

## Government of India Facilitating Solar Farming as a Source of Passive Income

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### **What is A Solar Farm?**

A solar farm is a large collection of photovoltaic (PV) solar panels that absorb energy from the sun, convert it into electricity and send that electricity to the power grid for distribution and consumption by customers like you. Solar farms which you'll sometimes see being called solar parks or photovoltaic power stations are usually mounted to the ground instead of rooftops and come in all shapes and sizes. PM-KUSUM was started on 8 March 2019. In India the top most state is Haryana in using KUSUM scheme. PM-KUSUM was launched by *Ministry of new and renewable energy*.

### **Objective of PM-Kusum**

The PM KUSUM scheme aims to promote the use of renewable energy in the agricultural sector and offer the benefits of solar farming to Indian farmer. The solar business in India is one of the most profitable. The PM KUSUM scheme aims to promote the use of renewable energy in the agricultural sector and offer the benefits of solar farming to Indian farmer.

### **Policies supporting solar power irrigation in India**

Under Component – C of the Scheme 10 Lakh Grid- connected Agriculture Pumps of individual pump capacity up to 7.5 HP are targeted to be solarized by 2022. Component-C of PM-KUSUM (Pradhan Mantri Urja Suraksha evam Utthaan Mahabhiyaan) scheme is a new initiative from the government of India aimed at ensuring reliable day time power supply for irrigation, reduces subsidy burden on discoms and providing additional sources of income to the farmers.



The first solar power plant under the PM-KUSUM Scheme has been set up in India at Bhaloji, Jaipur. Bhadla solar park (world's largest solar power plant 14000 acre) in jodhpur district of Rajasthan. The park has a total capacity of 2245MW. 1MW solar power plant can produce 1584000-unit electricity per year and if considered at the rate of rupees 3.5/unit which will get from state government under PM-KUSUM scheme. The revenue generated by 1MW will be  $1584008 \times 3.5 = \text{₹}5,544,000/\text{per year}$ .

### **Types of Solar Farms**

The tens of thousands of solar panel installations in the U.S., they can be grouped into two types of solar farms, both based on size.

#### **1. Utility-Scale Solar Farms**

First and foremost, the phrase “utility-scale” can be a bit misleading. Technically, all solar energy projects -whether it's a few rooftop panels or a whole acre of them -are “on the grid” providing the local utility company with solar-powered electricity. The only time a solar energy project is not truly utility-scale is when it's completely disconnected from the grid and not connected through a power line. This is almost never the case.

#### **2 Community Solar Farms**

Community solar farms are small-scale solar facilities that generate around 5 MW of electricity for a local community of homes and businesses. The power is shared among everyone who participates in the program. Depending on the number of residents and the amount of production, the residents could get a reduction in their electricity bill for investing in this solar project.

#### **Renewable energy resources at global level: -**

- Renewable energy is the fastest growing energy source in the United States. Increasing 42 percent from 2010 to 2022 (up 90 percent from 2000 to 2022).
- Renewable made up nearly 20 percent of utility-scale US electricity generation in 2022, with the bulk coming from hydropower 7.3% and wind power 8.4%
- solar generation (including distributed), which made up 3.3% of total U.S generation in 2022, is the fastest-growing electricity source.
- Globally, renewable made up to 29 percent of electricity generation in 2020, much of it from hydropower 16.8%



- A record amount of over 256 GW of renewable power capacity was added globally during 2022.
- Renewable ethanol and biodiesel transportation fuels made up more than 17% of total U.S renewable energy consumption in 2022, a decrease from recent years.

#### **Policies for solar pumps in Rajasthan: -**

1. **Electricity act, 2003:** Taking conducive measures to develop electricity industry. An Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity by taking the following measures.
2. **National electricity policy,2005:** The Act seeks to encourage competition with appropriate regulatory intervention. Competition is expected to yield efficiency gains and in turn result in availability of quality supply of electricity to consumers at competitive rates.
3. **Tariff policy,2006:** The Tariff Policy included certain provisions regarding renewable energy and cogeneration. Under the Electricity Act 2003 and the National Tariff Policy 2006, the central and the state electricity regulatory commissions must purchase a certain percentage of grid-based power from renewable sources.
4. **Integrated energy policy,2006:** The Integrated Energy Policy, released in August 2006, addresses all aspects of energy, including energy security, access and availability, affordability and pricing, efficiency and the environment.
5. **National action plan on climate change (NAPCC), 2008:**The National Action Plan on Climate Change (NAPCC) was released by the Prime Minister on 30th June 2008. country to adapt to climate change and enhance the ecological sustainability of India's development path.
6. **Generation based incentives (GBIs)for solar:** Generation Based Incentive (GBI) for 3 year offers INR 2.00 per unit (kWh) of Gross Solar Energy generated. The Generation Based Incentive (GBI) Scheme of MNRE is the Indian Renewable Energy Development Agency (IREDA) for Wind and Solar Power projects within India.
7. **Jawaharlal Nehru National Solar Mission (JNNSM), 2010:**The Jawaharlal Nehru National Solar Mission (JNNSM), or the National Solar Mission, is an initiative of the Government of India and State Governments to promote solar power in India.



Inaugurated in January 2010, the JNNSM has been revised twice and now boasts a target of 100 GW of solar PV by 2022.

8. **Renewable energy certificates (RECs), 2011:** It is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation.
9. **Clean energy cess, 2010:** The purpose of this cess was financing and promoting clean energy initiatives, funding research in the area of clean energy, or for any other purpose relating thereto. This cess is leviable in addition to any cess or duty leviable on the goods specified in the Tenth Schedule to the Finance Act, 2010.
10. **Joint liability group (JLG) for off grid installations:** Joint Liability Group (JLG) for off-grid installations by synthesizing market and collective capacity, an assembly of 4-10 entrepreneurs may join locally, as JLG are helping to make loans available for non-agricultural ventures that would be important to microgrid systems.
11. **Corporate social responsibility (CSR):** CSR includes bringing value to the community and generating a positive impact. Corporate Social Responsibility (CSR) is the idea that a company should play a positive role in the community and consider the environmental and social impact of business decisions.

### **The subsidy for Kusum yojana**

The state government will give a subsidy of 30% and the remaining 40% will be provided by the farmer. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and remaining up to 30% of the cost as loan. For component B & C in northern eastern states, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N islands, central finance assistance (CFA) subsidy of 50% of the benchmark cost / the tender cost whichever is lower, of the standalone solar pump will be provided.

### **Subsidy by Rajasthan Government**

Government of Rajasthan Kusum yojana 2022 under this scheme, the government will provide solar pumps for 4500 farmers of the state, for which the government has set a budget of Rs. 11.85 crore. To take advantage of this scheme, you should contact the horticulture department of your area.