



10 Years of UJALA and SLNP

For Prelims: [Unnat Jyoti by Affordable LEDs for All](#), [Street Lighting National Programme](#), [Light Emitting Diodes](#), [Energy Efficiency Services Limited](#), Incandescent Lamps, Compact Fluorescent Lamps, [Energy Conservation Building Code](#)

For Mains: Energy Efficiency in India, Energy and Environment, Economic Impact of Energy Efficiency Programs, Public Lighting Systems in Urban India

[Source: PIB](#)

Why in News?

The [Unnat Jyoti by Affordable LEDs for All \(UJALA\) scheme](#), launched on 5th January 2015, marks its 10th anniversary as a transformative initiative in energy efficiency.

- UJALA has revolutionized household lighting, reduced energy consumption, and contributed to India's environmental sustainability goals.
- The [Street Lighting National Programme \(SLNP\)](#), launched with UJALA, aims to replace conventional streetlights with energy-efficient [Light Emitting Diodes \(LEDs\)](#).

What are the Key Facts About UJALA Scheme?

- **About: UJALA Scheme launched in** January 2015, to promote energy efficiency by replacing **traditional lighting systems (incandescent lamps (ICLs) and Compact Fluorescent Lamps (CFLs))** with **energy-saving LED bulbs**.
 - The scheme is a joint project between the Government of India's Public Sector Undertakings, the **Union Ministry of Power's [Energy Efficiency Services Limited \(EESL\)](#)**, and **[DISCOMs \(Distribution Companies\)](#)**.
- **Objective:** The UJALA Scheme aims to save **85 lakh kWh of electricity** and reduce 15,000 tonnes of [Carbon dioxide \(CO₂\)](#) by replacing **77 crore traditional bulbs** and 3.5 crore street lights with LEDs.
- **Need for UJALA:** Lighting accounts for approximately 18-27% of residential electricity use in India.
 - In 2011, Indian households used about **one billion lighting points, with most relying on CFLs (46%) and tube lights (41%). Only 0.4% used LED bulbs.**
- **Efficiency of LEDs:** LEDs save up to **90% energy compared to ICLs** and 50% compared to CFLs.
 - LED bulbs use **75% less energy and last 25 times longer than incandescent bulbs**, but the high upfront cost was a major barrier.
- **Key Features of UJALA:**
 - **Subsidized LED Bulbs:** The cost of LED bulbs distributed under UJALA was reduced to Rs 70 per LED bulb, compared to Rs 450 in 2014.
 - **Distribution Mechanism:** The bulbs are distributed via a **demand aggregation-price crash model** (Bulk buying to reduce prices).

- In 2015, EESL invited open bids for large-scale LED lamp procurement and engaged state governments to establish a distribution network.
- **Progress and Achievements:** Over 36.87 crore LED bulbs have been distributed across the country, leading to:
 - **Energy Savings:** 47,883 million kWh of energy saved annually.
 - **Cost Savings:** Rs. 19,153 crore saved annually.
 - **CO2 Reduction:** 3.88 million tonnes of CO2 avoided annually.
 - **Peak Demand Avoided:** 9,586 MW peak demand has been avoided.

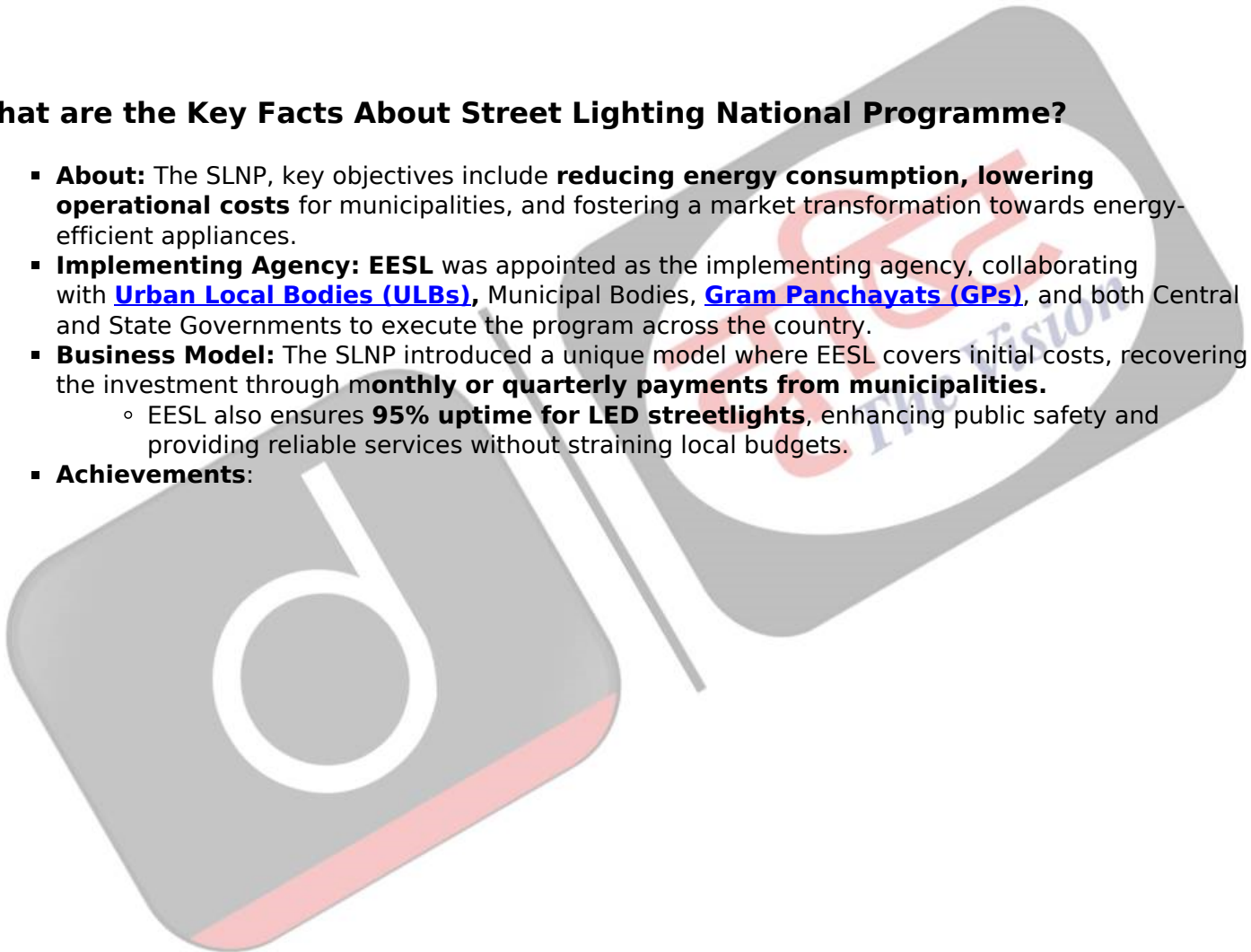
Note:

- **GRAM UJALA Scheme** was Introduced in March 2021 for rural households, offering LED bulbs at Rs. 10 each in exchange for old incandescent bulbs.
 - Under **Phase-I**, the goal was to distribute **1.5 crore LED bulbs**, achieving energy savings of 2025 million kWh/year and CO2 reduction of 1.65 million tonnes per year.

What are the Key Facts About Street Lighting National Programme?

- **About:** The SLNP, key objectives include **reducing energy consumption, lowering operational costs** for municipalities, and fostering a market transformation towards energy-efficient appliances.
- **Implementing Agency:** EESL was appointed as the implementing agency, collaborating with **Urban Local Bodies (ULBs)**, Municipal Bodies, **Gram Panchayats (GPs)**, and both Central and State Governments to execute the program across the country.
- **Business Model:** The SLNP introduced a unique model where EESL covers initial costs, recovering the investment through **monthly or quarterly payments from municipalities**.
 - EESL also ensures **95% uptime for LED streetlights**, enhancing public safety and providing reliable services without straining local budgets.
- **Achievements:**

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Street Lighting

National Programme

Energy Savings

Peak Demand Reduction

LED Streetlights Installed



1.34
Crore



Over 9,001
Million Units (MUs)
of electricity
annually



More than
1,500 MW

CO₂ Emission Reduction



6.2
Million Tonnes
Annually

(As of January 6, 2025)

What are the Key Differences between ICLs, CFLs and LEDs?

Feature	Incandescent Lamps (ICLs)	Compact Fluorescent Lamps (CFLs)	LEDs (Light Emitting Diodes)
Energy Efficiency	Low	Moderate	High
Power Consumption	High	Moderate	Low
Cost of Bulb	Low (initial cost)	Moderate	High (initial cost)
Heat Emission	High	Moderate	Very low

Environmental Impact	High (produces more CO ₂ due to energy waste)	Moderate (contains small amounts of mercury)	Low (no harmful emissions)
Color Options	Warm white	Cool white, Warm white	Warm white, Cool white, RGB
Durability	Fragile	More durable than ICLs	Very durable, impact-resistant
Light Direction	Omnidirectional	Omnidirectional	Directional or omnidirectional
Chemical Composition	Tungsten filament, inert gas (argon or nitrogen)	Mercury vapor, phosphor coating	Gallium nitride (GaN), indium gallium nitride (InGaN), phosphorus (for color)

Energy Efficiency Services Limited (EESL)

- EESL, founded in 2009 and promoted by the **Ministry of Power**, is a **Super Energy Service Company (ESCO)** that focuses on energy efficiency solutions.
 - EESL implements the **world's largest energy efficiency portfolio** across sectors like lighting, buildings, electric mobility, smart metering, and agriculture.
- EESL has saved over **47 billion kWh of energy annually and reduced carbon emissions by 36.5 million tonnes**.
 - EESL operates as a joint venture of [National Thermal Power Corporation Limited](#), [Power Finance Corporation Limited](#), [REC Limited](#) and [POWERGRID Corporation of India Limited](#).

India's Other Initiatives Related to Energy Efficiency

- [Standards and Labeling \(Bureau of Energy Efficiency \(BEE\)\)](#)
- [The Energy Conservation \(Amendment\) Act, 2022](#)
- [National Mission for Enhanced Energy Efficiency \(NMEEE\)](#)
- [National Electric Mobility Mission Plan \(NEMMP\)](#)
- [Perform Achieve and Trade Scheme \(PAT\)](#)
- [Energy Conservation Building Code \(ECBC\)](#)

Conclusion

The UJALA scheme and SLNP have greatly advanced **India's energy efficiency and sustainability goals**, reducing energy use and carbon emissions while driving economic savings. These initiatives showcase the impact of government-led efforts in promoting a greener, energy-efficient future.

Drishti Mains Question:

Examine the role of government-led initiatives such as the UJALA and SLNP schemes in addressing energy efficiency challenges in India.

UPSC Civil Services Examination, Previous Year Question:

Prelims

Q. With reference to street lighting, how do sodium lamps differ from LED lamps? (2021)

1. Sodium lamps produce light at 360 degrees but it is not so in the case of LED lamps.

2. As street lights, sodium lamps have a longer lifespan than LED lamps.
3. The spectrum of visible light from sodium lamps is almost monochromatic, while LED lamps offer significant colour advantages in street lighting.

Select the correct answer using the code given below.

- (a) 3 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (c)

Q. On which of the following can you find the Bureau of Energy Efficiency Star Label? (2016)

1. Ceiling fans
2. Electric geysers
3. Tubular fluorescent lamps

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: (d)

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