Environment & Ecology · GS - III

Give an account of the current status and the targets to be achieved pertaining to renewable energy sources in the country. Discuss in brief the importance of National Programme on Light Emitting Diodes (LEDs).

EXAM YEAR	PAPER	SUBJECT
2016	GS - III	Environment & Ecology

MARKS	WORD LIMIT
12.5	~200 words

Answer Hint

Renewable energy; solar power; wind energy; 175 GW target; energy security; LED efficiency; UJALA; energy conservation

Model Answer

Introduction

Renewable energy and energy-efficient lighting are important components of India's strategy to improve energy security, reduce pollution and lower greenhouse-gas emissions.

Status and Targets of Renewable Energy

Around 2016, India was expanding solar, wind, biomass and small hydropower capacity. The government had announced a target of **175 GW of renewable energy capacity by 2022**, comprising:

- **Solar energy:** 100 GW.
- **Wind energy:** 60 GW.
- **Biomass energy:** 10 GW.
- **Small hydropower:** 5 GW.

These were policy targets announced at the time, not achieved capacity figures. India also pursued solar parks, rooftop solar, renewable purchase obligations and international cooperation through the International Solar Alliance.

Importance of the National LED Programme

- **Energy savings:** LEDs consume less electricity than conventional incandescent lamps.
- **Lower electricity bills:** Efficient lighting reduces household and public expenditure.
- **Peak-demand reduction:** Large-scale adoption can reduce pressure on electricity networks.
- **Environmental benefits:** Lower electricity consumption can reduce associated emissions.
- **Public lighting:** The Street Lighting National Programme promotes efficient streetlights.
- **Household access:** The UJALA programme supported the distribution of affordable LED bulbs to consumers.

Challenges

Renewables face intermittency, storage costs, transmission constraints and financing requirements. LED adoption requires quality assurance, consumer awareness and safe disposal of electronic waste.

Conclusion

Renewable energy expansion and LED efficiency complement each other. Together, they can reduce energy demand, strengthen energy security and support India's transition towards cleaner development.

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