India’s Renewable Rooftop Solar Emerge Surge

GS III – Energy

Why in News?

According to recent data, India's Rooftop Solar (RTS) capacity achieved a landmark milestone by reaching 20.8 GW in 2025.

- **Growth Trajectory -** The country added 7.1 GW of new installations in 2025 alone, demonstrating a massive 123% Year-on-Year (YoY) increase.
- **Driver -** The residential sector has become the primary growth engine, accounting for 76% of all annual Rooftop solar RTS installations.
- **State-wise Leaders - 2025**
  - **Maharashtra-** 16% of new deployments
  - **Gujarat -** 16% of new deployments
  - **Uttar Pradesh -** 15% of new deployments

PM Surya Ghar: Muft Bijli Yojana

Approved by the Union Cabinet on February 2024. This is India's premier flagship central scheme designed to fast-track residential rooftop solar adoption.

- **Nodal Agency-** Ministry of New and Renewable Energy **(MNRE).**
- **Financial outflow -** ₹75,021 crore.
- **Key Targets:**
  - Installation of rooftop solar in 1 crore households by the financial year FY 2026-27.
  - Provision of up to 300 units of free electricity per month to participating households.
- **Progress Metrics -** As of early 2026, more than 31 lakh systems have been installed overall, with early phase rollouts heavily concentrated across states like Gujarat, Maharashtra, and Assam.

Utility-Led Aggregation (ULA) Model

A key programmatic evolution under the PM Surya Ghar architecture, the ULA model was introduced to accelerate installations among lower-income residential blocks.

Core Architecture

Under the traditional model, individual households procure, finance, and manage solar vendors independently.

- **Shift-** The ULA model transitions the burden of project aggregation, upfront capital costs, and vendor execution from individual households to the State Power Distribution Companies (DISCOMs) or state-designated entities.

- **Target Segment -** Explicitly focuses on low-income, vulnerable, and economically weaker households requiring smaller installations (typically below 1 kW), where upfront costs and fragmented demand act as entry barriers.
- **Deployment Level -** The government approved over **1**.3 million (13 lakh) rooftop solar systems across 10 States/UTs under this model, targeting a macro-objective of covering 30 lakh households out of the scheme's overall 1 crore target.

For Reference: Bio Energy Times | IAS Parliament

