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Training Manual

Citizen Service Center (CSC) Operators' Training Manual for PM KUSUM Application Support in Uttar Pradesh, India

Ramsha Khan, Anurag Banerjee, K C Shukla, and Deepak Varshney

October 2026



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To learn more about CGIAR Scaling for Impact (S4I) Program, please contact: scaling@cgiar.org

About Solar Energy for Agricultural Resilience (SoLAR)

International Water Management Institute (IWMI) has launched the second phase of the Solar Energy for Agricultural Resilience (SoLAR) project, supported by the Swiss Agency for Development and Cooperation (SDC). Running from July 2025 to December 2029, this new phase expands both the geographical and thematic scope of the initiative to strengthen climate resilience and drive agricultural transformation through solar energy. Building on the achievements and lessons of Phase 1 (December 2019-May 2024) across Bangladesh, India, Nepal, and Pakistan, Phase 2 extends the project's reach to Ethiopia and Kenya, while scaling up interventions in Bangladesh and India. Through South-South collaboration, SoLAR aims to establish solar-powered agricultural systems as a replicable and scalable model for sustainable, socially inclusive, and climate-resilient agriculture across the Global South.

About CGIAR Scaling for Impact (S4I) Program

The CGIAR Scaling for Impact Program tackles global poverty, food insecurity, and climate risks by applying transdisciplinary science, fostering partnerships, generating evidence, and delivering integrated solutions to maximize impact and minimize duplication in Bangladesh, Benin, Cambodia, Colombia, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Guatemala, Honduras, India, Indonesia, Kenya, Malawi, Mexico, Morocco, Myanmar, Nepal, Nigeria, Pakistan, Peru, Philippines, Senegal, Sri Lanka, Sudan, Tanzania, Tunisia, Uganda, Uzbekistan, Vietnam, Zambia, and Zimbabwe.

Website: <https://www.cgiar.org/cgiar-research-portfolio-2025-2030/scaling-for-impact/>

About CGIAR

CGIAR is a global research partnership for a food secure future.

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Front cover photo: Primary Survey Organization

Back cover photo: Primary Survey Organization

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About the manual

In India, solar irrigation pumps (SIPs) are primarily promoted through public programs that provide capital subsidies. Under the *Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan* (PM KUSUM) scheme, the Government of India (GoI) aims to solarize 5 million pumps, with more than 2 million installations completed as of December 2025. Access to these subsidies requires farmers to apply through online state government portals. In practice, limited awareness, procedural complexity, uncertainty around eligibility and costs, and weak last-mile application support continue to constrain participation, particularly among small, marginal, and women farmers.

Citizen Service Centers (CSCs), established under the National e-Governance Plan, were created to extend last-mile digital access to public services (Das and Bhattacharjee, 2011). CSCs deliver a wide range of services, including identity documentation, banking and financial inclusion, welfare schemes, and agriculture-related applications. Although PM KUSUM applications are not yet formally routed through CSCs, their scale and reach—4,45,338 operational centers covering nearly every village or gram panchayat—position them as a critical interface between government digital systems and rural communities (MeitY, GoI, 2026). CSC operators, functioning as village-level entrepreneurs, routinely support farmers with information, documentation, and online processes, making them well suited to facilitate scheme access.

This manual forms part of a broader study by the International Water Management Institute (IWMI) on institutionalizing Energy Extension Agents (EEAs) and CSCs to promote solar irrigation adoption across 96 villages in Uttar Pradesh. The study examines how leveraging existing service delivery institutions influences farmer demand for and uptake of SIPs. Based on the evidence generated, IWMI aims to make the case for formally integrating these grassroots institutions into the PM KUSUM ecosystem.

Although PM KUSUM applications are not formally channeled through CSCs, this manual provides targeted, practical guidance to enable CSC operators to assist farmers interested in applying for SIPs under PM KUSUM. Leveraging CSCs' proximity to farming households and familiarity with government portals can reduce procedural barriers, lower transaction costs, and limit farmers' reliance on informal intermediaries. The specific purpose of this manual is to strengthen the capacity of CSC operators to support farmers under the PM KUSUM scheme by enhancing their understanding of: a) solar irrigation pumps and their benefits; b) eligibility criteria, documentation requirements, and application workflows; and c) common farmer queries and misconceptions. This approach offers a scalable pathway for integrating solar irrigation adoption within existing public service delivery systems, rather than creating parallel institutional arrangements.

The guidance presented in this manual informed the training and facilitation activities implemented across 32 villages in Uttar Pradesh under IWMI's Scaling for Impact (S4I) program. Evidence from this pilot, as documented in the accompanying implementation report, shows that CSC-led facilitation increased farmer engagement and enabled direct submission of PM KUSUM applications, demonstrating the operational relevance of the manual.

IWMI's Role within CGIAR Scaling for Impact

IWMI's role in this activity is to design and test an institutional facilitation model and generate evidence of its effectiveness in improving farmers' access to PM KUSUM. IWMI does not implement PM KUSUM or undertake pump installation; scheme implementation remains the responsibility of government agencies and authorized vendors. The manual is intended to support learning and inform future program design and institutional integration. This training manual has been developed by the International Water Management Institute (IWMI) under the CGIAR- S4I (AoW2) program.

Chapter 1: Solar Irrigation Pumps and their benefits

A solar irrigation pump (SIP) uses solar energy to lift water for irrigation. Solar photovoltaic (PV) panels convert sunlight into electricity, which powers a pump to draw water from sources such as wells or surface streams (*Figure 1*).

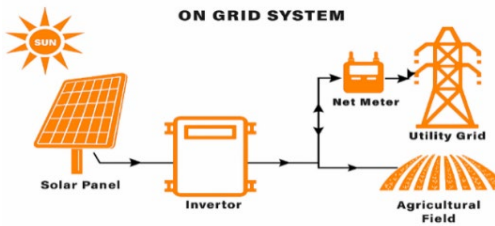
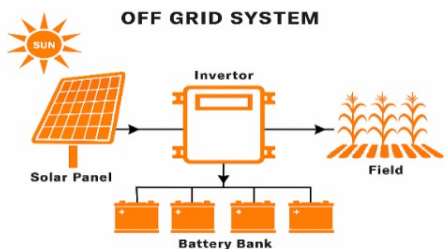
Key benefits include:

- Reduced reliance on fossil-fuel-based electric and diesel pumps, with possible implications for lowering greenhouse gas emissions.
- Solar PV systems provide a dependable power source especially in remote areas with limited or unreliable grid electricity.
- Reliable daytime operation can help potentially reduce water and energy wastage associated with unattended nighttime pumping.
- Farmers can use solar-generated electricity for irrigation and sell surplus power to distribution companies (DISCOMs) at pre-determined rates, thereby creating an additional income stream.
- It offers long-term cost stability compared to volatile fuel prices.



Figure 1: Solar-powered pump.
Source: Prashanth Vishwanathan/IWMI

Different models of SIPs

Aspect	On-grid solar irrigation system	Off-grid solar irrigation system
Schematic	 ON GRID SYSTEM	 OFF GRID SYSTEM
	<i>Figure 2: An on-grid model of solar irrigation</i> Source: Generated with AI and reviewed by the authors	<i>Figure 3: An off-grid model of solar irrigation</i> Source: Generated with AI and reviewed by the authors
Main components	PV panels, inverter, pump, grid connection, meter	PV panels, inverter, pump, battery bank (optional), charge controller
Process	Sunlight → Solar panels produce DC electricity → Inverter converts DC to AC → AC electricity runs the irrigation pump → Pump irrigates crops	Sunlight → Solar panels produce DC electricity → Can be directly used/Inverter converts DC to AC → AC electricity runs the irrigation pump → Pump irrigates crops
Dependence on grid	Requires grid connectivity	Doesn't require grid connectivity
Use of surplus electricity	Surplus/unused electricity (if any) goes to the grid → DISCOM gives credit/payment for surplus power	Extra electricity (if any) can be stored in batteries for later use or can be leveraged for other productive purposes such as paddy milling.
PM KUSUM component	Promoted under component C1	Promoted under component B
Key economic benefits	Potential for reduced electricity bill and/or extra income from exported power; no fuel use	Suitable for locations without grid-connectivity; can provide power where grid-connectivity is unreliable

Chapter 2: Government schemes and financing

The Government of India (GoI) has taken various policy measures to increase the installed capacity of power generation from non-fossil fuel sources by 2030. To provide energy and water security to farmers and enhance their income, de-dieselize the farm sector, and reduce environmental pollution, Ministry of New and Renewable Energy (MNRE), GoI, launched PM KUSUM on March 8, 2019.

During 2020-21, the scheme was scaled up and expanded from its pilot stage and notified with the due approval of the Ministry of Finance (MoF), GoI. In August 2022, the scheme was extended till March 2026. The MNRE is now planning phase 2 of the PM KUSUM scheme in April 2026.

The scheme comprises three components: A, B, and C. However, CSC operators will be trained in component B and C1's application process, as these components primarily target individual farmers.

- **Component A:** Setting-up of 10,000 MW of decentralized Ground/ Stilt-mounted grid-connected solar or other renewable energy-based power plants.
- **Component B:** Under this component, farmers with **stand-alone pumps (diesel pumps)** will be supported to solarize their pumps. The objective is to de-dieselize irrigation through 1.4 million off-grid solar pumps. Eligible beneficiaries include individual farmers, groups, Water User Associations (WUAs), Farmer Producer Organizations (FPOs), Primary Agricultural Credit Societies (PACS), and cluster systems. Central Financial Assistance (CFA) of 30% (50% for Northeastern/hilly states, Union Territories, and islands) of benchmark or tender cost is provided. State Implementing Agencies (SIAs) manage applications, vendor empanelment, beneficiary vendor selection, site survey, and installation with five-year warranty and insurance, as per MNRE guidelines.
- **Component C:** Under this component, the aim is to solarize existing **3.5 million grid-connected agricultural pumps** of a total **11.2 GW** capacity. It further has two components wherein 50% of the solar capacity (11.2 GW) would be installed through solarization at the individual level (C1), and 50% through solarization of agricultural feeders (C2).
 - **PM KUSUM component C1 (Individual Pump Solarization, IPS):** Under this component, individual farmers with grid connected agricultural pumps will be supported to solarize pumps.
 - **PM KUSUM component C2 (Feeder Level Solarization, FLS):** Under PM KUSUM component C2, agricultural feeders—either dedicated or feeders with major agricultural load—may be solarized by installing solar power plants of sufficient capacity near the identified distribution sub-stations to meet the aggregate electricity requirement of the irrigation load on that feeder.

All three components of the scheme aim to add solar capacity of about 34,800 MW by March 2026, with the total central financial support of USD 3.79 billion¹, including service charges to the implementing agencies.

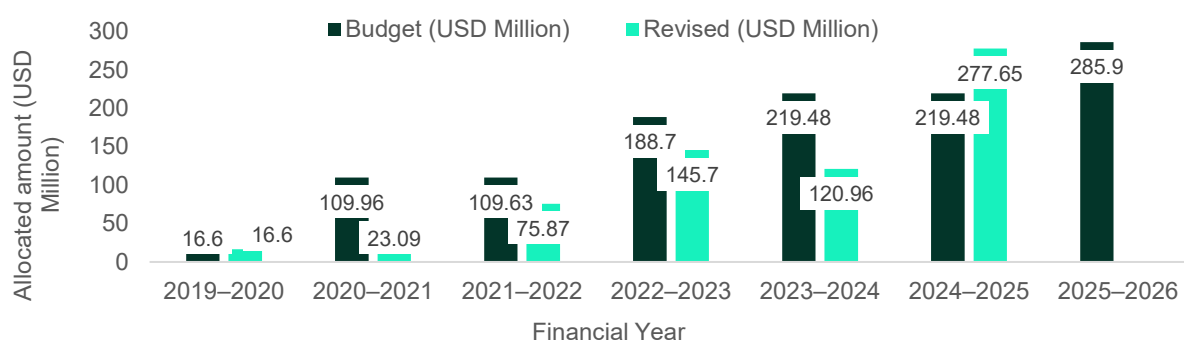


Figure 4: The financial year-wise amount allocated to PM KUSUM (in USD Million) since its inception in 2019.
Source: (MoF, 2023; 2024; 2025)

Note: This module covers PM KUSUM components B and C1 with an emphasis on supporting small and marginal, and female farmers.

¹ A conversion rate of INR 90.94 per USD has been used

PM KUSUM component B v/s C1

Overview of features of PM KUSUM components B and C1 in Uttar Pradesh

	Component B	Component C1
<i>Implementing agency</i>	Department of Agriculture and Farmers' Welfare (DoA&FW), Uttar Pradesh	Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA).
<i>Eligibility</i>	Individual farmers, WUAs, and community/cluster-based irrigation system eligible under the scheme.	Individual farmers with electricity connection
<i>Subsidy</i>	Limited to 7.5 hp. Higher-capacity pumps are allowed, with a subsidy limit of up to 7.5 hp.	Limited to 7.5 hp. Higher-capacity pumps are allowed, with a subsidy limit of 7.5 hp only.
<i>Subsidy structure</i>	- Central Government: 30% - UP Government: 30% - Farmer: 40% <i>Source: DoA&FW, Uttar Pradesh</i>	- Central Government: 30% - UP Government: 60% - Farmer's share: 40% <i>Source: UPNEDA</i>
<i>Subsidy structure- for marginalized communities</i>	Not as of now	- Central Government: 30% - UP Government: 70% - For the Scheduled Tribe, Vantangia and Musahar caste farmers.
<i>Tariff</i>	Not applicable	Tariff discovered/fixed by SERC; DISCOM buys surplus power
<i>Bank finance</i>	According to the agriculture department, there is a provision for a 3% interest rebate (totaling 6%) from the central and state governments under the Agricultural Infrastructure Fund (AIF) for farmers who take a loan from a bank and deposit their share	
<i>Farmer benefit</i>	Reduced irrigation cost	Lower electricity bills + extra income from surplus power sale

Pump capacity-wise solar power plant cost distribution in Uttar Pradesh under component C1

Pump capacity (hp)	Solar power plant capacity (kW)	Rate per plant, including GST (USD)	Subsidy and farmer's contribution per plant (USD)			Farmer's share (10%)
			Central government (30%)	State government (60%)	Total grant	
3	4.5	2,628.11	788.43	1,576.86	2,365.29	262.81
5	7.5	4,324.39	1,297.32	2,594.64	3,891.96	432.44
7.5	11.2	6,026.01	1,807.80	3,615.61	5,423.41	602.6
10	14.9	7,915.00	1,807.80	3,615.61	5,423.41	2,492.59 ²

Source: UPNEDA

² A conversion rate of INR 90.94 per USD has been used

Chapter 3: Methods of procurement of subsidized SIPs

This chapter provides CSC operators with a practical, step-by-step understanding of how farmers can procure subsidized SIPs under PM KUSUM components B and C1. Given the procedural complexity and multiple verification stages involved in the application process, farmers often require hands-on assistance to complete registrations, submit documents, and navigate both online and offline steps. By detailing the complete application workflows for each component, this chapter equips CSC operators to guide farmers accurately, reduce application errors, and improve the likelihood of successful enrolment under the scheme.

PM KUSUM C1: Step-by-Step application process.

- **Step 1:** Click on '**Click here for New Registration**' for farmers' registration



- **Step 2:** Enter mobile number, full name and captcha code and click on '**Get OTP**' button. An SMS will be received on the registered mobile number for the OTP.

The screenshot displays the 'New Farmer Registration/नये किसान का पंजीकरण' form. It includes the UPNEDA logo and agency details. The form fields are: Mobile Number* (मोबाइल नम्बर), Full Name* (पूरु नाम), and Captcha/कैप्चा* (3x86m). Below these are input boxes for 'Enter Mobile Number', 'Enter Full Name', 'Enter Captcha/कैप्चा भरे', and 'Enter Captcha Code'. There are two buttons: 'Get OTP' (green) and 'Reset/रीसेट करें' (red). A link for 'Already have an Account? Login Here' is also present. The footer contains copyright information for UPNEDA and mentions it is maintained by Daradhya Infotech.

- **Step 3:** Fill the OTP in the respective area and click on '**Submit OTP/Register**' button.

UPNEDA
Uttar Pradesh New & Renewable Energy Development Agency
Department of Additional Sources of Energy,
Government of Uttar Pradesh
भीष्म कुमुद घटक C -1 योजना के अंतर्गत निजी सौर पम्प के संचालन प्रारंभ हेतु

New Farmer Registration/नये किसान का पंजीकरण
Already have an Account? [Login Here](#)
क्या पहले से पंजीकृत है? [लॉगिन करें](#)

OTP is 499341 for New Registration. !!

Mobile Number*
मोबाइल नम्बर
9264949932

Full Name*
पूर्ण नाम
JAY KUMAR

Captcha/कैप्चा
B3FZW

Enter Captcha/कैप्चा भरें
3x86m

Get OTP

Reset/रीसेट करें

Submit OTP/Register

499341

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Maintained by Agaradha Infotech

- **Step 4:** A message will be displayed for successful registration.

localhost:53146 says

Your Registration Successfully Done, Your OTP is your Password.!!

OK

- **Step 6:** A complete form with respective fields will appear on the screen which is to be filled by the farmer after successful login.

- 

Uttar Pradesh New & Renewable Energy Development Agency

Department of Additional Sources of Energy, Government of Uttar Pradesh

पीएम कुसुम पट्टक 0-1 योजना के अंतर्गत निजी ऑनग्रेड पावर के सोलरइलेक्ट्रिक हेतु



Home
Logout

आवेदन का विवरण

Application No.	Name	Father Name	Mobile No	District	Verify
UPNKC1000001	Mohd. Rais Ahmad Khan	Late Barkat Allaha Khan	8318519685	Lucknow	Select
UPNKC1000002	Ganga Ram	Madari	8318218860	Lucknow	Select
UPNKC1000003	Preetam Singh	Gopal Singh	9721730270	Kheri	Select
UPNKC1000004	Lala Ram	Late Sitaram	8874116641	Hardoi	Select
UPNKC1000005	Shobha Lal	Hori Lal	8130357852	Hardoi	Select
UPNKC1000006	Sangay Kumar Tiwari	Ram Naresh Tiwari	7985430157	Hardoi	Select

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Uttar Pradesh New & Renewable Energy Development Agency

Department of Additional Sources of Energy, Government of Uttar Pradesh

प्रधान मंत्री कृषि सिंचन योजना के अंतर्गत ग्रामीण सौर पंप प्रकल्प का शुभारंभ



आवेदन का विवरण

आवेदक का एप्लीकेशन नंबर :	UPNKIC1000001		
आवेदक का नाम :	Mohd. Rais Ahmad Khan	मिल जमीनी का नाम :	Late Barkat Allaha Khan
किस आवेदक प्रकार / वास्तुशिल्पी / अनुसूचित जनजाति केगी का है ?	गौरी	केसी:	कोई नहीं
जन्मस्थान :	Lucknow	विकास स्थान :	BAKSHI KA TALAB
ग्राम :	AH-MEDPUR KHERA	पोस्टल कोड :	8318519685
पूर्व में स्थापित नाम की क्षमतायुक्ति मै.	एचपी मै.	पूर्व में स्थापित नाम की क्षमतायुक्ति मै.	S
मॉडल / ब्रा - मॉडल :	मैट्रॉ	मुद्रा धारण डिवाइस का नाम :	MVNL
विद्युत कनेक्शन की संख्या :	9572000000	मिटरि ओमीटर नाम के सोलायुक्तक हेतु आवेदक की संख्या :	इ
सौर पंपिंग लगाने के लिए सौर पंप उपकरण बनाने के लिए आवेदक की संख्या:	इ	घरों आवेदक प्रकार / वास्तुशिल्पी / अनुसूचित जनजाति केगी का नहीं है तो उस घर में क्या आवेदक 10 प्रतिशत का अधिकतम अवकाश देने के लिए संभव है :	इ
Level-1 अधिकारी का नाम :	Sri Shiv Ram	राज्य का नाम :	Gram Vikas Adhikari/Gram Panchayat Adhikari
मिटरि:	OK	स्थापना दिनांक:	02/06/2023
Level-2 अधिकारी का नाम :	Sri Vishal Chaudhary	राज्य का नाम :	J.E
मिटरि:	OK	स्थापना दिनांक:	02/06/2023
Make Payment Rs.-42675.00		Back	View Attachment

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- **Step 9:** The applicant must submit the application form at the UPNEDA office located in the nearest block.
- **Step 10:** The applicant will first receive a form from the UPNEDA office. This form must be submitted at the nearest power station (*Bijli Ghar*), where a designated Junior Engineer will verify the electricity connection. Following this, the applicant must take the same form to the *Lekhpal*, who will verify the tubewell connection.
- **Step 11:** This form needs to be taken to the UPNEDA office for submission.
- **Step 12:** After submission, the applicant may complete the payment online at the UPNEDA office itself. For offline payment, the applicant can deposit the amount in the designated bank account, the details of which will be provided by the office.
- **Step 13:** The bank will provide a receipt with a UTR number which needs to be submitted at the UPNEDA office for the records and verification of payment. Post-submission of the verification report by the Level 1 and Level 2 officers, the application will be successfully recorded in the system.
- **Required documents:**
 - I. An electricity bill with an LMV-5 connection for the relevant details. E.g.: Consumer/CA number
 - II. Aadhar Card

PM KUSUM B: Step-by-Step application process

a. Steps for registration

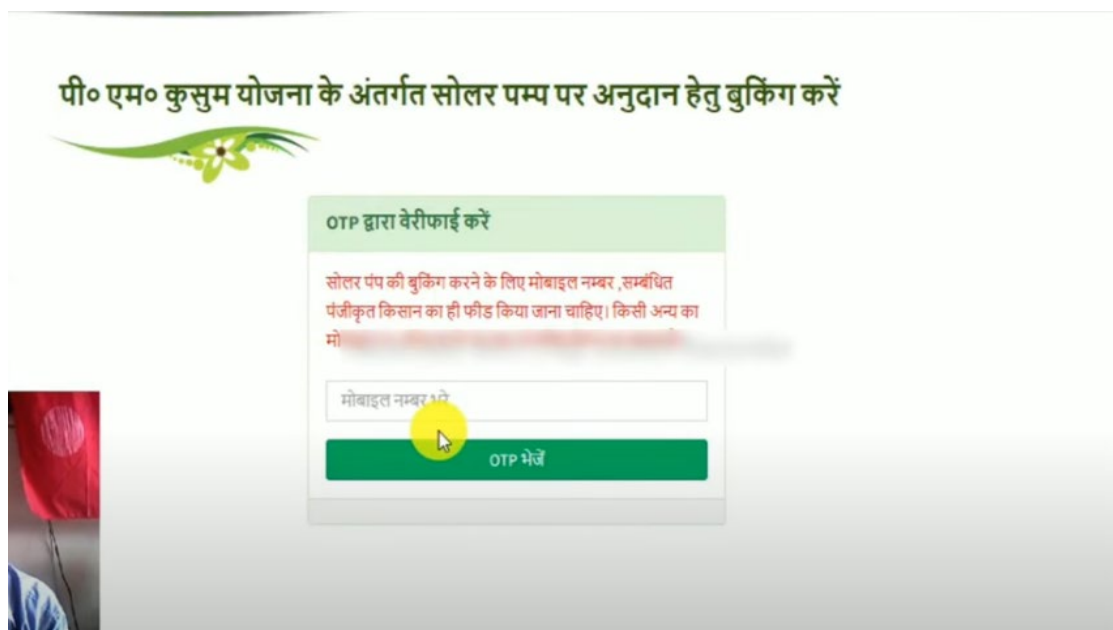
- **Step 1:** Click on '**Book for solar pump**' at <https://agriculture.up.gov.in/>



- **Step 2:** Click on '**Booking for solar pump**'



- **Step 3:** Enter your mobile number. An OTP will be sent to your registered mobile number.



- **Step 4:** Enter the received OTP

पी० एम० कुसुम योजना के अंतर्गत सोलर पम्प पर अनुदान हेतु बुकिंग करें

OTP द्वारा वेरीफाई करें

आपके मोबाइल नम्बर **75xxxx5741** पर भेजा गया OTP 15 मिनट के लिए मान्य होगा. कृपया 15 मिनट के अंदर OTP भर कर कु

264719

OTP वेरीफाई करें

- **Step 5:** Choose '*Kisan ID*' from the dropdown menu as shown below and enter your '*Kisan ID*.'

किसान का विवरण भरें

मोबाइल नम्बर जिसकी बुकिंग की जा रही है : **75xxxx5741**

कृषक पंजीकरण संख्या का विकल्प चुने संख्या भरें

चयन करें

चयन करें

कृषक पंजीकरण संख्या भरें

बैंक खाता संख्या से पंजीकरण संख्या खोजें

कृषक पंजीकरण संख्या

किसान का विवरण

किसान का नाम	गाँव
पिता का नाम	ब्लाक
मोबाइल नंबर	जिला
	राजस्व ग्राम

खोजें रीसेट

- **Step 6:** Choose the pump type and size based on the depth as shown below.

घोषणा पत्र

बुकिंग करने से पूर्व यह सुनिश्चित कर ले कि जिस भूमि पर सोलर पंप की स्थापना की जानी है वहां

- ☐ 2 HP DC सर्फेस सोलर पम्प के लिए 4 इंच की बोरिंग तथा जल स्तर 22 फिट तक
- ☐ 2 HP AC सर्फेस सोलर पम्प के लिए 4 इंच की बोरिंग तथा जल स्तर 22 फिट तक
- ☐ 2 HP DC सबमर्सिबल सोलर पंप के लिए 4 इंच की बोरिंग तथा जल स्तर 50 फिट तक
- ☐ 2 HP AC सबमर्सिबल सोलर पंप के लिए 4 इंच की बोरिंग तथा जल स्तर 50 फिट तक
- ☐ 3 HP DC सबमर्सिबल सोलर पम्प के लिए 6 इंच की बोरिंग तथा जल स्तर 150 फिट तक
- ☐ 3 HP AC सबमर्सिबल सोलर पम्प के लिए 6 इंच की बोरिंग तथा जल स्तर 150 फिट तक
- ☐ 5 HP AC सबमर्सिबल सोलर पम्प के लिए 6 इंच की बोरिंग तथा जल स्तर 200 फिट तक
- ☐ 7.5 HP AC सबमर्सिबल सोलर पम्प के लिए 8 इंच की बोरिंग तथा जल स्तर 300 फिट तक
- ☐ 10 HP AC सबमर्सिबल सोलर पम्प के लिए 8 इंच की बोरिंग तथा जल स्तर 300 फिट तक

- **Step 7:** You will receive a message as shown below

usum.upagriculture.com/token/solartoken.aspx

pmkusum.upagriculture.com says

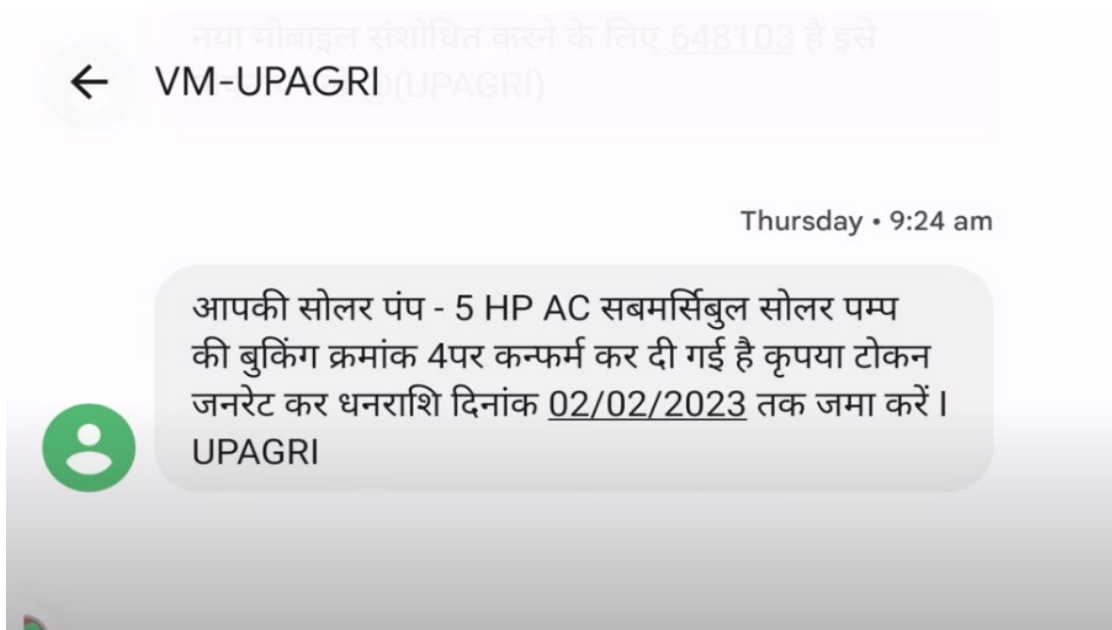
आपके द्वारा घोषणा पत्र में 2 HP DC सबमर्सिबल सोलर पंप के लिए 4 इंच की बोरिंग तथा जल स्तर 50 फिट तक विकल्प को चुना गया है, तथा आपके चयन के अनुसार सोलर पंप - 2 HP DC सबमर्सिबल [टोकन धनराशि : 58853.00] सोलर पंप चयनित हुआ है, कृपया आप आगे बढ़ना चाहते हैं

आपके द्वारा चयनित बोरिंग के अनुसार उपयुक्त सोलर पंप

सोलर पंप - 2 HP DC सबमर्सिबल [टोकन धनराशि : 58853.00]

☒ सत्यापन में उपयुक्त बोरिंग एवं जल स्तर न पाए जाने पर आपकी बुकिंग निरस्त कर दी जायगी, क्या आप आगे बढ़ना चाहते हैं

- **Step 8:** You will be directed to a payment gateway for submission of **USD 55.02⁴** for registration. Thereafter, you will receive a confirmation message as shown below.



- **Step 9:** Click on '**Solar Pump-wise report**' to check the booking status.



⁴ A conversion rate of INR 90.94 per USD has been used

- **Step 10:** Click underneath ‘*Solar Pump total target*’ to check the booking status.

PM Kusum Solar Pump Token Report

Financial Year: 2023-24 Name of the scheme: प्रधानमंत्री किसान ऊर्जा सुरक्ष View Details

#	Name of the scheme	Solar Pump Total Target	Total bookings done till now	Total bookings confirmed till now	Total Bookings in Waiting List	Total tokens cancelled due to non-deposit of token amount in the bank	Total tokens deposited in the bank so far	Total boring verification of over-exploited block by Deputy Director of Agriculture
1	Prime Minister Kisan Energy Security and Upliftment Campaign (PM Kusum) Solar Pump Scheme – 2023-24	30000	28384	28384	0	7385	20928	2501
Total Sum		30000	28384	28384	0	7385	20928	2501

print Report

- **Step 11:** Click underneath ‘*Total bookings done till now*’ against the earlier selected pump size.

PM Kusum Solar Pump Token Report

Financial Year: 2023-24 Name of the scheme: प्रधानमंत्री किसान ऊर्जा सुरक्ष View Details

Name of the scheme: Prime Minister Kisan Energy Security and Upliftment Campaign (PM Kusum) Solar Pump Scheme – 2023-24

#	Name of the solar pump	Solar Pump Total Target	Total bookings done till now	Total bookings confirmed till now	Total Bookings in Waiting List	Total tokens cancelled due to non-deposit of token amount in the bank	Total tokens deposited in the bank so far	Total boring verification of over-exploited block by Deputy Director of Agriculture
1	Solar Pump - 10 HP AC Submersible	2000	1960	1960	0	1024	929	162
2	Solar Pump - 2 HP AC Submersible	1000	843	843	0	216	626	9
3	Solar Pump - 2 HP AC Surface	1700	1571	1571	0	266	1300	21
4	Solar Pump - 2 HP DC Submersible	800	663	663	0	165	497	13
5	Solar Pump	1300	1194	1194	0	186	1007	16

- **Step 12:** Click underneath ‘**Solar Pump Target**’ against the respective district.

Token Report / Solar Pump Wise Token Report

Financial Year	2023-24	Name of the scheme		प्रधानमंत्री किसान ऊर्जा सुर	View Details			
Name of the scheme: Prime Minister Kisan Energy Security and Upliftment Campaign (PM Kusum) Solar Pump Scheme – 2023-24								
Name of the device : Solar Pump - 10 HP AC Submersible								
#	Name of the district	Solar Pump Total Target	Total bookings done till now	Total bookings confirmed till now	Total Bookings in Waiting List	Total tokens cancelled due to non-deposit of token amount in the bank	Total tokens deposited in the bank so far	Total boring verification of over-exploited block by Deputy Director of Agriculture
1	Amethi	7	7	7	0	3	4	0
2	Ambedkar Nagar	15	15	15	0	11	4	0
3	Amroha	50	50	50	0	23	27	23
4	Ayodhya	11	11	11	0	5	5	0
5	Aligarh	25	25	25	0	9	16	3
6	Agra	25	24	24	0	16	8	6
7	Azamgarh	7	7	7	0	4	3	0
8	Etawah	12	12	12	0	4	8	0
9	unnao	35	34	34	0	13	21	0
10	Etah	44	43	43	0	32	11	4
11	auraiya	11	11	11	0	1	10	0

- **Step 13:** Check the booking status. If the booking has been confirmed, follow the next steps to generate token.

Token Report / Solar Pump Wise Token Report / District wise token report

Financial Year

2023-24

Name of the scheme

प्रधानमंत्री किसान ऊर्जा सुरक्ष

View Details

List of online booking for subsidy on solar pump including date and time

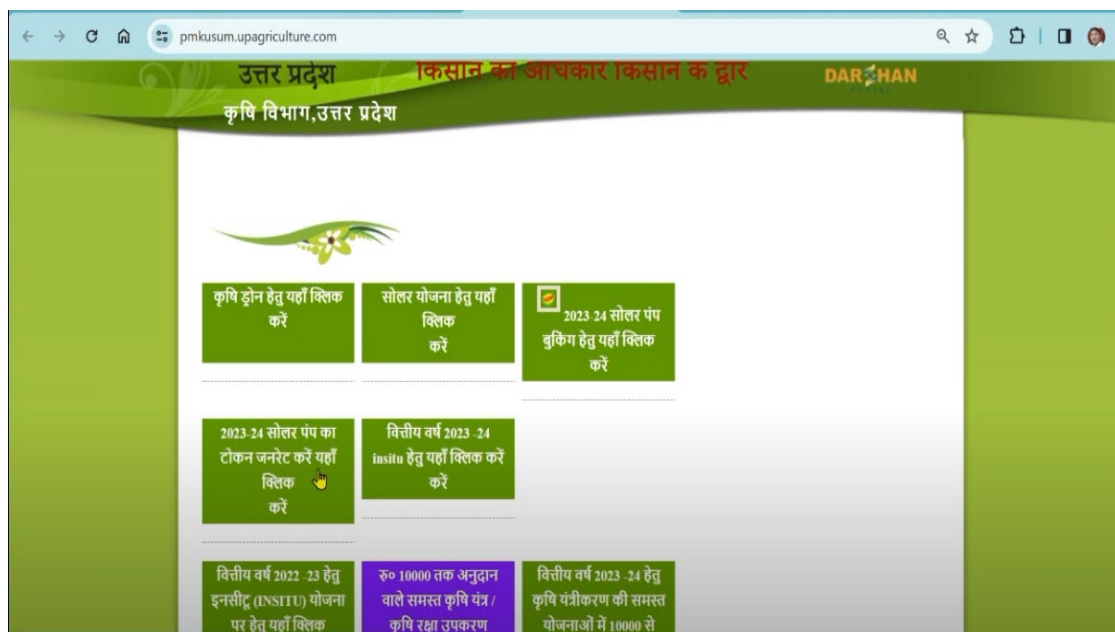
Note

- This booking is not a right to receive grant nor is it a priority list. Grant will be sanctioned in due time under the scheme's guidelines, government orders, availability of funds, eligibility and other relevant rules and restrictions.

Plan	Prime Minister Kisan Energy Security and Upliftment Campaign (PM Kusum) Solar Pump Scheme – 2023-24		
District	Ambedkar Nagar		
Device	Solar Pump - 10 HP AC Submersible		
#	Token number/date and time of online booking	Cultivator Details	
1	Booking Confirmation, Token Submission Last Date : Feb 12, 2024		Registration Number : 8432220651700 Name : akash verma son/daughter/wife : mansaram Block : Baskhari
2	Booking confirmed, last date for token submission : Mar 09, 2024		Registration Number : 8433224435300 Name : JAGRAM VERMA Son/Daughter/Wife : RAMPRATAP Block : Tanda
3	Booking Confirmed, Token Submission Last Date : Feb 21, 2024		Registration No. : 8431973945100 Name : Ram Achhaivar Verma Son/Daughter/Wife : BASDEV Block : Ram Nagar
4	Booking confirmed, last date for token submission : Mar 09, 2024		Registration No. : 8432835407000 Name : Parshuram Verma Son/Daughter/Wife : Ganga Block : Baskhari
5	Booking confirmed, last date for token submission :		Registration No. : 843162683

b. Steps for token generation

- **Step 14:** Click on '**Generate token for solar pump**'



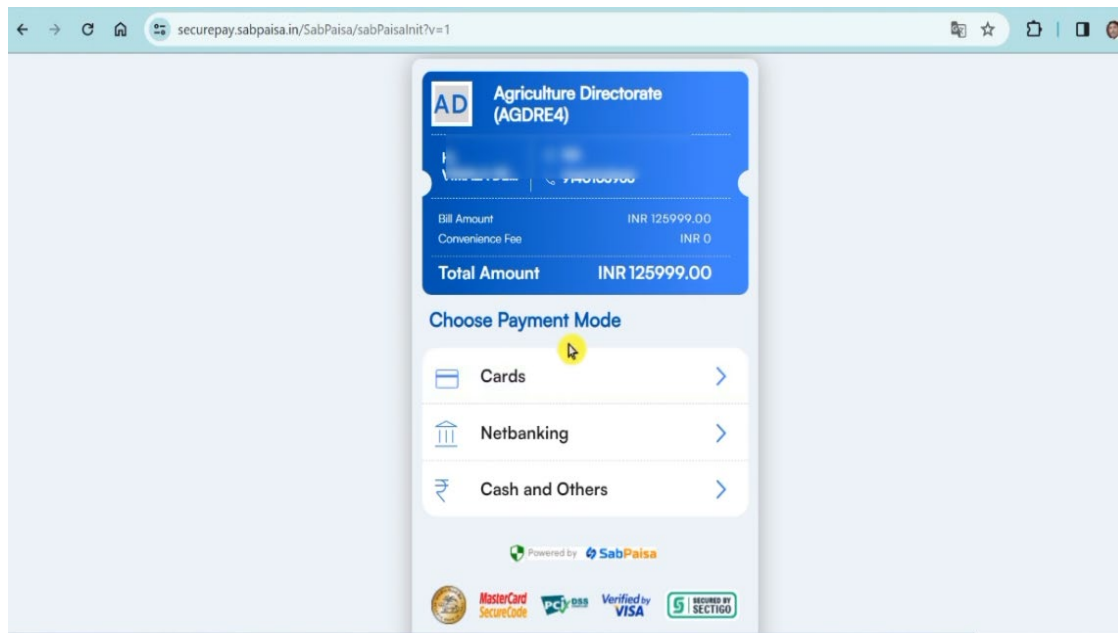
- **Step 15:** Enter the Kisan ID and click on '**Generate token**' at the bottom of the screen.

The screenshot shows the token generation page on the PMKUSUM portal. It includes a form with fields for 'कृषक पंजीकरण संख्या का विकल्प चुने' (a dropdown menu) and 'संख्या भरे' (a text input field). Below this is a table titled 'किसान का विवरण' (Farmer's Details) containing the following information:

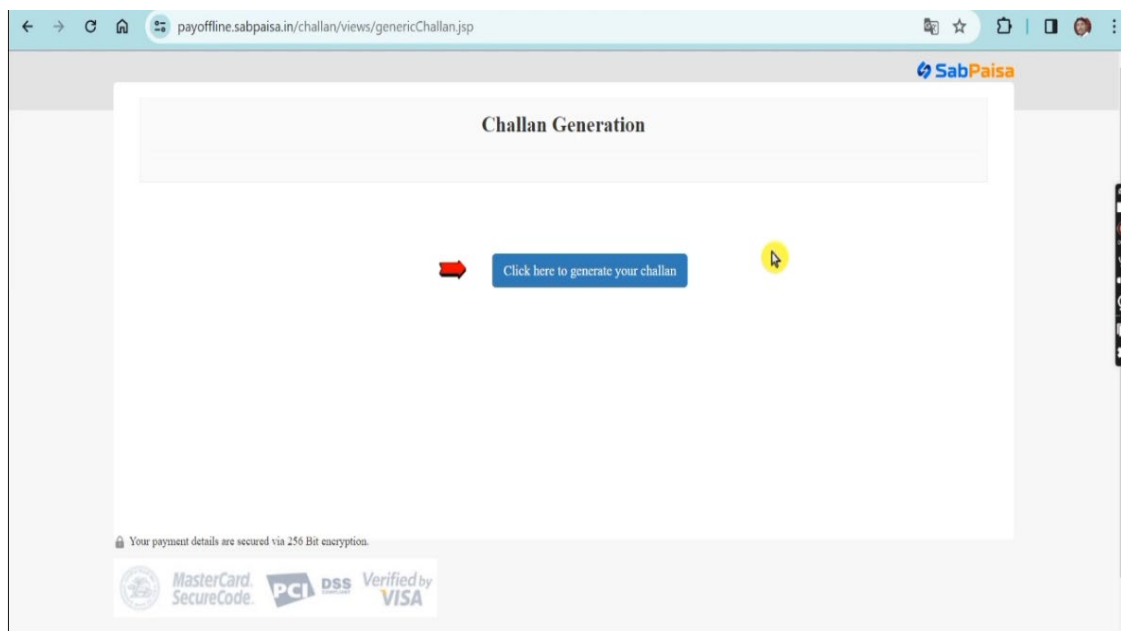
बुकिंग की तिथि	Jan 18 2024 2:28:46:200PM
कृषक अंश की धनराशि	125
पंजीकरण संख्या	8183
किसान का नाम	VIM/
कृषक मोबाइल सं०	9140
सोलर पंप का प्रकार	सोलर पंप - 5 HP AC सबमर्सिबल
जनपद	सीतापुर

At the bottom of the form, there is a green button labeled 'टोकन जनरेट करें'.

- **Step 16:** Choose the payment mode and the bank name.



- **Step 17:** Click on '**Generate Challan**' to generate the token.



- **Step 18:** The generated ticket will show details of the payment to be made and the date of payment.

payoffline.sabpaissa.in/challan/views/genericChallan.jsp

Cash Challan

Deposit		Payee		Bank	
IND-SF SCREE Indian Agriculture		IND-SF SCREE Indian Agriculture		IND-SF SCREE Indian Agriculture	
Challan No	SRSI	244	Challan No	SRSI	244
Transaction Id	5137		Transaction Id	5137	
Payee Name	VIMA		Payee Name	VIMA	
Contact Number	9140		Contact Number	9140	
Challan Generation Date	30/01		Challan Generation Date	30/01	
Challan Validity Date	05/02		Challan Validity Date	05/02	
Email Id	techs		Email Id	techs	

5

- **Required documents**

- KISAN ID for registration

- **Required amount**

USD 55.02 (inclusive of the total payable amount of the SIP by the farmer).

⁵ Source: Images are sourced from publicly shared materials demonstrating the application process on the Uttar Pradesh Department of Agriculture's website and are solely used for educational purposes. Copyright of the website content belongs to the Department of Agriculture, Government of Uttar Pradesh.

Chapter 4: Maintenance of solar panels and grievance redressal

Sustained performance of solar irrigation systems depends not only on installation but also on proper maintenance and timely resolution of operational issues. This chapter outlines essential maintenance practices for solar panels, pumps, and associated components, focusing on routine actions that farmers can undertake to ensure system efficiency and longevity. It also familiarizes CSC operators with common technical issues and grievance redressal mechanisms, enabling them to advise farmers on appropriate responses, warranty provisions, and escalation pathways when problems arise.

Maintenance tips

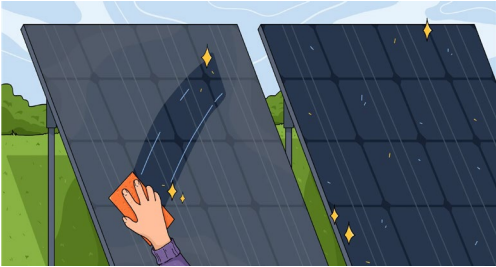
	Frequency	Remark
(a) 		
(b) 		Regular cleaning of panels: Dust and bird droppings can lower the efficiency of the panels. Bird droppings can be acidic and, over time, may corrode the surface of the panels.
(c) 	Weekly	Clean solar panel, inverter, DC and AC (Energy) box, with soft cloth or soft mop and water anytime it is dirty. Do this when panels are cool and do not use soap/detergent for cleaning. Also do not step on the solar panel nor use pressure washers for cleaning.
(d) 		

Figure 5: (a,b,c,d): Demonstrating Cleaning Activity, the common cleanliness-related issues.

Source: Generated with AI and reviewed by the authors



Figure 6: Demonstrating the shading effect.

Source: Generated with AI and reviewed by the authors

Monthly/
Quarterly

Avoid shade: Trim trees that may create shade over the panels. Keep solar panels out of shade to allow maximum energy production.

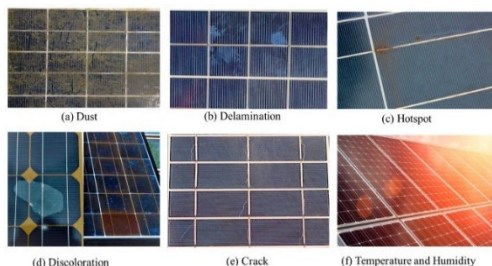


Figure 7: Demonstrating Common forms of Module damage.

Source: Rahman et al. (2023)

Biannually

Inspect for damage: Modules with visual defects should be further inspected for performance and safety to determine the need for replacement.



Figure 8: Demonstrating covered battery connections

Source: Joule X

Regularly

Be mindful of the batteries and connections: Battery terminals should be covered.



Figure 9: Demonstrating external use case of batteries

Source: Generated with AI and reviewed by the authors

Regularly

Do not put anything on top of the batteries, keep the battery surface dry

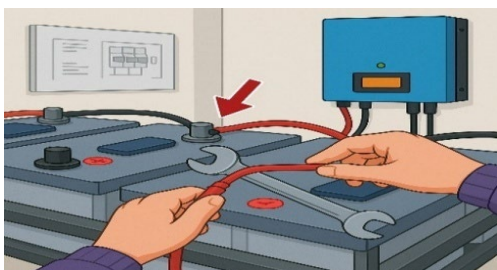


Figure 10: Demonstrating overall connection related issues.

Source: Generated with AI and reviewed by the authors

Regularly

Check for loose connections and tighten them.

Chapter 5: Implementation plan

This chapter presents a structured implementation plan for CSC operators to conduct village-level outreach and application support camps for PM KUSUM. It outlines each stage of the process—from village selection and community engagement to camp organization, documentation, and follow-up—while emphasizing inclusivity, particularly the participation of women farmers. By clarifying roles, responsibilities, and do's and don'ts, the chapter serves as a practical guide to ensure consistent, transparent, and effective delivery of application support at the local level.

Step-by-Step camp implementation



Figure 11: The implementation plan for CSC operators to organize camps across the selected villages in UP.

CSC operator's role: Do's & Don'ts

- ✓ Assist farmers with online registration and form filling
- ✓ Help farmers understand documentation and payment steps
- ✓ Guide farmers on where to go for offline verification
- ✓ Do not promise approval or installation timelines
- ✓ Do not advise on pump sizing beyond scheme limits
- ✓ Do not collect payments on behalf of any agency

FAQ check list for the CSC operators

- ✓ How much does the farmer pay upfront?
 - Mention that the farmer must pay their subsidized share of the total system cost at the time of the application in case of component C1. While in case of component B-an upfront cost of USD 55.02 is to be paid at the time of booking, and the remaining subsidized amount is to be paid at the time of token generation i.e. after the confirmation of the booking status. Note that the upfront amount of USD 55.02 is from the total subsidized amount.
- ✓ When is subsidy given?
 - Mention that subsidy is not given in cash; it is adjusted in the total cost of the system
- ✓ What is the maximum pump HP allowed?
 - Mention that pumps up to 10 hp are allowed
- ✓ Will a new borewell be provided?
 - Explicitly state that the scheme does not provide a new borewell; the farmer must have a borewell.
- ✓ Who maintains the system?
 - Mention that the farmer should handle routine maintenance, while the company is responsible for operational issues or damage/repairs covered under warranty.
- ✓ How long after applying will installation happen?
 - Mention that the installation usually begins after 15-30 days of the payment.
- ✓ Do solar pumps give unlimited free water?
 - Explicitly state that water use must be controlled to avoid groundwater depletion, even if running costs are low.
- ✓ How are women farmers included?
 - Explicitly state that women farmers are equally eligible to apply provided they meet the eligibility criteria and should be actively invited and supported during camps.

Chapter 6: Way forward and its applicability beyond the study region

This training manual has been developed as part of a pilot effort to strengthen last-mile application support for solar irrigation under PM KUSUM by leveraging existing grassroot institutions. The experience from this initiative highlights the potential of embedding application facilitation within familiar, trusted service delivery systems rather than creating parallel structures. Going forward, this approach offers several pathways for institutionalization, adaptation, and scale.

While this manual has been developed in the context of Uttar Pradesh, the underlying challenges it addresses—digital complexity, fragmented verification processes, and limited farmer awareness—are common across many Indian states. The CSC-based support model is adaptable to different state contexts, provided it is aligned with local implementing agencies, state-specific portals, and subsidy structures. States with extensive CSC networks and digitally enabled subsidy delivery systems are particularly well positioned to adopt and customize this approach.

Beyond India, the lessons from this module are relevant for countries pursuing clean energy or irrigation subsidies through digital platforms. The core principle—embedding application support within existing local institutions—can be applied wherever farmers face barriers in accessing digitally delivered public programs. In other contexts, it can adapt key elements such as capacity-building of frontline intermediaries, standardized guidance materials, and inclusion-focused outreach strategies.

Further research is needed to assess the long-term impacts of embedded application support on adoption rates, completion of installations, and farmer satisfaction. Additional learning could also explore the cost-effectiveness of CSC-based facilitation, its role in post-installation support, and its potential contribution to grievance redressal. Evidence from such assessments can inform program refinement and support decisions on scaling this approach within and beyond PM KUSUM.

This manual represents a step towards rethinking how public programs can be delivered more inclusively by leveraging existing service delivery institutions. Embedding solar irrigation adoption within these systems offers a scalable, context-sensitive pathway for expanding access while strengthening the effectiveness of public investments.

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