India’s Renewable Energy Progress

Prelims: *Current events of national and international importance | Energy*

Why in News?

Recently, according to the International Renewable Energy Agency (IRENA), India ranked 3rd globally in Renewable Energy Installed Capacity, surpassing Brazil.

- **Renewable Energy –** Energy derived from naturally replenishing sources such as *sunlight, wind, water, biomass, and geothermal heat.*
- **Total Non-Fossil Capacity –** 283.46 GW (Solar 150 GW, Wind 56 GW, Hydro 56 GW, Bio 12 GW, Nuclear 9 GW).
- **Milestone –** Achieved **50%** installed capacity from non-fossil sources in June 2025, 5 years ahead of Nationally Determined Contribution NDC target.

India’s Commitment – Target of 500 GW non-fossil capacity by 2030 under Paris Agreement NDC (Nationally Determined Contribution).

Types of Renewable Energy in India

Types of Renewable Energy	India’s Goal/ Target	Achievements	Schemes/ Initiatives
Solar Energy	Major contributor to 500 GW non-fossil target by 2030; expand rooftop & agricultural solar.	150.26 GW installed	PM KUSUM, Rooftop Solar Programme, PLI Scheme for Solar Manufacturing, Solar Quality Control Order 2025.

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Wind Energy	Expand onshore & offshore wind; strengthen manufacturing base.	56.09 GW installed; India ranks 4th globally in wind turbine capacity.	National Wind-Solar Hybrid Policy, Vayumitra Skill Development Programme.
Hydro Power (Large + Small)	Sustain 60 GW hydro capacity; promote small hydro in hilly & NE states.	51.41 GW large hydro + 5.17 GW small hydro	Small Hydro Power Development Scheme (2026–31), Green Energy Corridor.
Bio-Energy	Promote Waste-to-Energy, biomass, Compressed Biogas (CBG).	11.75 GW installed; introduced performance-based subsidies, Internet of Things monitoring, simplified documentation.	National Bio-Energy Programme, Jaiv-Urja Mitra Skill Development Programme.
Geothermal Energy	Pilot projects to assess viability; integrate into Renewable Energy mix.	5 pilot projects sanctioned in 2025; National Geothermal Energy Policy launched (Sept 2025).	National Geothermal Energy Policy (2025).
Nuclear Energy	Maintain 9 GW clean capacity; part of non-fossil mix.	8.78 GW installed capacity contributing to clean energy share.	Operates under Department of Atomic Energy; contributes to non-fossil targets.
Green Hydrogen (Mission Mode)	Produce 5 MMT Green Hydrogen by 2030; add 125 GW RE capacity.	Green Ammonia; record low price; hubs at Kandla, Paradip, Tuticorin.	National Green Hydrogen Mission (NGHM), SIGHT Programme for electrolyser manufacturing.

Reference

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