



CURRENT AFFAIRS



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“INDIA’S POTENTIAL TO TAP THE ROOFTOP SOLAR(RTS)”

THIS ARTICLE COVERS “DAILY CURRENT AFFAIRS” AND THE TOPIC DETAILS OF “INDIA’S POTENTIAL TO TAP THE ROOFTOP SOLAR(RTS)” THIS TOPIC IS RELEVANT TO THE “ECONOMY” SECTION OF THE UPSC—CSE EXAM.

WHY IN THE NEWS?

In the fiscal year 2023-2024, India saw a significant rise in its installed rooftop solar (RTS) capacity, increasing by **2.99 GW**, marking the most substantial annual growth. By March 31, the total RTS capacity in India had **reached 11.87 GW**, as reported by the Ministry of New and Renewable Energy. As energy demand continues to escalate, India must intensify efforts to further expand its rooftop solar potential.

RTS PROGRAMME:

- The RTS program in India was initiated through the Jawaharlal Nehru National Solar Mission launched in January 2010.
- Originally, the mission aimed to generate 20 GW of solar energy across three phases: 2010-2013, 2013-2017, and 2017-2022.
- In 2015, the government revised its target to 100 GW by 2022, with a significant component focused on rooftop solar (RTS), aiming for 40 GW.
- Each State and Union Territory was assigned yearly targets as part of this initiative. As of December 2022, India achieved an installed RTS capacity of 7.5 GW and extended the 40 GW RTS target deadline to 2026.
- Despite improvements in financial incentives, technology, awareness, and training, substantial room remains for growth. India’s total potential for rooftop solar stands at approximately 796 GW.
- To meet its broader renewable energy goals of installing 500 GW by 2030, with 280 GW from solar sources, RTS must contribute around 100 GW by the same year.

STATE PERFORMANCE:

- As of March 31, 2024, several states in India have made notable progress in their rooftop solar (RTS) capacities, with Gujarat, Maharashtra, and Rajasthan leading the way.

- Gujarat has achieved an installed RTS capacity of 3,456 MW, facilitated by its efficient approval processes, a large network of RTS installers, and widespread consumer awareness.
- Maharashtra follows closely with an RTS capacity of 2,072 MW, benefiting from robust solar policies and a supportive regulatory framework.
- Rajasthan, leveraging its expansive land area and abundant solar irradiance, boasts the country's highest RTS potential at 1,154 MW. The state's efforts in simplifying approvals, offering financial incentives, and fostering public-private partnerships have been pivotal in driving this growth.
- Other states, such as Kerala, Tamil Nadu, and Karnataka, have also performed commendably, with installed capacities of 675 MW, 599 MW, and 594 MW. However, states like Uttar Pradesh, Bihar, and Jharkhand have yet to **tap into their RTS potential fully** and are facing challenges such as bureaucratic obstacles, inadequate infrastructure, and low public awareness.
- The **Pradhan Mantri Surya Ghar Muft Bijli Yojana** is a flagship initiative aimed at equipping one crore households with RTS systems and providing up to 300 units of free electricity per month.
- This scheme, which targets an average system size of 2 kW per household, aims to add 20 GW to India's RTS capacity.
- With a financial outlay of ₹75,021 crore, the scheme includes substantial financial assistance for consumers, incentives for distribution companies, support for local bodies and solar model villages, payment security mechanisms, capacity building, and extensive awareness and outreach efforts.
- It also encourages the adoption of advanced solar technologies, energy storage solutions, and smart grid infrastructure to bolster the nation's renewable energy landscape.

ABOUT THE PRADHAN MANTRI SURYA GHAR MUFT BIJLI YOJANA:

Launched by the Government of India in 2024 to provide free electricity to households through rooftop solar installations.

KEY DETAILS OF THE SCHEME:

- This scheme aims to install rooftop solar systems in 1 crore households across India and provide up to 300 units of free electricity per month to these households.
- The government is providing a subsidy of up to 60% of the cost for solar systems up to 2 kW capacity and 40% for systems between 2-3 kW. The subsidy is capped at 3 kW capacity.
- At current benchmark prices, the subsidy amounts to ₹30,000 for a 1 kW system, ₹60,000 for a 2 kW system, and ₹78,000 for a 3 kW or higher system.
- Households can apply for the scheme through the national rooftop solar portal and choose a vendor from the list provided. They can also access low-interest loans to cover the remaining costs after the subsidy.

- The total outlay for the scheme is ₹75,021 crore. It is expected to add 30 GW of rooftop solar capacity and reduce 720 million tonnes of CO2 emissions.
- The scheme is also expected to create around 17 lakh jobs in various sectors like manufacturing, supply chain, installation, and operations.

TO ENSURE ROBUST GROWTH OF ROOFTOP SOLAR (RTS) INSTALLATIONS, SEVERAL KEY STRATEGIES CAN BE IMPLEMENTED:

- **Increasing Awareness:** Educating consumers about the benefits of RTS is crucial. Awareness campaigns can highlight cost savings, environmental benefits, and the long-term sustainability of solar energy.
- **Enhancing Economic Viability:** Making RTS financially feasible for households is essential. Government subsidies are helpful, but there is a need for diverse low-cost financing options. Increasing the availability of RTS loans from both banks and non-bank financial companies can simplify the process, making it as accessible as obtaining loans for vehicles.
- **Promoting Research and Development:** Investing in R&D for solar technology, energy storage solutions, and smart-grid infrastructure can reduce costs, enhance performance, and improve the reliability of RTS systems. This innovation is vital for making solar energy more competitive and attractive to consumers.
- **Building a Skilled Workforce:** Initiatives like vocational training programs such as the ‘Suryamitra’ solar PV technician program should be expanded. These programs help in creating a skilled workforce capable of installing, maintaining, and servicing RTS systems efficiently.
- **Regulatory and Standards Enhancement:** Continuously reviewing and updating regulations related to net-metering, grid-integration standards, and building codes is essential. This ensures that the infrastructure supports RTS growth effectively and addresses emerging challenges.

MAINS BASED QUESTIONS:

Q. Discuss the Pradhan Mantri Surya Ghar Muft Bijli Yojana, which aims to ensure affordable and accessible renewable energy in every household as well as in remote areas.

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