

1. Background

1.1 Energy efficiency assumes significance for the nation in the current environment of shortages and concerns over climate change. Lighting itself accounts for about 20% of the total electricity consumption in India. Hon'ble Prime Minister, on 5th January, 2015 launched the **Unnat Jyoti by Affordable LEDs for All(UJALA)** to provide LED bulbs to domestic consumers with a target to replace 770 million incandescent bulbs with LED bulbs by March, 2019.

1.2 Energy Efficiency Services Limited (EESL), a government company under the administrative control of Ministry of Power, Government of India, has been designated as the implementing agency for this programme. For domestic lights, EESL service model enables domestic households to procure LED lights at an affordable price of \$0.154/- each and the balance on easy instalment from their electricity bill.

1.3 The programme target energy efficiency in lighting as it offers enormous opportunity to save energy. Most of the lighting needs in domestic and public sector are met by conventional lights, including highly inefficient incandescent bulbs in the domestic sector. LED provides better light output than conventional light and are 88% energy efficient as compared to incandescent bulbs. Further LED lights are 50% energy efficient as compared to CFLs.



1.4 Initially 100 cities had been taken up for coverage under the programme. As per the statistics of the lighting manufacturers association ELCOMA, about 770 million incandescent bulbs were sold in 2013-14. If all these are replaced by LEDs, the total reduction in connected load in the country is estimated to be 20,000 MW and energy savings of 100 billion kWh every year. The total saving in electricity bills of consumers will be USD 6.16 billion every year, considering average tariff of \$0.06 per kWh. The total cost charged to consumers by EESL is \$1.08 (including GST) and is less than savings of 1 year. The bulb will function for at least 10-15 years and all savings after one year is of the consumer.

2. Objectives of the National Programme

The programme is designed to reduce energy consumption in the lighting sector and to promote LED based efficient lighting products. The key objectives of the programmes are as follows:

- (a) Reduce energy consumption in lighting which helps DISCOMs to manage peak demand
- (b) Promote the use of the most efficient lighting technology at affordable rates to domestic consumers which benefits them by way of reduced energy bill
- (c) Enhance the awareness of consumers about the efficacy of using efficient appliances which in turn could change their buying preferences from low first cost based purchases to lifecycle cost.
- (d) Increase the demand of LED lights by aggregating requirements across the country and provide an impetus to domestic lighting industry through economies of size.
- (e) Encourage and support domestic manufacturing of LED bulbs by sustaining demand making it consistent with the 'Make in India' policy of the Government.
- (f) Provide a sustainable service model that obviates the need for upfront capital investment as well as additional revenue expenditure to pay for procurement of LED lights. The total cost paid by consumers is less than the total savings in electricity bills.

(g) Create understanding about the service model amongst all stakeholders such as industry, government agencies, financial institutions, etc. so that market based energy efficiency can happen.

(h) Provide a base model which can not only be replicated in lighting energy efficiency but also in host of other energy using appliances in domestic and other sectors. For instance, UJALA service model could be used for domestic appliances like fans, refrigerators, ACs, etc. where, the consumer preference for purchase is still dictated by first cost and the level of penetration of energy efficient equipment in less than 10%.

(i) Create robust arrangements for monitoring and verification of energy savings in a simple and transparent manner.

(j) Standardise agreements, technical specifications, payments security mechanisms, implementation methodologies, etc. that can reduce the transaction cost and can stimulate replication.

(k) Create an enabling environment for private sector investments in the lighting sector.



iLEDtheWay.in

Shri Piyush Goyal, Former Union Minister of State (IC) for Power, Coal and New & Renewable Energy launched the microsite www.iLEDtheWay.in. The Minister also became the first citizen to take the pledge on the site.

In today's era of Digital India, the microsite will attempt to reach out to all citizens in the country and spread awareness about the nation-wide movement of #iLEDtheWay. Through this microsite, consumers can take a pledge of switching to LED bulbs, which are safer, brighter and consume less energy.

The Microsite visitors can join the movement by simply clicking "Take a Pledge" tab which is prominently displayed on the homepage. Consumers who do not have access to the LED bulb distribution under the UJALA scheme in their city/state yet, can pre-register for the scheme by sharing their contact details.

It will also give exciting information on the reduction in CO₂ emissions, energy saved, avoided peak demand.

3. Programme Targets

No of LED lights to be replaced in 3 years	770 million
Expected annual energy savings	100 billion kWh
Expected reduction in installed load	20,000 MW
Estimated capital investment (excluding O&M cost)	\$ 1.23 billion
Annual estimated GHG emission reductions	79 million tonnes of CO ₂

4. EESL Service Model

EESL has evolved a service model where it works with electricity distribution companies (DISCOMs) through a benefit sharing approach. The Unnat Jyoti by Affordable LEDs for All (UJALA) obviates the need for DISCOMs to invest in the upfront cost of LED bulbs; EESL procures the LEDs bulbs and provides to consumers at a rate of \$0.154 each as against their market price of \$2.3 – 3.08. The upfront investment made by EESL is paid back in two different ways as indicated under:

- (a) **DISCOM Cost Recovery:** The investments of EESL is recovered from the DISCOMs as annuity over a period of 3-10 years by monetizing the energy savings that accrue as a result of replacement of incandescent lamps with LEDs. Each replacement leads to a reduction of connected load by 53W. The energy savings are monetized based on the peak procurement cost of DISCOM and is used to pay back the investment made by EESL under an approval by the State Electricity Regulatory Commission.
- (b) **On Bill Financing (OBF):** Cost recovery from consumers by deduction of easy instalments of \$0.154 every month for 8-12 months. The entire cost of the LED bulbs, including the awareness, distribution and cost of capital is recovered from the consumer bills.

5. Progress of Implementation

The current progress of the programme as on 13.10.2017 since its launch in January 5th, 2015 is as follows:

Parameters	Achievements
No of Towns enrolled	Pan India
Total number of LED bulbs distributed	269 million
Avoided capacity generation	6,994 MW
Energy saved	34.93 Billion kWh/Year
Reduction in carbon foot print per year	28.29 Million t CO ₂

6. National Dashboard

The progress of this initiative can be tracked real time through the national dashboard www.ujala.gov.in