Society & Social Justice · GS - III

Examine the potential of rooftop solar energy to improve household welfare and strengthen India's energy security. What measures are needed to accelerate its adoption?

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 03/11/2026	GS - III	Society & Social Justice

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Decentralised renewable energy; household electricity generation; reduced energy expenditure; solar cooking; EV charging; energy self-reliance; installation costs; grid integration

Model Answer

Introduction

Rooftop solar energy can transform households from passive electricity consumers into electricity producers. Its expansion can contribute to India's clean energy transition while improving household energy access and affordability.

Potential Benefits

Rooftop solar systems generate electricity close to the point of consumption, potentially reducing grid dependence and household electricity expenditure. Solar electricity can also support electric vehicle charging and electric cooking technologies. Wider adoption can diversify the energy mix, reduce fossil-fuel dependence and strengthen decentralised energy security.

Challenges

High initial installation costs, limited rooftop suitability, maintenance requirements, financing constraints and inadequate consumer awareness can restrict adoption. Intermittent generation also creates a need for suitable storage, grid connectivity and demand management.

Way Forward

The government should strengthen targeted financial assistance, simplify installation procedures, promote affordable financing and improve net-metering implementation. Public awareness, reliable after-sales services, battery-storage solutions and modernised distribution networks are equally important.

Conclusion

Rooftop solar can improve household welfare and support energy self-reliance. Its long-term success depends on affordable access, effective implementation and integration with India's wider electricity system.

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