Geography · GS - I

Explain briefly the ecological and economic benefits of solar energy generation in India with suitable examples.

EXAM YEAR	PAPER	SUBJECT
2025	GS - I	Geography

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Renewable energy, emission reduction, energy security, decentralisation, employment, rural electrification, rooftop solar, PM-KUSUM

Model Answer

Introduction

Solar energy is particularly significant for India because of its high solar insolation and growing energy demand.

1. Ecological Benefits

Solar power generates electricity without direct combustion of fossil fuels, thereby reducing greenhouse-gas emissions and air pollution. It also reduces dependence on coal-based electricity and supports India's energy transition.

2. Economic Benefits

Solar generation reduces dependence on imported fossil fuels and improves long-term energy security. Falling solar costs can support affordable electricity generation and attract investment.

3. Rural and Employment Benefits

Decentralised solar systems can improve electricity access in remote areas. Rooftop solar and schemes such as PM-KUSUM can support households and farmers through distributed generation.

4. Wider Impact

Solar manufacturing, installation, maintenance and associated services create employment opportunities and promote technological development.

Conclusion

Solar energy simultaneously supports environmental sustainability, energy security, rural development and economic diversification, making it central to India's clean-energy transition.

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