Environment & Ecology · GS - III

Discuss how sustainable urban transport and the expansion of non-fossil fuel energy capacity can contribute to India’s climate-change mitigation efforts. Identify the key challenges in achieving these objectives.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 04/11/2026	GS - III	Environment & Ecology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Sustainable urban mobility; mass rapid transit; non-fossil fuel capacity; emission reduction; urban infrastructure; energy transition; financing and implementation challenges

Model Answer

Introduction

India’s climate strategy requires coordinated action in transport and energy. The inauguration of Pune Metro Line 3 and the reported ambition to add 500 GW of non-fossil fuel capacity illustrate two complementary approaches to sustainable development.

Role of Sustainable Transport

Metro systems provide high-capacity public transport and can reduce dependence on private vehicles when supported by efficient last-mile connectivity. They can help ease congestion and reduce transport-related emissions, although outcomes depend on passenger use, electricity sources and integration with other modes.

Role of Non-Fossil Fuel Energy

Expanding non-fossil fuel capacity can diversify the energy mix and reduce reliance on fossil fuels. However, renewable energy deployment requires investment in transmission networks, storage, grid flexibility and reliable power management.

Key Challenges and Way Forward

Urban rail projects face high capital costs, construction delays and land-related constraints. Energy transition efforts face financing, intermittency and infrastructure challenges. Integrated transport planning, public-private investment where appropriate, stronger grid infrastructure and improved last-mile connectivity can enhance effectiveness.

Conclusion

Sustainable mobility and cleaner energy must advance together. Their coordinated implementation can support India’s climate objectives while improving urban accessibility and long-term energy security.

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