2018

Unnat Jyoti by Affordable LEDs for ALL (UJALA)
EESL has distributed over 31.79 crore LED Bulbs covering all 36 states and UTs. Benefitted 78 million consumers across India through UJALA scheme.

Distributed over 31.79 Crore LED Bulbs	Estimated Energy Savings 41.29 Billion kWh	GHG Emission Reduction 33.44 Million Tonnes
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Street Light National Programme (SLNP)

Installed over 77.26 lakh LED street lights in 28 States/UTs across India	Estimated Energy Savings 5.19 Billion kWh	GHG Emission Reduction 3.57 Million Tonnes
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Energy Efficient LED Tube lights

Distributed over 68.27 lakh LED Tube lights	Estimated Energy Savings 299.04 Million kWh	GHG Emission Reduction 2,45,217 Tonnes
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National E-Mobility Programme

- Procurement of 10,000 E-vehicles
- 1,010 E-vehicles have been deployed/under registration and 206 AC chargers and 75 DC chargers have been commissioned

Smart Meter National Programme (SMNP)

- Procurement of 1 crore smart meters and system integrators
- 96,952 smart meters have been installed in the state of Uttar Pradesh and NDMC area, New Delhi

Energy Efficient Fans

Distributed over 21.14 lakh Energy Efficient Fans	Estimated Energy Savings 196.60 Million kWh	GHG Emission Reduction 1,61,216 Tonnes
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Building Energy Efficiency Programme (BEEP)

Completed building energy efficiency projects in 10,092 buildings across India

Agriculture Demand Side Management (AgDSM)

46,200 no. of pumps have been installed in the State of Andhra Pradesh and Uttar Pradesh

Solar Study Lamps Scheme

Distributed over 24.23 lakh solar study lamps in 5 states. i.e Assam, Bihar, Jharkhand, Uttar Pradesh and Odisha

Atal Jyoti Yojna (AJAY)

Installed over 1.24 lakh LED Solar Street Lights in the States of Uttar Pradesh, Assam, Bihar, Odisha and Jharkhand

These all are annual savings

To contribute to the newsletter or for any suggestions please write to us at innovatingenergy@eesl.co.in