

OPERATIONAL GUIDELINES- PM KUSUM (COMPONENT-B & COMPONENT-C) UNDER AEDA

A. Abbreviation:

| | |
|-----------------|---|
| PM KUSUM | : Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan |
| AEDA | : Assam Energy Development Agency |
| MNRE | : Ministry of New and Renewable Energy |
| LOE | : Letter of Empanelment |
| NTP | : Notice to Proceed |
| SPWPS | : Solar Photovoltaic Water Pumping System |
| GoI | : Government of India |
| HP | : Horse Power |
| EESL | : Energy Efficiency Services Limited |
| DC | : Direct Current |
| USPC | : Universal Solar Power Controller |
| OTP | : One Time Password |
| BIS | : Bureau of Indian Standard |
| PDI | : Pre Dispatch Inspection |
| SLD | : Single Line Diagram |
| CPG | : Contract Performance Guarantee |

B. Sanction, Vendor Empanelment and Discovered Rate

1. Ministry of New and Renewable Energy (MNRE) Government of India has launched the Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyan (PM KUSUM) Scheme for farmers for solar pump from 1 HP to 7.5 HP. Any capacity beyond that may be installed but subsidy will be restricted to only 7.5 HP.
2. Ministry of New and Renewable Energy (MNRE), GoI sanctioned 1000 numbers of Solar Pumps under Component B (Standalone Solar Pumps) and 500 Grid Connected Solar pumps under Component-C to Assam Energy Development Agency (AEDA) vide sanction no. F.No.32/54/2018-SPV Division dated 21st June 2021 for a period of 24 months from the date of sanction.
3. MNRE through national bidding process engaged Energy Efficiency Services Ltd. (EESL) for discovery of rates for the entire range of solar pump along with state wise identification of vendors.
4. Focusing on the marginal farmers, AEDA would initially go ahead with 1 HP, 2 HP and 3 HP DC pumps under Component B of PM KUSUM Scheme.
5. The list of empanelled vendors as well as latest discovered rates under Component B received from MNRE GoI is detailed in Table (a) and Table (b).

| Table(a) Prices discovered and vendors selected (Submersible DC Pump) through EESL tender under Component B of PM-KUSUM Scheme | | | |
|---|----------------------|---------------------------------------|---------------------------------------|
| Pump Type | Pump Capacity | Vendor Name | Total Price including Tax(Rs.) |
| Submersible Pump (Normal controller) | 1HP DC | Surya International | 1,10,373.48 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | 2HP DC | Vrg Energy India Pvt Ltd | 1,45,664.00 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | | Rotomag Motors & Controls Pvt. Ltd. | |
| | 3HP DC | VRG Energy India Pvt Ltd | 1,86,632.00 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | | Rotomag Motors & Controls Pvt. Ltd. | |
| | | Abhishek Solar Industries Private Ltd | |
| Submersible Pump (USPC) | 3 HP DC | VRG Energy India Pvt Ltd | 2,09,392.00 |
| | | Tata Power Solar Systems Limited | |
| | | Rotomag Motors & Controls Pvt. Ltd. | |

| Table(b) Prices discovered and vendors selected (Surface DC Pump) through EESL tender under Component B of PM-KUSUM Scheme | | | |
|--|---------------------|-------------------------------------|---------------------------------|
| Pump Type | Pump Capacity | Vendor Name | Total Price including Tax (Rs.) |
| Surface Pump (Normal Controller) | 1HP DC | Ishaan Solar Power Private Limited | 1,06,284.65 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | 2HP DC | Ishaan Solar Power Private Limited | 1,33,662.65 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | | Rotomag Motors & Controls Pvt. Ltd. | |
| | 3HP DC | VRG Energy India Pvt Ltd | 1,81,624.80 |
| | | Vtech Sunsystems Pvt. Ltd. | |
| | | Tata Power Solar Systems Limited | |
| | | Rotomag Motors & Controls Pvt. Ltd. | |
| | Surface Pump (USPC) | 3HP DC | VRG Energy India Pvt Ltd |
| Rotomag Motors & Controls Pvt. Ltd. | | | |
| Tata Power Solar Systems Limited | | | |

C. Who To Get the Benefits?/ Eligibility Criteria

1. Small and marginal farmers
2. Individual farmers will be supported to install standalone solar agriculture pumps of capacity up to 7.5 HP for replacement of existing diesel agriculture pumps / irrigation systems in off-grid areas. Installation of new pumps shall also be permitted under this scheme except in dark zone areas.
3. Farmers using Micro irrigation systems or covered under Micro irrigation schemes or who opt for micro irrigation system.
4. Farmers having minimum 2-3 bighas, 6 bighas and 10 bighas of agricultural land preferably *myaadi* land or otherwise supported by an affidavit certified by the Sarkari Gaon Burah of that village respectively in the name of applicant farmer for 1, 2 and 3 HP Solar Pumps respectively.
5. Solar Pumps shall be allocated to the eligible farmers on first come first serve basis.

D. Admissible Subsidy

| SI No. | Type of Pump | Particulars of Item | Admissible Subsidy | Farmer's Share |
|--------|---|---|--------------------|----------------|
| 1 | Surface Pump (Normal Controller & USP Controller) | Design, Supply, Installation and Commissioning along with 5 Years of Repair and Maintenance of 1 HP, 2 HP & 3 HP DC Pumps | 85% | 15% |
| 2 | Submersible Pump (Normal Controller & USP Controller) | | | |

E. How to Apply?

1. AEDA to select eligible beneficiaries for the scheme from applicants applying online through AEDA's official website.
2. Interested beneficiaries may please look in the **official website** of Assam Energy Development Agency (AEDA) i.e. <https://aeda.assam.gov.in/>. This is the only official website for registration/application/guidelines of PM KUSUM (Component B) in Assam
3. The interested beneficiary may **click on PM-KUSUM Yojana** in AEDA's official website and click on **"Apply for PM KUSUM Yojana"** or directly go to <https://aeda.assam.gov.in/portlets/pm-kusum-yojana>
4. Once the "Application Registration" is clicked. The beneficiary has to enter his/her name and mobile number and click on "SEND OTP". A 4-digit OTP text message will be received in the registered mobile number of the beneficiary. When the OTP is verified, the beneficiary will set a password. This step only confirms the name and mobile number of the beneficiary for record.

5. The beneficiary has to now click on "Login". The username/mobile number is the Registered Mobile Number. One can login either by using Password as set in Step 4 or can request OTP into the registered mobile number.
6. Documents required for registration Passport photo, ID proof (voter id/adhaar/ driving license) and myaadi patta of agricultural land of applicant. All three documents in .jpg or .png or pdf and size less than 10 MB
7. There is **NO** registration fees for online application

F. Selection of Beneficiary by AEDA

1. Aggregation of beneficiary through online portal
2. Provide list of probable beneficiaries to vendor
3. Site survey/feasibility study of the location of solar pump by vendor
4. DLSC to approve the final selected list of beneficiaries for execution
5. Prepare proposal and submit to MNRE, GoI for sanction.

G. Role of AEDA

1. Aggregation of probable beneficiary list from portal.
2. Issue of LOE to the vendors for implementation.
3. Collect security deposits/ bank guarantee from empaneled vendors as per tender norms.
4. Provide the list of probable beneficiary to vendor for site survey/feasibility survey and obtain approval/No Objection Certificate (where ever required) from appropriate Govt. authority and District Level Selection Committee (DSLSC).
1. After receipt of approval of beneficiary list from DSLC, AEDA will inform the selected beneficiaries for deposition of beneficiary share in favor of The Director, Assam Energy Development Agency.
2. Once beneficiary share is deposited, AEDA will issue NTP (notice to proceed) to the empaneled vendor for installation of solar pumps.
3. After issuance of NTP to the vendor, the vendor shall have to complete the installation and commissioning of the solar pump within 120 days of issuance of NTP.
4. AEDA to inspect the installed systems and submit online completion reports to MNRE
5. AEDA to ensure project completion within the given timelines and compliance of MNRE Guidelines and Standards.
6. AEDA to monitor real time data of solar pumps through dedicated web-portal, performance monitoring of installed system through third party and ensure compliance of AMC and training of locals by the vendors
7. AEDA would be responsible for monitoring parameters such as end-use verification and compilation of statistical information.
8. AEDA to abide by all the terms and conditions and also disbursement of payments to vendor as per EESL NIT/Bid Document No:-EESL/06/2020-21/KUSUM/SWPS/1-10HP/Off-Grid/202101032,dated:14.01.2021

Role of Vendor

1. Once vendor is empaneled by AEDA, the vendor has to submit Bank guarantee/security deposit to AEDA as per tender terms and collect the list of beneficiaries for sites survey.
2. Vendor to obtain approval/NOC from any government authority whenever required
3. Once site survey is done, the list of beneficiaries to be authenticated through respective District Level Committees in order to ensure authenticity and avoid duplicity

Scope of work of Vendor

The Scope of Work of a vendor shall include to Design, Manufacture, Supply, Erection, Testing and Commissioning of **Stand-alone Off Grid Solar Photovoltaic Water Pumping Systems of 1-3 HP** capacities including complete system warranty and its repair and maintenance for 5 Years under MNRE KUSUM scheme Component 'B': as per MNRE specifications and applicable BIS standards mentioned in tender document no:- EESL/06/2020-21/KUSUM/SWPS/1-10HP/Off-Grid/202101032,dated:14.01.2021

The scope of work covers:

1. Supply and Manufacture

- a. The selected vendor shall be responsible for design, supply, installation and commissioning of SPWPS alongwith 5 years of repair and maintenance. To ensure timely maintenance of SPWPS, apart from training a local person and making available necessary spare parts & tools in each district, the vendor shall have one authorized service center in each operational district and a help line(s) in English or Regional language of Assam where such SPWPS are installed.
- b. Each pump should be marked with **Toll Free No. of successful vendor** (Toll free no. shall be affix on controllers and shall be readable for 5 years.) operating in English/ Regional language of respective state and specific pump numbers and the Pump No. must have been captured by AEDA's Web based Application (as per instruction of AEDA) at the time of installation at site.
- c. During the time of PDI of each component, test report of equipment's, warranty certificates and calibration certificates should be provided by the vendor. Also, vendor should submit module structure wind withstand capacity certificate from certified Architecture Engineer for wind speed of 150 Km/hour. Successful vendor has to submit the PDI request within one week from the date of clearance (site allocation) given by AEDA's

2. Installation & Commissioning

- a. Installation and commissioning solar photovoltaic water pumping systems of 1-10 HP shall be done by the successful vendor (s) as per the details provided by AEDA. The vendors shall co-ordinate with respective AEDAs for repair and maintenance of SPWPS for 5 yrs.
- b. Empaneled firm have to submit monthly consent of beneficiaries in their favors to AEDA for which AEDA will give **NTP** and for this, empaneled firm shall complete the installation and Commissioning of SPWPS within 120 days of issuance of NTP
- c. Vendor should conduct site survey and provide Progress Report as per the requirement of AEDA.
- d. Action plan to be submitted to AEDA including complete details of team, resources, and service centers in each district within 30 days of acceptance of demand from AEDA.
- e. Intimation to be given to AEDA before one week of PDI call and should submit complete warranty certificates of each lot at the time of inspection.
- f. Submission of installation reports as per the format given by AEDA on weekly basis.
- g. Submission of completion reports of each district to AEDA within one week of 100 % completion of work as per allocation in each district.
- h. Successful vendor should upload/submit monthly and quarterly progress reports online to state/national portal as per direction/requirement of MNRE/AEDA.
- i. Vendor shall comply with all applicable regulatory and statutory norms. Vendor has to obtain approval/NOC (where ever required) from appropriate Govt. authority for implementing the project in each selected village.
- j. Vendor has to obtain handing over certificates/ installation completion letters/certificates from respective village panchayats/ Local Govt. Bodies in parallel with installation (as per prescribed format and requirement of respective district administration else prescribed format of AEDA's may be adopted).
- k. Each SPWPS is to be provided with a colored metallic sticker duly riveted displaying required details as provided by AEDA.

- i. Successful vendor should submit the Certificate (as per prescribed format-to be provided by AEDA) and photographs of each SPWPS installed which must show complete installation setup with beneficiary, Pump number etc.
- m. Successful vendor has to ensure working of minimum 95% of total installed SPWPS at any point of time

3. Technical Requirements and Testing

- i. Systems installed under this Programme should meet technical specification and construction standards as specified by BIS and MNRE from time to time as given in Annexure-I. Non-compliance will be taken seriously to the extent of blacklisting of the vendor.
- ii. Only indigenously manufactured PV modules and Pumps should be used in the Programme. **'Made in India'** to be mentioned on solar panels and pumps.
- iii. Interpretation of the Guidelines: In case of any ambiguity in interpretation of any of the provisions of these guidelines, the decision of the Ministry shall be final.
- iv. Systems installed under this Programme should also follow Office Memorandum - F. No. 283/22/2019-GRID SOLAR of Ministry of New & Renewable Energy, Government of India dated: 23-09-2020

4. Operation & Maintenance (O&M), Training, Awareness and Sensitization

- i. Successful vendor should keep necessary spare parts (min 2% of allotted quantity of each component of the complete system at the service center at each district and should ensure proper maintenance of SPWPS to 5 years from the date of installation of each SPWPS. Vendor should also ensure to provide local training to local persons regarding proper maintenance of the SPWPS. Vendor should submit bi-weekly installation progress report to AEDA's as per prescribed format provided during the installation phase.
- ii. Any complaint registered/ service calls received should be attended at the earliest and the system should be repaired/ restored/ replaced within 3 days from the date of complaint received/informed to the vendor.
- iii. The installation data should be punched in the Web Application Platform to be developed by AEDA's as per the terms and conditions provided by MNRE.
- iv. The Ministry officials or designated agency may inspect the ongoing installation or installed plants. In case the installed systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of maintenance, the Ministry reserves the right to blacklist the vendor.
- v. Vendor has to submit an Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with each solar photovoltaic water pumping system to the beneficiary.

The following minimum details must be provided in the Manual:

- Basic principles of Photovoltaic.
- A small write-up (with a block diagram) on solar photovoltaic water pumping system - its components, PV module, electronics and expected performance.
- A simple single line diagram (SLD) depicting the electrical circuits and control mechanism.
- Type, Model number, Voltage & capacity of the motor, used in the system.
- The make, model number, country of origin.
- Significance of indicators.
- Clear instructions on regular maintenance and trouble-shooting of the solar photovoltaic water pumping system
- Preventive maintenance schedule

- Detail information about warranty coverage
 - DO's and DONT's.
 - Name and address of the contact person for repair and maintenance, in case of non- functionality of the solar photovoltaic water pumping system.
 - Description of frequent faults of PV module and pump and its remedy.
 - Minimum 10 hard copies (to be printed in booklet form) kept at each service center. Also, to be provided to AEDA as and when required
- vi. The Operation & Maintenance (O&M) cost of the system is in-built in the system cost. The vendor shall provide repair and maintenance of the system for 5 years.
 - vii. Successful vendor shall do the preventive maintenance in line with PM-KUSUM guidelines and it's amendment (f any) and should submit the report in prescribed format to AEDA's.
 - viii. If complaint is not rectified within stipulated time penalty will be imposed as per tender terms. This amount shall be recovered from running bills or CPG of the vendor.
 - ix. Successful vendor shall submit the detailed report per district including local training, awareness and sensitization campaigns, Methodology for sustainable maintenance for further five years to the beneficiarieswith relevant photographs.

5. TECHNICAL SPECIFICATIONS

Technical Specifications shall be as per tender document no:- EESL/06/2020-21/KUSUM/SWPS/1-10HP/Off-Grid/202101032,dated:14.01.2021

H. SPECIAL CONDITIONS OF CONTRACT (SCC)

1. TERMS OF PAYMENT:

Stage I: - 90% of the value of month-wise nos. of SPWPS installed at site based on:

- Submission of detailed work plan (Project Execution plan) with timeline for the lot supplied duly approved by AEDA'srepresentative;
- Submission of evidence in hard copy regarding completion of installation of SPWPS in good condition at site, dulyverified and acknowledged by EIC, AEDA and Farmer.
- All the relevant Warranty and quality (performance test reports) of the lot to be submitted.
- Signing of contract agreement between AEDA and successful vendor.
- Submission of Contract Performance Guarantee (CPG) as per relevant CPG clause to AEDA
- Submission of original supply Invoices/Bills duly verified/certified by EIC, AEDA.
- Submission of report supported with labeled photograph on completion of village community training, awareness/ sensitization, capacity building measures undertaken and development of entrepreneurship etc. in each village with relevant photographs
- Submission of Software Generated Installation report as per prescribed format by SNA which shall include following but not limited to Consumer Details, Site Survey Details, Asset Inspection and Mapping Details, Site Inspection Report with Photographs, Remote Monitoring System Parameters etc.
- Vendor needs to operate and do required data entries into the State Level SWPS (Solar Water Pumping System) Platform provided by AEDA to generate required Reports
- Operation and Maintenance manual to be provided to each beneficiary
- Submission of handing over certificates of solar photovoltaic water pumping system signed by Farmer and dulycertified by AEDA's representative;
- Performance report for 1 day after commissioning based on data received from remote monitoring system or datalogger in cases, where internet services are not available
- An undertaking shall need to be submitted by the Contractor certifying that the civil work will withstand the windspeed of 150 km/hr in all weather conditions

Stage II: -Balance 10% i.e. on completion of one month from the date of completion certificate Note: -

- AEDA has the right to seek any additional documents / information / certification it deems fit prior to the release of anypayment relevant to the SPWPS.

- Payment will be made to the vendor within 30 Days after submission of Invoice complete in all respect i.e. with all the required documents and compliance of relevant terms & conditions of LOA duly accepted & certified by EIC, AEDA
- If the invoice is incomplete in any respect or if there is any non-compliance with relevant Terms & Conditions of LOA, payment due date shall start from the date of submission of all necessary documents provided relevant terms & conditions of LOA have been fulfilled.\
- The successful Vendor's request(s) for release of payment shall be made to the Engineer-In-Charge in writing, upon fulfillment of required obligations stipulated in the contract.
- The successful Vendor shall submit the invoice in triplicate showing description, quantity, Unit rate and total amount with all supporting documents as per terms of the Contract. After due verification by Engineer-In-Charge, AEDA shall process the verified Bill (s)/Invoice (s) for release of payment. In case successful Vendor fails to submit the Invoice/Bill with all the required documents, AEDA reserves the right to hold the payment against such Bills/Invoices.
- The successful Vendor shall be responsible for submitting all the requisite documents for processing the Bill (s)/Invoice (s). The successful Vendor shall submit the Bills/Invoices for the work executed showing separately, GST and any other statutory levies in the Bill (s)/Invoice (s).
Note: AEDA has the right to seek any additional documents / information / certification it deems fit prior to be release of any installment.

* All payments are subject to receipt of funds from MNRE GOI and Govt. of Assam

2. **CONTRACT PERFORMANCE GUARANTEE (CPG)**

Vendor shall submit a bank guarantee (BG) of 3% of the amount equivalent to the 10% of the value of total state- wise allocation or 100 nos. of SPWPS, whichever is lower, to respective Implementing Agency's with the validity of 1 year to be rolled over every year for the first five years. However, if total number of SPWPS is more than 10% of the value of total state-wise allocation or 100 nos. in the first list of consent of beneficiaries in vendor's favor, vendor shall submit another CPG equivalent to differential value of order as per NTP. In case of non-performance or failure in fulfillment of contractual obligation under the contract, will be liable to submit 10% CPG apart from other penal provision of the tender. CPG shall be submitted within 15 days of issuance of Letter of Empanelment by AEDA.

3. **INSURANCE**

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. For delivery of goods at site, the insurance shall be obtained by the Contractor, for an amount not less than the Contract Price of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War risks and strikes. The Comprehensive insurance of Solar Photo Voltaic Water Pumping System shall be provided for natural calamities, theft & burglary etc. during 5 years warranty period.

4. **REQUIREMENTS OF REMOTE MONITORING SYSTEM**

- I. State Implementing Agency (AEDA) will have a common **SWPS** (Solar Water Pumping System) Management platform for monitoring of operation and performance of SWPS installed under PM KUSUM Scheme.
- II. Remote Monitoring System (RMS) of SWPS should have following minimum features or modules as per terms, conditions and specifications of tender no. in tender document no:- EESL/06/2020-21/KUSUM/SWPS/1-10HP/Off-Grid/202101032, dated: 14.01.2021
- III. RMS provided by all vendors should connect to State Level Solar Energy Data Management platform, which will have interface with National Level Solar Energy Data Management platform.
 - As mentioned in above point, AEDA will facilitate software as well as server infrastructure in consultation with MNRE. Access of the platform will be shared with Vendors as well as other State and National Level Stake holders.
 - Vendor's needs to provide one-time Application processing and Connectivity charges for each system as per tender requirement.
 - **All vendors should provide SIM card of suitable ISP having maximum Signal Strength in the respective location** of SWPS and ensure connectivity as well as pushing of data to centralized platform as mentioned in specifications.

I. "COMPONENT C" OR SOLARISATION OF GRID CONNECTED AGRICULTURAL PUMPS

As per MNRE, GOI guidelines for PM KUSUM- Component C, **individual farmers having grid connected agriculture pump will be supported to solarise such pumps.** Feeder-wise implementation is proposed to be carried out. All agriculture pumps in a feeder will be solarized; however, States may impose a minimum solarisation requirement for a feeder in terms of minimum % of pumps solarized on that feeder.

The concerned DISCOM of the State will purchase excess power from the farmer at the rate decided by the respective State/SERC (State Electricity Regulatory Commission). The DISCOMs will ensure "must-run" status to the solarised feeders and will keep such feeders 'ON' during sunshine hours of a day. States may also formulate state specific policy for grid connected solar pumps, customized to needs of the respective State.

In view of the above requirements under Component C of the PM KUSUM Scheme, **AEDA would go ahead with execution of pumps under Component-C upon finalization of state specific policy/guidelines for grid connected solar pumps by the SERC and DISCOM.**