



PM-KUSUM

For Prelims: [PM-KUSUM](#), [Mahatma Gandhi National Rural Employment Guarantee Act](#), [Agriculture Infrastructure Fund \(AIF\)](#), [Priority Sector Lending \(PSL\) Guidelines](#), [Ground water resources](#)

For Mains: Recent Significant Developments in PM KUSUM, Major Challenges Related to PM-KUSUM.

Source: [PIB](#)

Why in News?

The **Union Minister of New Renewable Energy** furnished the **current status of the [Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan \(PM KUSUM\)](#)** scheme through a written response in Lok Sabha.

What is PM-KUSUM?

▪ About:

- The PM-KUSUM is a flagship scheme initiated by the Indian government in 2019 with the primary objective of transforming the [agricultural sector](#) **by promoting the adoption of solar energy solutions.**
- It operates on a demand-driven approach. Capacities are allocated based on the **demands received from various states and union territories (UTs).**
- Through various components and financial support, PM-KUSUM envisions achieving a significant **solar power capacity addition of 30.8 GW by March 31, 2026.**

▪ Objectives of PM-KUSUM:

- **De-dieselisation of the Farm Sector:** The scheme aims to reduce the **dependence on diesel for irrigation** by encouraging the use of [solar-powered pumps](#) and other renewable energy sources.
 - It also seeks to increase farmers' income by **reducing irrigation costs through the use of solar pumps** and enabling them to sell surplus solar power to the grid.
- **Water and Energy Security for Farmers:** By providing access to solar pumps and promoting **solar-based community irrigation projects**, the scheme aims to enhance water and energy security for farmers.
- **Curbing Environmental Pollution:** Through the adoption of clean and renewable solar energy, the scheme aims to mitigate **environmental pollution caused by conventional energy sources.**

▪ Components:

- **Component-A:** Setting up of 10,000 MW of **Decentralized Ground/Stilt Mounted Solar Power Plants** on barren/fallow/pasture/marshy/ cultivable land of farmers.
- **Component-B:** Installation of 20 Lakh Stand-alone Solar Pumps in off-grid areas.
- **Component-C:** Solarisation of 15 Lakh **Grid Connected Agriculture Pumps** through: Individual Pump Solarisation and Feeder Level Solarisation.

▪ Recent Significant Developments:

- **Extension of Scheme Duration:** PM-KUSUM has been extended until **March 31, 2026,**

to facilitate wider adoption of solar energy solutions among farmers.

- **State-Level Tendering:** State level tendering is allowed for the procurement of standalone solar pumps, making the process more streamlined and efficient.
- **Inclusion in AIF and PSL Guidelines:** The solarization of pumps under PM-KUSUM has been included in the [Agriculture Infrastructure Fund \(AIF\)](#) and [Priority Sector Lending \(PSL\) Guidelines of the Reserve Bank of India \(RBI\)](#), making it more accessible for farmers to access finance.

Note:

- **Agriculture Infrastructure Fund (AIF):** The AIF is a financing facility launched on **July 8, 2020** for creation of **post-harvest management infrastructure** and community farm assets.
 - Under this scheme, **Rs 1 lakh crore is to be disbursed by financial year 2025-26** and the interest subvention and credit guarantee assistance will be given till the year 2032-33.
- **Priority Sector Lending (PSL):** The RBI mandates banks to lend a certain portion of their funds to specified sectors, like agriculture, Micro, Small and Medium Enterprises (MSMEs), export credit, education, housing, social infrastructure, renewable energy among others.
 - All [scheduled commercial banks](#) and **foreign banks (with a sizable presence in India)** are mandated to set aside 40% of their [Adjusted Net Bank Credit \(ANDC\)](#) for lending to these sectors.
- **Major Challenges:**
 - **Geographical Variability:** Different regions in India have **varying solar radiation levels**, which can impact the efficiency and performance of solar installations.
 - Also, the effectiveness of solar pumps is contingent on **sufficient sunlight**, which can be challenging during periods of **heavy cloud cover or in regions with prolonged monsoons**.
 - **Land Availability and Aggregation:** The availability of suitable land for solar projects and the **aggregation of fragmented land parcels pose challenges** in setting up large-scale solar installations.
 - Land acquisition and aggregation can be time-consuming and may lead to delays in project execution.
 - **Inadequate Grid Infrastructure:** In regions where the **grid infrastructure is weak or unreliable**, integrating solar power into the grid can be challenging.
 - This can limit the benefits of the scheme, **especially for farmers looking to sell surplus solar power back** to the grid.
 - **Lack of Water Regulation:** With the adoption of **solar pumps**, there may be a **surge in irrigation demand** as farmers find it more accessible and cost-effective to pump water from underground sources.
 - The absence of proper water management practices could exacerbate **over-extraction through solar pumps and impact the long-term sustainability of [ground water resources](#)**.

Way Forward

- **Mobile Solar Pumping:** Implement mobile solar pump stations that can be moved to different locations based on irrigation needs.
 - This flexibility can **enhance water access for farmers in remote or changing agricultural areas**.
- **Water Regulation and Monitoring:** Implement effective water regulation policies and monitoring mechanisms to control groundwater extraction.
 - The government should **collaborate with local authorities to establish water extraction limits** based on aquifer recharge rates and overall water availability.
- **Linking it with MGNREGA:** To enhance the impact of PM-KUSUM and promote rural employment, the scheme can be linked with the [Mahatma Gandhi National Rural Employment Guarantee Act \(MGNREGA\)](#).
 - MGNREGA can support the **installation of micro-irrigation systems**, like drip and sprinkler irrigation, **to complement the use of solar pumps**.

- This combination can significantly **improve water-use efficiency and crop productivity.**

UPSC Civil Services Examination Previous Year Question (PYQ)

Mains

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

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