Pradhan Mantri Suryodaya Yojana

Source: IE

Why in News?

Recently, the Indian Prime Minister launched the **'Pradhan Mantri Suryodaya Yojana,'** a pioneering government initiative aimed at **installing** rooftop solar power **systems in one crore households** across the nation.

What are Rooftop Solar Panels?

- **About:** Rooftop solar panels are **photovoltaic panels** installed on the roof of a building that is connected to the main power supply unit.
- **Benefit:** It reduces the consumption of **grid-connected electricity** and saves electricity costs for the consumer.
    - Surplus solar power units generated from the rooftop solar plant can be exported to the grid as per the metering provisions.
    - The consumer can receive monetary benefits for the surplus exported power as per the prevailing regulations
- **Related Government Initiatives:** In 2014, the government launched the **Rooftop Solar Programme** that aimed to achieve a cumulative installed capacity of **40,000 megawatts (MW) or 40 gigawatts (GW) by 2022.**
    - However, this target could not be achieved. As a result, the government extended the deadline from 2022 to 2026.
    - According to some reports, the **Pradhan Mantri Suryodaya Yojana seems** to be an attempt to help reach the **target of 40 GW rooftop solar capacity.**

What is the Current Solar Capacity in India?

- **India's Current Solar Capacity:**
    - **Rooftop Solar Capacity:** Total rooftop solar installed **capacity is around 11.08 GW** as of December 2023.
        - **Gujarat tops the list with 2.8 GW**, followed by Maharashtra by 1.7 GW.
        - According to a recent report by **Council on Energy, Environment and Water (CEEW)**, only **20%** of rooftop solar capacity installations are in the residential sector, with the majority in commercial and industrial sectors.
            - The report suggests that **India's 25 crore households could deploy 637 GW of solar energy on rooftops,** and just one-third of this could meet the entire residential electricity demand in the country.
    - **Total Installed Capacity:** According to the **Ministry of New and Renewable Energy** solar power installed capacity in India has reached around 73.31 GW as of December 2023.
        - In terms of total solar capacity, **Rajasthan is at the top with 18.7 GW.** Gujarat is at the second position with 10.5 GW.
        - When it comes to rooftop solar capacity, **Gujarat tops the list with 2.8 GW,** followed by Maharashtra by 1.7 GW.

India's Surging Energy Demand

- India is projected to experience the highest energy demand growth globally over the next three decades, as per the International **Energy Agency.**
    - Despite an increase in coal production, India is committed to achieving **500 GW of** renewable energy capacity by 2030.
- Also, the country aims for **50% of electricity generation from non-fossil fuel sources by 2030**, having already reached **43%,** with renewables contributing **30%** to the total installed capacity.
    - Rapid growth in renewable capacity, especially in solar energy, is essential to meet the surging electricity demand.

What are the Other Government Initiatives to Harness Solar Energy?

- **National Solar Mission**
- **Solar Park Scheme**
- **Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)**
- **Suryamitra Skill Development Programme**
- **International Solar Alliance**

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. Consider the following statements: (2016)

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Ans: (a)

Mains

Q. India has immense potential of solar energy though there are regional variations in its developments. Elaborate. **(2020)**