

5. Component B

5.1. Salient Features

- i. This Component is for installation of standalone Solar Pumps/replacement of diesel pumps by solar pumps.
- ii. Under this Component, individual farmers will be supported to install standalone Solar Agriculture pumps or replacement of existing diesel Agriculture pumps / irrigation systems in off-grid areas, where grid supply is not available.
- iii. Priority would be given to small and marginal farmers and farmers using micro irrigation.
- iv. Pumps of capacity higher than 7.5 HP may be allowed, but the CFA will be limited to the CFA applicable for pump of 7.5 HP.
- v. For the individual farmers in the North-Eastern region (NER); Hilly region (Jammu & Kashmir, Ladakh, Uttarakhand and Himachal Pradesh) and Islands (Andaman & Nicobar, Lakshadweep), the CFA will be available for pump capacity up to 15 HP, however the CFA for pumps up to 15 HP will be restricted to 10% of total installations
- vi. Maximum Solar PV capacity in kW is allowed as per the pump capacity in HP, in accordance with the MNRE specifications. For example, 3 HP pump capacity cannot have solar capacity of more than 3 kW.
- vii. DISCOMs/ Agricultural Department/ Minor Irrigation Department/ any other Department designated by State Government will be the implementing agencies for this component.
- viii. Agricultural Department may be prioritized as State Implementing Agency (SIA) by the State Governments given their extensive network of Agri and allied services along with embedded human resource availability.
- ix. Implementing agency will get service charges as applicable under Scheme Guidelines

5.2. Pre-Commissioning Activities

5.2.1. Demand Aggregation and Allocation of Solar Pumps

- i. The SIA will submit proposals to MNRE for approval.
- ii. The SIA after submitting proposal to MNRE may choose to start the preparatory activities including tendering process. However, the Letter of Award/Purchase Order shall be issued after the issuance of sanction letter by MNRE.
- iii. Based on the demand received from SIAs, MNRE will allocate quantity of pumps to the implementation agencies in the States after approval by a Screening Committee under the chairmanship of Secretary, MNRE.
- iv. MNRE will have the discretion to modify/cancel the allocated capacity based on the pace of progress in any particular state, or as per requirements of the scheme

5.2.2. Implementation

Component B can be implemented in two modes – with State share and without State share. The Central Government will provide financial assistance of 30% (or 50% for North Eastern Region/Hilly region/Islands) of the Benchmark Cost or the Tender Cost, whichever is lower, of the stand-alone solar Agriculture pump. The State Government will provide a subsidy of atleast 30%; and the remaining up to 40% is to be provided by bank loan/farmer.

In case the State Government is not in a position to give its share of subsidy of 30% but farmers are willing to set up solar water pumping system with the Central Financial Assistance only, the farmers are permitted to do so. Central share will continue to remain 30% (or 50% for NER/Hilly region/Islands), with the remaining 70% in General category states and 50% in Hilly region/NER/Islands being borne by the farmer. The Ministry will develop a National Portal to enable beneficiaries to apply for solar pump with central subsidy only.

5.2.3. Bidding Procedure

The States will call for tender for installation of solar water pumping system through the SIAs or any other agency nominated by the State Government. These agencies will carry out tendering process as per the guidelines, standards, & specifications laid down by MNRE. Any deviation shall normally be not permissible except in specific cases with the approval of Screening Committee in MNRE. The MNRE will list out the pumps/motors/panels and other equipments of high quality and specify that only those pumps/motor/panels which are in the approved list, can be used. The following categories, subject to meeting the technical and financial requirement of the tender, are allowed to participate in the tendering:

- (a) System Integrators/ Aggregators/ Any other entities fulfilling technical and financial criteria.
- (b) Any manufacturer of solar PV modules or manufacturer of solar pumps or manufacturer of solar pump controllers.
- (c) Joint venture of any of manufacturers mentioned at (b) above with system integrators/aggregators.

If the vendor fails to install the allocated pumps within the stipulated period, the said vendor shall be debarred for five years' period from the date of such decision of debarment. Extension may be granted for valid reasons. In all cases, the successful bidder shall provide AMC for five years from the date of installation, real time monitoring, helpline, district level service centers and comply with standards of performance in dealing with complaints/redressal mechanism. It will be mandatory to use indigenously manufactured solar modules with indigenous solar cells. Further, the motor-pump-set, controller and balance of system should also be manufactured indigenously. The vendor has to declare the list of imported components used in the manufacturing of solar water pumping system.

5.2.4. Provision of USPC

Since pumps are generally used for 150 days in a year, the installed solar capacity can be optimally utilized by using Universal Solar Pump Controller (USPC), through which farmers can use solar power for other activities like operating chaff cutter, floor mill, cold storage, drier, etc., and increase his income. Option would be given to the farmer to opt for USPC and separate bid price for solar water pumping system with USPC will be invited and subsidy will be made available for these pumps according to benchmark price of solar pumps without USPC, even if the price discovered for solar pumps without USPC are less

than benchmark price. States/UTs may bear this additional cost to facilitate use of solar energy for other activities and increasing the income of farmers.

5.2.5. Water Saving Techniques

New Solar Agriculture pumps would not be covered under this component in Dark zones/black zones. However, existing standalone diesel pumps, can be converted into standalone solar pumps in these areas provided they use micro irrigation techniques to save water. In order to minimize the water usage for irrigation purpose, preference will be given to the farmers using Micro irrigation systems or covered under Micro irrigation schemes or who opt for micro irrigation system. The size of pump would be selected on the basis of water table in the area, land covered and quantity of water required for irrigation.

For solar pumps to be set up and used by Water User Associations (WUA)/Farmer Producer Organizations (FPO)/Primary Agriculture Credit Societies (PACS) or for cluster-based irrigation system, the CFA will be allowed for solar pump capacity of higher than 7.5 HP considering up to 7.5 HP capacity for each individual in the group (for example when a group of 5 farmers in above mentioned category installs a pump of 40 HP capacity than the CFA up to 37.5 HP will be given to the group).

5.3. Post Commissioning Activities

5.3.1. Central Financial Assistance

MNRE will release the CFA towards the installation of solar pumps under the scheme as per the Benchmark cost or tender cost, whichever is lower. MNRE will be issuing the benchmark cost for various capacities and models being implemented under the scheme, from time to time.

5.3.1.1. Eligible CFA with State share

- i. CFA of 30% of the benchmark cost or tender cost, whichever is lower, of a particular category/type of the stand-alone solar Agriculture pump will be provided. The State Government will give a subsidy of at-least 30%; and the remaining 40% will be provided by the farmer.
- ii. However, in North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark or tender cost whichever is lower, of a particular category/type of the stand-alone solar Agriculture pump will be provided. The State Government will give a subsidy of at-least 30%; and the remaining at most 20% will be provided by the farmer.

5.3.1.2. Eligible CFA without State share

- i. CFA of 30% of the benchmark cost or tender cost whichever is lower, of a particular category/type of the stand-alone solar Agriculture pump will be provided. The remaining 70% will be provided by the farmer either directly or through loan.
- ii. In North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark cost or tender cost

whichever is lower, of a particular category/type of the stand-alone solar Agriculture pump will be provided. The remaining 50% will be provided by the farmer.

- iii. MNRE will also develop an online portal where farmer can directly register themselves and avail transfer of subsidy in their account after successful completion of installation. Subsidy in this case will be restricted to 30% of Benchmark Cost or Tender Cost, relevant to the State, whichever is lower.

5.3.2. Access to Financing

- i. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and the remaining amount (other than subsidy) can come from loan.
- ii. SIAs will make special efforts to organize events like *Bank Mela* at block and district levels and sensitize the banks to the need of farmers for accessibility of finance under the scheme.

5.3.3. Installation timeline and Penalties

Projects for installation of Solar Agriculture pumps systems shall be completed within 24 months from the date of sanction by MNRE. Extension in project completion timelines, up to a maximum period of three months, will be considered at the level of Group Head in MNRE and up to 6 months or beyond at the level of Screening Committee in MNRE on submission of valid reasons by the implementing agency.

5.3.4. Release of funds by MNRE

- i. Funds up to **30%** of the applicable CFA for the sanctioned quantity would be released **as advance** to the implementing agency after placement of letter of award(s) to the selected vendors.
- ii. **Second instalment up to 60%** of the applicable CFA would be released on submission of the provisional UCs of the first release and the details of partial installation of pumps.
- iii. The **last instalment** of balance eligible CFA **up to 10%** along with applicable service charges would be released on acceptance of the Project Completion Report in the prescribed format, Utilization Certificates as per GFR and other related documents by the Ministry.
- iv. The implementing agencies may pass on these funds to the selected vendors in different stages on achievement of various milestones as per terms and conditions of letter of award(s).
- v. 2% of the eligible CFA will be provided as service charges in totality to all the agencies involved in implementation including the designated SIA. Part of service charges (to be decided by MNRE) shall be given to the central agency for centralised tendering.
- vi. MNRE may release 50% of eligible service charges for the sanctioned quantity to State Implementation Agencies after placement of LoA for preparatory activities. Additionally, MNRE will retain 33% of eligible service charges for nation-wide Information, Education and Communication (IEC) activities.
- vii. The CFA in case of online portal, as per Para 5.2.2 (iv), will be released after installation of pump.

5.4. Monitoring and maintenance

- i. Selected vendors shall be responsible for design, supply, installation and commissioning of solar agriculture pumps. Vendors will mandatorily provide AMC for a period of 5 years from the date of commissioning of the systems including insurance coverage for the installed systems against natural calamities and theft.
- ii. AMC will include inspection by Vendor at least once in a quarter and submission of quarterly inspection report of the installed pumps as per prescribed format. To ensure timely maintenance of the systems the vendor shall have one authorized service centre in each operational district or cluster of districts as decided by the SNA depending upon number of installed pumps and a helpline in local language should be made available. The helpline number shall be indicated on the pump/ controller at suitable location easily visible to the user.
- iii. All solar agriculture pumps sanctioned under the Programme shall be provided with remote monitoring system by the vendor. It will be mandatory to submit performance data of solar power plant online to MNRE in the manner and format prescribed by MNRE.
- iv. Monitoring of the Scheme and its implementation will be carried out during the period of implementation of the Scheme as given below:
 - a) The implementing agency would be responsible for monitoring include timely installation and functioning of the pumps. The progress report of its installation will be submitted to the MNRE by the SIAs every month.
 - b) Funds may be released by implementing agency to the vendor on submission of bank guarantee as specified in the tender by that vendor for a period of five years. Alternatively, BG may be provided initially for a period of one year which may be extended on year to year basis thereafter.
 - c) The Ministry officials/ designated agency may inspect the ongoing installation or installed plants.
- v. In case the installed systems are not as per standard, non-functional on account of poor quality of installation, or non-compliance of AMC, the Ministry/State Government reserves the right to debar the bidder/vendor and any of its successors up to a period of five years from the date of such decision of debarment.

5.5. Responsibilities of Implementation Agency

The Implementing Agencies will be responsible for the following activities:

- (i) Carry out wide publicity of the scheme to increase awareness, identify potential beneficiaries, and coordinate with banks for easy access of finances.
- (ii) Ascertain the demand for solar pumps in the state, prepare beneficiary list and submit to MNRE for allocation of demand.
- (iii) Carry-out the state bids/tenders for installation and maintenance of solar pumps sanctioned by MNRE under Component-‘B’.
- (iv) Ensure project completion within the given timelines and compliance of MNRE guidelines, and standards.

- (v) Oversee installation of solar pumps, ensure timely O&M, and report periodical progress to MNRE (this will include but is not limited to online submission of monthly and quarterly progress reports).
- (vi) Inspection of installed systems and online submission of completion reports to MNRE.
- (vii) Submission of utilization certifications and audited statement of expenditure through EAT/PFMS module and disbursement of MNRE CFA.
- (viii) Maintenance of updated records and make them available for inspection at the call of MNRE.
- (ix) Maintain real time monitoring data of the installed systems through dedicated web-portal.
- (x) Ensure the effective working of the Remote Monitoring System of the installed pumps, and conduct periodical inspection of the same.
- (xi) Submission of accurate, verified, and complete records in all aspects to MNRE for ensuring the timely payment of CFA.
- (xii) Performance monitoring of installed system through third party.
- (xiii) Ensure compliance of AMC by the vendors.

6. Component C

6.1. Salient Features

- i. This Component aims at solarization of grid connected agriculture pumps including Feeder Level Solarization
- ii. The objective of this component is to provide reliable day-time solar power to farmers, enhancing their income by purchasing surplus solar power and thus incentivizing them for saving water
- iii. Under Individual Pump Solarization (IPS), solar PV capacity up to two times of pump capacity in kW is allowed, so that the farmer will be able to use the generated solar power to meet the irrigation needs and get additional income by selling surplus solar power to DISCOMs.
- iv. Under Feeder Level Solarization (FLS), States are supported for solarization of agricultural feeder or mixed feeders.
- v. DISCOMs /GENCO/ any other Department designated by State Government will be the implementing agencies
- vi. State Implementing agencies will submit proposals to MNRE for approval.
- vii. In case of dark zones/black zones only existing grid connected pumps will be solarized.
- viii. Implementing agency will get service charges as applicable under Scheme Guidelines.

6.2. Demand Aggregation and allocation of quantities

- i. State Implementing agencies will submit proposals to MNRE for approval.
- ii. Based on demand received from SIAs, MNRE will allocate quantity of pumps to the implementation agencies in the States after approval by a Screening Committee under the chairmanship of Secretary, MNRE.
- iii. The SIA after submitting proposal to MNRE may choose to start the preparatory activities including tendering process. However, the Letter of Award/Purchase Order shall be issue after the issuance of sanction letter by MNRE.
- iv. MNRE will have the discretion to modify/cancel the allocated capacity based on the pace of progress in any particular state, or as per requirements of the scheme

6.3. Individual Pump Solarization (IPS)

6.3.1. Options for solarisation under Component C (IPS)

Followings are the two options through which grid connected pumps can be solarized; State may choose any other option, as well.

- i. **Pump to run on both Solar and Grid:** In this case the agriculture pump will continue to run at rated capacity taking power from solar panels and balance power from grid, if required, and in case solar power generation is higher than required by pump, the additional solar power would be fed to the grid. Net metering may be provided in this case.
 - a) Farmer would be able to import and export power to the grid at the rate specified by the SERC.