



## PRADHAN MANTRI SURYODAYA YOJANA - GS III MAINS

**Q.** The Pradhan Mantri Suryodaya Yojana represents a promising initiative towards a brighter future powered by clean, renewable energy. Elucidate (10 marks, 150 words)

**News:** *PM chairs a meeting to launch “Pradhanmantri Suryodaya Yojana”*

### What's in the news?

- Immediately after his visit to Ayodhya on the auspicious occasion of consecration of Suryawanshi Bhagwan Shri Ram, Prime Minister chaired a meeting to launch “Pradhanmantri Suryodaya Yojana” with the target of installing rooftop solar on 1 crore houses at his residence at Lok Kalyan Marg.

### Pradhan Mantri Suryodaya Yojana:

- It is a newly announced scheme by the Indian government aiming to **install rooftop solar systems on 1 crore (10 million) households.**

### Meeting and Launch:

- The scheme was formally launched at the Prime Minister's residence on Lok Kalyan Marg.
- Prime Minister Modi emphasized the potential of rooftop solar to empower every household with abundant, renewable energy.

### National Campaign:

- A comprehensive national campaign will be launched to mobilize and encourage widespread adoption of rooftop solar among residential consumers.

### Target:

- 1 crore households, primarily focusing on low and middle-income individuals.

### Benefits:

- Reduced electricity bills for beneficiaries.
- Increased energy independence and self-reliance for households.

### TOP 10 STATES WITH HIGHEST ROOFTOP SOLAR CAPACITY

As on 31.12.2023

in MW

States	Rooftop solar
Gujarat	2,898.16
Maharashtra	1,716.3
Karnataka	1,562.11
Rajasthan	1,002.44
Kerala	512.67
Haryana	486.23
Tamil Nadu	449.22
Telangana	343.78
Punjab	298.92
MP	296.02



- Additional income generation through surplus electricity production.
- Contribute to India's ambitious clean energy and carbon reduction goals.

## Go back to basics:

### Significance of the Scheme:

#### 1. Provide affordable solar energy:

- By promoting rooftop solar, the government hopes to reduce dependence on traditional electricity sources, potentially lowering electricity bills for the targeted poor and middle-class households.

#### 2. Increase energy independence:

- Widespread adoption of rooftop solar could contribute to India's energy security by reducing reliance on fossil fuels and imports.

#### 3. Promote environmental sustainability:

- Increased dependence on solar energy aligns with India's climate goals for reducing carbon emissions and mitigating climate change.

### India's Climate Pledge:

- India's climate pledges, outlined in its Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC), are multifaceted and ambitious.

### Key Pledges (NDC):

#### 1. Emission Intensity Reduction:

- Reduce the emissions intensity of GDP by 45% below 2005 levels by 2030.

#### 2. Renewable Energy Share:

- Achieve 50% cumulative electric power installed capacity from non-fossil fuel sources by 2030.

#### 3. Carbon Sink Enhancement:

- Create an additional carbon sink of 2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent through additional forest and tree cover by 2030.

#### 4. Net-Zero Target:

- Achieve net-zero emissions by 2070.

#### 5. Updated NDC:

- The updated NDC also includes a qualitative target to promote a healthy and sustainable lifestyle, "LIFE" - "Lifestyle for Environment" as a key to combating climate change.
- The updated NDC was submitted to the UN and will be implemented over the period 2021-2030.



## **Pradhan Mantri Suryodaya Yojana and its expected contributions to India's Pledge:**

### **1. Reduction in Greenhouse Gas Emissions:**

- By promoting rooftop solar installations, PMSY directly adds to India's renewable energy capacity.
- This reduces reliance on fossil fuels for electricity generation, leading to a decrease in greenhouse gas (GHG) emissions.

### **2. Lowered Carbon Intensity:**

- The scheme aligns with India's NDC target of reducing the carbon intensity of its GDP by 45% by 2030 (compared to 2005 levels).
- As more households adopt rooftop solar, the overall carbon footprint of the electricity sector will decrease.

### **3. Reduced Dependence on Imports and Self Reliance:**

- Increasing domestic renewable energy generation makes India less reliant on imported fossil fuels, thereby enhancing energy security and reducing vulnerability to global price fluctuations.

### **4. Renewable Energy Share and Energy Security:**

- With widespread adoption, PMSY can significantly boost India's non-fossil fuel installed capacity, moving closer to the 50% goal.

### **5. Decentralized Electricity Generation**

- Rooftop solar promotes a decentralized model of electricity generation, making the grid more resilient and less susceptible to centralized disruptions.
- This contributes to India's NDC goal of creating an additional carbon sink of 2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent through additional forest and tree cover by 2030.

### **6. Carbon Sink Enhancement:**

- While not directly linked to carbon sink creation, the reduced emissions from rooftop solar indirectly support environmental conservation efforts and mitigate climate change, aligning with the carbon sink goal.

### **7. Improved air quality:**

- By reducing dependence on fossil fuels, PMSY can indirectly contribute to cleaner air, particularly in urban areas, aligning with India's focus on clean and healthy living.

### **8. Job creation:**

- The scheme is expected to create new jobs in the renewable energy sector, contributing to economic growth and development.

## **Potential Impacts of Pradhan Mantri Suryodaya Yojana:**

- Reduce India's annual CO<sub>2</sub> emissions by up to 30 million tonnes.
- Increase the share of renewable energy in electricity generation by up to 5%-10%.
- Create a ripple effect, fostering public awareness and adoption of clean energy solutions.



## WAY FORWARD:

### 1. Implementation and Coverage:

- Effective rollout, access to financing for low-income households, and proper integration with the grid will be crucial.

### 2. Technology and Efficiency:

- Advancements in solar technology and efficient utilization of generated energy are needed to maximize impact.

### 3. Policy Support and Sustainability:

- Long-term commitment to financial incentives and supportive policies will be essential for sustained growth.

### 4. Initial Investment:

- The upfront cost of installing rooftop solar can be a barrier for some households.
- Government subsidies and financing options will be crucial for wider adoption, especially among low and middle-income families.

### 5. Grid Integration:

- Integrating large-scale rooftop solar generation into the existing grid infrastructure needs careful planning and management to maintain grid stability and efficiency.

### 6. Capacity Building:

- Awareness and technical expertise regarding rooftop solar installation and maintenance need to be built among both consumers and installers to ensure the scheme's effectiveness.

The Pradhan Mantri Suryodaya Yojana represents a promising initiative towards a brighter future powered by clean, renewable energy. Its success will depend on effective implementation, outreach, and sustained support for participating households.