



**Uttar Pradesh New & Renewable Energy Development  
Agency (UPNEDA)**

(Deptt. of Additional Sources of Energy, Govt. of U.P.)

**BID DOCUMENT**

**FOR**

Supply, Installation, Testing, Commissioning & 5 Years Comprehensive Maintenance of Distributed Grid Connected Solar PV Systems along with VFD for Solarization of 10000 Nos Grid Connected Agriculture Pumps under KUSUM Component C-1 Scheme in the state of Uttar Pradesh as per specification given in Scope of Work of Bid Document.



**Bid No: - 01//UPNEDA-PM KUSUM-C1/GCPS/2024-2025 Dated 29.08.2024**

Issued by

**Uttar Pradesh New & Renewable Energy Development Agency  
(UPNEDA)**

(Deptt. of Additional Sources of Energy, Govt. of U.P.)

VibhutiKhand, Gomti Nagar, Lucknow, U.P. - 226010

Website: [www.upneda.org.in](http://www.upneda.org.in) E-mail : [ho\\_rka@rediffmail.com](mailto:ho_rka@rediffmail.com)

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## 1 Abbreviation & Definitions

Sr. No	Particulars	Definition
1	UPNEDA	Uttar Pradesh New & Renewable Energy Development Agency
2	Govt. of UP	Government of Uttar Pradesh
3	PM KUSUM	Pradhan Mantri Kisan Urja Suraksha Evam Uthan Mahabhiyan
4	GoI	Government of India
5	DD	Demand Draft
6	EMD	Earnest Money Deposit
7	BG	Bank Guarantee
8	RTGS	Real Time Gross Settlement
9	NEFT	National Electronic Fund Transfer
10	PV	Photovoltaic
11	GST	Goods & Services Tax
12	GSTIN	GST Identification Number
13	MNRE	Ministry of New and Renewable Energy
14	NABL	National Accreditation Board for Testing & Collaboration Limited
15	CA	Chartered Accountant
16	LoA	Letter of Award
17	LoI	Letter of Intent
18	BOQ	Bill of Quantity
19	MSME	Micro, Small & Medium Enterprises
20	RESIMS	Renewable Energy Solar Installation Monitoring Software
21	AMC	Annual Maintenance Contract
22	BIS	Bureau of Indian Standards
23	STC	Standard Test Conditions
24	IEC	International Electrotechnical Commission
25	MPPT	Maximum Power Point Tracking
26	PWM	Pulse Width Modulation
27	GSM	Global System for Mobile Communication
28	GPRS	General Packet Radio Service
29	SMS	Short Message Service
30	SPV	Special Purpose Vehicle
31	UID	Unique ID
32	IVRS	Interactive Voice Response System
33	RCC	Reinforced Cement Concrete
34	DC	Direct Current

In this “Bid / Tender document” the following words and expression will have the meaning as herein defined where the context so admits:

- 1.1 “Affiliate”** shall mean a company that either directly or indirectly
- a. controls or
  - b. is controlled by or
  - c. is under common control with a Bidding Company and “control” means ownership by one company of at least twenty six percent (26%) of the voting rights of the other company.
- 1.2 “B.I.S.”** shall mean specifications of Bureau of Indian Standards (BIS).
- 1.3 “Bid/Tender”** shall mean the Techno Commercial and Price Bid submitted by the Bidder along with all documents/ credentials/ attachments/ annexure etc., in response to this bid, in accordance with the terms and conditions hereof.
- 1.4 “Bidder/Bidding Company”** shall mean Bidding Company submitting the Bid. Any reference to the Bidder includes Bidding Company/ including its successors, executors and permitted assigns as the context may require”
- 1.5 “Bid Bond”** shall mean the unconditional and irrevocable bank guarantee to be submitted along with the Bid by the Bidder under this Tender, in the prescribed Format.
- 1.6 “CEA”** shall mean Central Electricity Authority.
- 1.7 “Chartered Accountant”** shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949.
- 1.8 “Competent Authority”** shall mean Director of Uttar Pradesh New & Renewable Energy Development Agency himself and/or a person or group of persons nominated by Director for the mentioned purpose herein.
- 1.9 “Commissioning”** means Successful operation of the Project / Works by the Contractor, for the purpose of carrying out Performance Test(s) as defined in Tender.
- 1.10 “Company”** shall mean a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto.
- 1.11 “Eligibility Criteria”** shall mean the Eligibility Criteria as setforth in this Tender.

- 1.12 **"Eligible Bidder(s)"** shall mean a Bidder who is qualified as per the eligibility requirement pursuant to this RfP;
- 1.13 **"Financially Evaluated Entity"** shall mean the company which has been evaluated for the satisfaction of the Financial Eligibility Criteria setforth hereof.
- 1.14 **"IEC"** shall mean specifications of International Electro-Technical Commission.
- 1.15 **"kWp"** shall mean Kilo-Watt Peak as defined in Company Act 2013 and Amendment, if any.
- 1.16 **"O&M"** shall mean Operation & Maintenance for 5years of Solar PV system.
- 1.17 **"Project capacity"** means Capacity in kW allocated to the Bidder. The project capacity specified is on "AC" output Side only.
- 1.18 **"Price Bid"** shall mean Envelope II of the Bid, containing the Bidder's quoted Price as per the BOQ of this TENDER;
- 1.19 **"Qualified Bidder"** shall mean the Bidder(s) who, after evaluation of their Techno Commercial Bid stand qualified for opening and evaluation of their Price Bid;
- 1.20 **"Solar PV"** means the grid interactive solar photo voltaic power system that uses sunlight for direct conversion into electricity through photo voltaic technology.
- 1.21 **"Solarization"** shall mean to connect the existing grid connected Agriculture Consumer pump-sets of farmer to the distributed, renewable energy source of Solar by installing Grid connected SPV system of the required capacity in the farmer's premises as per the Tender Document terms and condition.
- 1.22 **"Statutory Auditor"** shall mean the auditor of a Company appointed under the provisions of the Companies Act, 1956 /2013 or under the provisions of any other applicable governing law.
- 1.23 **"Successful Bidder(s) / Contractor(s)"** "Successful Bidder(s)" shall mean the Eligible Bidder(s) who quoted the lowest price for bid pursuant to this RFP for implementation of Projects as per the terms and condition of the RFP and to whom LoA has been awarded.
- 1.24 **"UPNEDA"** shall mean Uttar Pradesh New & Renewable Energy Development

Agency, Lucknow (State Nodal Agency) under MNRE.

1.25 **“SNA”** shall mean State Nodal Agency.

1.26 **“Wp”** shall mean Watt Peak



## **2 Disclaimer**

1. The information contained in this Bid document (hereafter referred to as “Bid” or subsequently provided to Bidder(s), whether verbally or in documentary or any other form, by or on behalf of the UPNEDA, or any of its subsidiary or employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this Bid and such other terms and conditions subject to which such information is provided.
2. This Bid is not an agreement and is neither an offer nor invitation by the UPNEDA to the prospective Bidder or any other person. The purpose of this Bid is to provide interested parties with information that may be useful to them in the formulation of their application for qualification and thus selection pursuant to this Bid. This Bid may not be appropriate for all persons, and it is not possible for the UPNEDA, its employees or advisors to consider the objectives, financial situation and particular needs of each party who reads or uses this Bid. The assumptions, assessments, statements and information contained in this Bid may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this Bid and obtain independent advice from appropriate sources.
3. Information provided in this Bid to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. UPNEDA accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.
4. UPNEDA, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this Bid or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the Bid and any assessment, assumption, statement or information contained therein or deemed to form part of this Bid or arising in any way with selection of Bidder for participation in the Bidding Process.
5. UPNEDA also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this Bid.
6. UPNEDA may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this Bid. The issue of this Bid does not imply that the UPNEDA is bound to select and shortlist Bidders and the UPNEDA reserves the right to reject all or any of the Bidders or Bids without assigning any reasons whatsoever.

7. The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the UPNEDA or any other costs incurred in connection with or relating to its Bidder. All such costs and expenses will remain with the Bidder and the UPNEDA shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Bidding Process.

### 3 Bid Details

Sr. No.	Particulars	Details
1	<b>Bid no:</b>	01/UPNEDA-PM KUSUM-C1/GCPS/2024-2025 Dated 29.08.2024
2	<b>Particulars of the work:</b>	Supply, Installation, Testing, Commissioning & 5 Years Comprehensive Maintenance of Distributed Grid Connected Solar PV Systems along with VFD for Solarization of 10000 Nos Grid Connected Agriculture Pumps under KUSUM Component C-1 Scheme in the state of Uttar Pradesh as per specification given in Scope of Work of Bid Document.
3	<b>Tentative Quantity (Nos)</b>	<b>10000 Nos</b> The above said quantity is dependent on availability of fund.
4	<b>Estimated Cost including GST (Rs)</b>	<b>Rs 407.41 Crores</b>
5	<b>Period of Work</b>	Within 4 months from the date of issuance of Work Order or as specified by UPNEDA
6	<b>E-Bid Portal (website):</b>	etender.up.nic.in
7	<b>E-Tender Cost:</b>	Tender Fee of Rs 11800/- (inclusive of GST) in the form of DD or RTGS/NEFT or any other online mode.
8	<b>Earnest money deposit (EMD):</b>	The bidder should submit EMD in the form of BG or DD of 2 % of Estimated Cost.
9	<b>Performance Security</b>	5% of Work Order Value
10	<b>Availability of tender document on e-tender Portal</b>	From: 30.08.2024
11	<b>Pre-Bid Meeting</b>	On:06.09.2024 at 12:30 pm
12	<b>Bid submission end date &amp; Time</b>	On: 23.09.2024 upto 6:00 pm
13	<b>Online technical Bid Opening date &amp; time</b>	On: 24.09.2024 at 12:30 pm
14	<b>Financial Bid Opening date &amp; time (Only of technically qualified bidders)</b>	Shall be intimated later
15	<b>Consortium/JV Allowed:</b>	No
16	<b>Sub-Contracting Allowed:</b>	No
17	<b>Proposal Language:</b>	English
18	<b>Proposal Currency:</b>	INR
19	<b>Venue of opening of technical &amp; financial Bids</b>	UPNEDA Head Office, Vibhuti Khand, Gomti Nagar, Lucknow-226010
20	<b>Enquiries/clarifications may be sought by the Bidder from</b>	<b>Director,</b> Uttar Pradesh New & Renewable Energy Development Agency, Vibhuti Khand, Gomti Nagar, Lucknow Fax: 0522-2720779, 2720829 Email: ho_rka@rediffmail.com Website: <a href="http://upneda.org.in">http://upneda.org.in</a>
21	<b>Period of validity of rates for acceptance</b>	3 months from opening of financial bid

#### Note:

- a. Bidders are advised to study the tender Document carefully. Submission of Bid against this tender shall be deemed to have been done after careful study and examination of the procedures, terms and conditions of the tender Document with full understanding of its implications.

- b. Director, UPNEDA reserves the right to extend the date of opening of Financial Bid in unavoidable circumstances.
- c. All the required documents including Price Schedule/BOQ should be uploaded by the Bidder electronically in the PDF/XLS format. The required electronic documents for each document label of Technical (Qualification details, Bid Form and Technical Specification details) schedules/packets can be clubbed together to make single different files for each label. All the enclosures should be scanned and uploaded with bid.

**(Signature of Bidder)**  
**With Seal**

## 4 Brief Description of the Proposal & its Submission

The Bid proposal shall be made in TWO PARTS i.e., PART-I and PART-II. PART-I shall contain the 'Technical Bid' and PART-II shall contain the 'Price Bid', which shall be prepared in the manner described below:

### 4.1 Part I: Technical Bid (Online Submission Only)

1. The following documents (forms) duly filled in and signed by the Bidder shall be submitted as PART-I of the Bid Proposal:
  - a. **Form A:** Covering Letter
  - b. **Form B:** General Particulars of the Bidder
  - c. **Form C:** Checklist
  - d. **Proof D:** Proof of payment or demand draft for cost of payment of the tender document.
  - e. **Form E:** Earnest Money Deposit to be submitted as DD or BG from any nationalized or scheduled bank in the specified format
  - f. **Form F:** Bidder documentary evidence in support of the Pre-Bid Eligibility Criteria
  - g. **Form G:** Schedule of Experience (Supply & Installation)
  - h. **Form H:** Declaration on Notarized Affidavit that the information provided by the Bidder is true to the best of its knowledge, specifically pertaining to the experience furnished & conflict check.
  - i. **Form I:** Format of Performance Bank Guarantee (PBG)
  - j. **Form J:** Format for bid security declaration
  - k. **Form K:** Format for power of attorney
  - l. **Form L:** Format for Joint Commissioning and Handing over certificate /Warrantee Card.
  - m. **Form M:** Certificate of UPNEDA Project Officer
  - n. **Form N:** Format: Technical Bid
  - o. The Bid document issued by UPNEDA, amendments / corrigendum / interpretations/ addendum/clarifications etc. for the work, if any, duly signed by the Bidder as a token of unconditional acceptance.
  - p. Audited Profit and Loss Account and Balance sheet along with CA certificate (Turnover and net worth) for the last five financial years are to be enclosed.
  - q. Copy of Certificate of Incorporation.
  - r. Copy of the GST number of the firm.
  - s. Copy of Permanent Account Number (PAN) issued by IT department.
  - t. Information regarding ex-employees of UPNEDA or its subsidiary companies working in the bidder organization if any. The bidder can use its own format regarding the same.
  - u. Memorandum and Article of Association

- v. Any other information, the Bidder desires to furnish in connection with this Bid.

#### 4.2 Part II: Price Bid (Online Mode Submission only)

1. The Bidder shall indicate prices on the appropriate financial bid schedule on e-tender Portal online only. The price quoted should include all taxes **including GST**.
2. Prices shall be quoted in Indian Rupees (INR) only.

#### 4.3 Language of Bid & Measure

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and UPNEDA shall be written in the English provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purpose of interpretation units of measurement shall be MKS system.

#### 4.4 Proposal Submission

- a. STEP I: Tender Fee and Bid Security (Earnest Money):
- i. Prospective Bidders interested to participate in the bidding process are required to submit their Project proposals in response to this Bid document along with Tender Fee. Tender fee INR 11,800/- inclusive of GST, The tender Fee is to be furnished through Demand Draft (DD) drawn in favour of "Director UPNEDA", payable at Lucknow. A bidder will be eligible to participate in the bidding process only on submission of entire financial amounts as per the Bid. In case the Bidder chooses to submit the amounts pertaining to Tender Fee through NEFT/RTGS (electronic transfer), the Bidder shall submit the transaction receipt instead of the corresponding DD, as part of the offline bid submission.

The bank details of UPNEDA have been mentioned below. Bids submitted without Tender Fee, may be liable for rejection by UPNEDA

Name & Address of Account Holder	Uttar Pradesh and Renewable Energy Development Agency
Bank Name	Central Bank of India
Email	Bmluck3964@centralbank.co.in
Account No	2185286335
IFSC Code	CBIN0283946
MICR Code	226016035

- ii. The bidder should submit EMD in the form of BG or DD of 2 % of Estimated Cost. The Bidder shall furnish Interest free EMD in the form of Bank Guarantee (BG)/ Demand Draft drawn in favour of "Director, UPNEDA", payable at Lucknow. The validity of EMD shall be for a period of 6 months from the Bid Deadline.

MSMEs having unit in state of Uttar Pradesh are exempted from submission of Bid Security/EMD, however required to submit a "Bid Security Declaration" Letter on non-Judicial stamp of appropriate

value as per prescribed format (Form-J). **Form E: Earnest Money Deposit to be submitted as DD or BG from any nationalized or scheduled bank** in the specified format. On furnishing the performance security and execution of contract agreement by successful bidders, UPNEDA will notify the unsuccessful bidders and their earnest money deposit will be refunded thereafter.

The Bid Bond/EMD shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to the Solar PV System under following circumstances:

- a. Hundred percent (100%) of Bid Bond/EMD amount of the proposed capacity, if Bidder withdraws/revokes or cancels or unilaterally varies their bid in any manner during the period of Bid Validity specified in the document.
  - b. Hundred percent (100%) of Bid Bond/EMD amount of the proposed capacity, if the Empanelled Vendor fails to unconditionally accept the Letter of Intent (LOI)/LOA/Work Order, whoever is issued first, within 15 days from the date of its issue.
  - c. Hundred percent (100%) of Bid Bond/EMD amount of the proposed capacity, if the Empanelled Vendor fails to furnish the "Performance Bank Guarantee" within 30 days of issuance of Letter of Intent (LoI)/LOA/Work order, whichever is issued first.
  - d. Any bid not secured with the Notarized bid security declaration as stipulated in bid will be liable for action before opening of financial bid.
- b. STEP II: All the documents mentioned above along with technical format duly filled in should be submitted in e-form only as "Part-I – Technical Bid".
  - c. STEP III: "PART-II - Price Bid" shall also be submitted in e-form only in prescribed format duly filled in.

#### **4.5 Format and Signing of Bid:**

1. The bid must contain the name, residence and places of business of the persons making the Bid and must be signed and sealed by the Bidder with his usual signature. The name and designations of all persons signing should be typed or printed below the signature.
2. Bid by corporation/ company must be signed with the legal name of the corporation/ company/firm by the 'President', Managing director or by the 'Secretary' or other designation or a person duly authorized.
3. The original copy of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to bid and bidder to the contract. The letter of authorization shall be submitted along with power-of-attorney. All the pages of the bid shall be initialed by the person or persons signing the Bid and submitted at the time of signing of agreement/contract.
4. The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder in which case such corrections shall be initialed by the person or persons signing the Bid.

#### **4.6 Deadline for Submission of Bids:**

Bids must be uploaded by the Bidder in the date; time on e-tender Portal as specified in the Bid notice/ Bid documents.

#### **4.7 UPNEDA's Right to Reject Tender:**

1. UPNEDA reserves the right to reject any or all tenders received at any stage without assigning any reason thereof and the Tenderer shall not be entitled to any costs, charges or expenses in this regard.
  - a. In case Tender/bid is not received within the stipulated time and date as indicated above.
  - b. If the Tender/bid is not accompanied with the requisite tender fee, earnest money deposit, requisite documents and schedules.
  - c. If proposal is not a firm proposal.
  - d. If Tender/bid is not on the prescribed lines, form and pattern described in the tender document.
  - e. If each page of the proposal (technical) is not duly signed and stamped by the authorized signatory.
  - f. If a material misrepresentation is made or discovered.
  - g. In case of non-furnishing of any requisite document with the bid, UPNEDA may issue queries for submission of such required document. If the bidder still fails to submit the required document, the bid will be considered as non-responsive, and bid may be summarily rejected.
  - h. If it is found that the rate quoted by the Bidder is unusually high or unusually low unless UPNEDA is convinced about the reasonableness of the rate on analysis of such rate.
  - i. If canvassing is found in connection with tenders and/or with uncalled for remarks.
  - j. If the offer is accompanied with any modification(s) and/or special condition(s).
  - k. If the proposal is found with erasing action or overwriting unless the corrections and/or alterations are not accompanied with initials and attestations of the authorized person(s).

#### **4.8 Bid Validity Period**

1. Validity of the offer should be 3 months from the date of opening of the financial bid of the e-tenders.
2. In exceptional circumstances, the UPNEDA will solicit the Bidder's consent to an extension of the period of validity. The request and the response thereof, shall be made in writing. The contract performance security provided under Form I shall also be suitably extended.

#### **4.9 Opening of Bids**

The procedure of opening of the e-tender shall be as under:

1. First part (PART-A) uploaded having Bid specification and super scribed as "Technical bid" shall be opened at the time and date mentioned in the Bid notice



by UPNEDA's representatives in the presence of Bidders, who choose to be present.

2. Second part (PART-B) containing Financial Bid shall be opened (after establishing technical suitability of the offer) as per schedule. Second part of only those Bidders shall be opened whose first part (PART-A) shall be found commercially clear and technically suitable.

#### **4.10 Clarification of Bids & Pre-Bid Conference**

1. A prospective Bidder requiring any clarification of the Bid Documents shall submit their request in writing to UPNEDA by Email at the UPNEDA's mailing address indicated in the Bid. The request must reach on or before pre bid meeting if any. The UPNEDA will upload the changes/modifications/amendment based on clarification request if any on the e- tender portal.
2. All are requested to remain updated with the e-tender Portal. No separate reply/ intimation will be given elsewhere. Verbal clarifications and information's given by the UPNEDA or its employees or its representatives shall not be in any way entertained.
3. **Enquiries/clarifications may be sought by the Bidder from:**

Director,

Uttar Pradesh New & Renewable Energy Development Agency, Vibhuti Khand,  
Gomti Nagar, Lucknow

Fax: 0522-2720779, 2720829

Email: ho\_rka@rediffmail.com

Website: <http://upneda.org.in>

#### **4.11 Amendment to Bid Documents**

At any time prior to the submission of the Bid the UPNEDA may for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the e-tender documents by amendments. Such document shall be made available on e-tender Portal. No separate reply/ intimation will be given elsewhere.

Therefore, all concerned are required to remain updated with the e-tender Portal.

#### **4.12 Local Conditions**

It shall be imperative on each bidder to fully inform him of all local conditions and factors, which may have any effect on the execution of the works covered under these documents and specifications. UPNEDA shall not entertain any request for clarifications from the Bidder, regarding such local conditions.

## 5 Pre-Bid Eligibility Criteria

In this tender, single bidder allowed for participation. Any bid not found to be in conformance with any of the pre-qualifying conditions may be summarily rejected and not be considered for further evaluation. The invitation to online bid is open to all the agencies, firms, companies, LLPs, State Government and Central Government agencies, who meet the requisite qualifying requirements stipulated herein under and the bidder shall provide satisfactory evidence that qualifies under the following:

Sr. No.	Particulars	Details
1	<p>The bidder should be a firm registered/incorporated under Companies Act, 1956 or Companies Act, 2013/ and further amendment (s), or a registered partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2002)/ Proprietorship or under Society act.</p> <p><b>(System integrators are also allowed to participate in the bid.)</b></p>	<p><b>Duly attested copies of:</b></p> <p><b>a.</b> Certificate of Incorporation issued by the Registrar of Companies</p> <p><b>b.</b> Authorization Letter in the name of Bidder issued from OEM.</p>
2	<p>Bidder should have valid Test report of <b>complete system/various components (PV module, PCU cum inverter, etc)</b> issued from MNRE authorized testing center or NABL accredited test lab.</p>	<p><b>a.</b> Test report of MNRE/NABL accredited lab.</p>
3	<p><b>Past Performance:</b> The Bidder should have continuously supplied and installed same or similar Category Products (i.e. Grid Connected / Off-Grid Solar Photovoltaic Systems (SPV) (SPV Pumps / Rooftop SPV / Ground mounted SPV) in last five years i.e.2019-2020, 2020-2021,2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company.</p> <p>Required experience capacity from the Bidders for each Part of tendered capacity separately.</p> <p>Part A- For Pump Capacity (3HP)- 4725 kW</p> <p>Part B- For Pump Capacity (5HP)- 5625 kW</p> <p>Part C- For Pump Capacity (7.5HP)- 11760 kW</p> <p>Part D- For Pump Capacity (10 HP)- 2235 kW</p>	<p><b>a.</b> Work order copies/ LoA's/Completion Certificates from registered central/state (including local body or autonomous institutions working under it.) / Company.</p>

Sr. No.	Particulars	Details
	If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative experience requirements of each respective part.	
4	The Bidder should have valid GSTIN registration certificate. A copy of which should be enclosed.	Valid GSTIN Registration Certificate
5	<p><b>Bidder Turn over Criteria:</b> Bidders should have Overall Average Annual Turnover (ATO) in the last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be as per following:-</p> <p>Required Average Annual Turnover from the Bidders for each Part of tendered capacity separately.</p> <p>Part A- For Pump Capacity (3HP)- 24.04 Crore Part B- For Pump Capacity (5HP)- 28.15 Crore Part C- For Pump Capacity (7.5HP)- 58.85 Crore Part D- For Pump Capacity (10 HP)- 11.18 Crore</p> <p>If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative Average Annual Turnover of each respective part.</p> <p>(For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).</p>	Duly authorized copy of audited annual report/Balance Sheet for last five years is to be submitted by respondent along with CA certificate.
6	The bidder's Net worth as on the last day of preceding financial year must be positive.	Duly authorized copy of audited annual report is to be submitted along with a practicing CA's certificate.

**Note:** In response to above all points the document is to be submitted.

Past Performance Experience Format (Bidders must submit completion certificate and fill the format as below: -

S. No	Work Order No	Order Date	Value of Work	Deptt/Agency/ Beneficiary for which work carried out	Description of Project	Supply/Completion Period (with from/ to dates)	Ref. No. & Date of Material Receipt	Certificates/PO/Work Completion Certificates.
1								

## **6 Technical Evaluation Criteria**

The UPNEDA will carry out a detailed evaluation of the bids previously determined to be substantially responsive in order to determine whether the technical aspects are in accordance with the requirements set forth in the bidding documents. In order to reach such a determination, the UPNEDA will examine and compare the technical aspects of the bids on the basis of the information supplied by the bidders, taking into account the following factors:

- i. Overall completeness and compliance with the technical specifications as stipulated in this bid. The bid that does not meet minimum acceptable standards of completeness, consistency and detail will be rejected for non-responsiveness.
- ii. Achievement of specified performance criteria by the facilities as per scope of work.
- iii. Type, quantity and long-term availability warranty and maintenance services.
- iv. Any other relevant factors, if any, listed in the tender document, or that the UPNEDA deems necessary or prudent to take into consideration.

### **6.1 Clarification of Bid**

- i. To assist in the examination, evaluation and comparison of bids the UPNEDA may at its discretion ask the bidder for a clarification of its bid. The request for clarification and the response will be through E-mail (ho\_rka@rediffmail.com) within stipulated time period, Response through other mode other than above e-mail in stipulated time will not be entertained.
- ii. UPNEDA reserves the right to interpret the Bid submitted by the Bidder in accordance with the provisions of this document and make its own judgment regarding the interpretation of the same. In this regard UPNEDA shall have no liability towards any Bidder and no Bidder shall have any recourse to UPNEDA with respect to the selection process. UPNEDA shall evaluate the Bids using the evaluation process specified in this document or as amended, at its sole discretion. UPNEDA's decision in this regard shall be final and binding on the Bidders.

## **7 Evaluation of Bids**

The Procedure for Finalization of BID would be as follows:

### **7.1 Finalization of BID:**

- a. First the Technical bids shall be opened and evaluated.
- b. Then the price bid of technically qualified bidders shall be opened

### **7.2 Finalization of Empanelment:**

- a. First the Technical Bids shall be opened and evaluated. Then the price bid of technically qualified parties shall be opened.
- b. The lowest rate (i.e. L-1) received (and in turn approved by the competent authority) would be the "Approved Rate".
- c. Approved lowest rate would be offered to other lowest bidders subject to their rate fall within 25 % of L1.
- d. L1 may be awarded 50% of total bid quantity for each capacity of pump (i.e 3HP/5HP/7.5HP/10HP) subject to performance, speedy work completion and on availability of fund. The remaining of Bid quantity shall be awarded among others qualified MSE /Non MSME firms. Allocation will depend on performance. There will be additional allocation provision on early completion of project with respect to allocation of quantity.
- e. Minimum 25% of the total order quantity for each capacity of pump (i.e 3HP/5HP/7.5HP/10HP) may be awarded amongst the micro and small industries qualified firm/firms at the lowest approved rate subject to their consent at to work on lowest rate and their capacity subject to availability of fund. If no MSE bidder will be qualified in the bid then 25% MSE target quantity shall be awarded to other than MSE bidders as per Bid.
- f. Director, Uttar Pradesh New and Renewable Energy Development Agency, (UPNEDA) reserves the right to allocate additional capacity to the Firms based on the performance and speedy work execution.
- g. UPNEDA may allocate work district/division wise to the successful bidders. The successful bidders can survey & identify the work sites themselves and UPNEDA will also allot work against the application received on KUSUM C1 Portal (<https://upnedakusumc1.in>). The successful bidders will have the opportunity to execute projects at sites they have identified as well as those allocated by UPNEDA.
- h. The Successful Bidder can open a service center at the allotted respective districts.
- i. Training of the users and entrepreneurs/ operators will be arranged by the contractor/ bidder.
- j. If required UPNEDA reserves the right to negotiate with (lowest) L-1 bidder before finalization of the tender.
- k. UPNEDA reserves the right to accept any bid and to reject any or all bids.
- l. UPNEDA reserves the right at the time of awarding the contract to increase or decrease the quantity of works as per terms and conditions.
- m. NOTIFICATION OF EMPANELMENT:  
List of successful Bidder(s) for contract shall be displayed on UPNEDA's website and shall be intimated in writing to the contractor.

## 8 General Conditions of the contract

### 8.1 Definitions

1. "UPNEDA" shall mean The Director of UPNEDA or his representative and shall also include its successors in interest and assignees. The "Contractor" shall mean (successful bidder) i.e. the person whose Bid has been accepted by UPNEDA and shall include his legal representatives and successors in interest.
2. The contract/agreement will be based on rate contract for 12 month. The work must be completed within 4 months from the date of issuance of work order on turnkey basis.
3. That on the request of the contractor/ bidder and also in the interest of the organization the "UPNEDA" is authorized to extend the validity of the agreement, subject to that the request of the contractor/ bidder is received before the expiry of the agreement period. Maximum period of extension shall be 6 months on the same terms and conditions as contained in this agreement.
4. The agreement shall be deemed to be extended till the date of completion of last work order including 5 years comprehensive O&M subject to the completion period as provided in the above sub clause 2 of clause 8.1.
5. In the interest of the work and the programme, agreement executed between the contractor/bidder and the "UPNEDA" may be extended to a mutually agreed period, if the need so arises. It shall be sole responsibility of the contractor/ bidder to get verified the quality & quantity of the supplied material at the site of delivery.
6. Director, Uttar Pradesh New and Renewable Energy Development Agency, (UPNEDA) reserves the right to increase or decrease the quantity of Bid to any extent. The decision of Director will be final and binding.

### 8.2 Liquidated Damages

1. If the contractor/bidder fails to perform the services/work within the time periods specified in the contract (In case of delay for any reason other than due to Force Majeure conditions or any extension thereof granted to him by UPNEDA) the "UPNEDA" shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damage, a sum equivalent to 0.5% of the contract price for each week (For the purposes of calculation of delay, part of week shall be treated as a week) of delay until actual performance up to a maximum deduction of 5% of the contract price. Once the maximum is reached, the "UPNEDA" may assess the progress of work and take decision where the work order is to be cancelled, forfeit the performance security and debar/blacklist the firm **along with its Officers (Director/ Partner/Proprietor as the case may be) by way of mentioning the Aadhar/DIN number as the case may be in the Black list or to continue with time extension with further penalty .In case the liability of the firm is still not recovered the remaining amount would be liable to recovered from the movable /immovable assets of the firm.** The

contractor /bidder in “UPNEDA” may consider termination of the contract. In the case of violation of contract, UPNEDA may confiscate pending payment/ dues of the contractor/bidder assigning specific reasons and shall also have the power to debar/blacklist the contractor/ bidder **along with its Officers (Director/ Partner/ Proprietor as the case may be)** in similar circumstances. UPNEDA may also invoke performance /security.”

2. The contractor/ bidder shall have to comply with all the rules, regulations, laws and by-laws for the time being in force and the instructions if any, of the organization, in whose premises the work has to be done. “UPNEDA” shall have no liability in this regard.

### **8.3 Force Majeure**

1. Notwithstanding the provisions of clauses contained in this deed; the contractor/ bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to event of force majeure circumstances.
2. For purpose of this clause, "Force majeure" means an event beyond the control of the contractor/ bidder and not involving the contractor/ bidder's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of Government either its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes.
3. However, If a force majeure situation arises, the contractor/ bidder shall immediately notify the “UPNEDA” in writing. The decision of the competent authority of UPNEDA in above conditions shall be final.

### **8.4 Settlement of Disputes and Provisions for Arbitration**

1. The High court of Judicature at Allahabad and Courts subordinate thereto, at Lucknow, shall alone have jurisdictions to the exclusion of all other courts.
2. UPNEDA shall have at all reasonable time access to the works being carried out by the contractor/ bidder under the contract. All the work shall be carried out by the contractor/bidder to the satisfaction of “UPNEDA”.
3. If any question, dispute or difference what so ever shall arises between “UPNEDA” and the contractor/ bidder, in the connection with the agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of existence of such question, dispute or difference and the same shall be referred to the sole arbitration of the Principal Secretary/Secretary of the Uttar Pradesh or a person nominated by him not below the rank of Secretary. This reference shall be governed by the Indian Arbitration and Conciliation Act 1996, and the rules made there under. The award in such arbitration shall be final and binding on both the parties. Work under the agreement shall be continuing during the arbitration proceedings unless the “UPNEDA” or the arbitrator directs otherwise.

## **8.5 Confidentiality**

1. The successful Bidder shall maintain strict confidentiality of all documents, record notes of discussion, drawings, designs and other technical information supplied to them by UPNEDA or prepared by them in respect of the works under this contract and shall not pass on any information to any other agencies/organizations without the written permission of the UPNEDA.
2. After completion of works, the successful Bidder should return all relevant documents to UPNEDA.

## **8.6 Subletting or Transfer of Contract**

The contractor/ bidder shall not, without the consent in writing of “UPNEDA”, transfer, assign or sublet the work under the contract or any substantial part thereof to any other party.

contractor any part of the same to any party without the previous written consent of the other party.

## **8.7 Taxes Duties and Insurance:**

1. The price quoted should include all taxes including GST, duties and Insurance expenditure etc. whatsoever. Supplier/contractor/bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & GST or any other tax State or Central Government norms will be payable by the contractor/ bidder whatsoever. If any new tax/duty is levied during the contract period, the same will be borne by the contractor exclusively. CGST, SGST and TDS will be deducted from the payment of the contractor/ bidder as per the prevalent laws and rules of Government of India and Government of the Uttar Pradesh in this regard.

## **8.8 Inspections and Tests:**

1. The following inspection procedures and tests are required by the “UPNEDA” in the presence of “UPNEDA”'s representative if so desired by “UPNEDA”.
2. The “UPNEDA” or its representative shall have the right to inspect and / or to test the goods to confirm their conformity to the contract. The special conditions of contract and/ or the Technical specifications shall specify what inspections and test the “UPNEDA” required.

## **8.9 Inspection at Works:**

1. The “UPNEDA”, his duly authorized representative shall have at all reasonable times access to the contractor/bidders premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the works during its manufacture.
2. The contractor/ bidder shall give the “UPNEDA”, 7 day's written notice of any material being ready for testing. It shall be mandatory that such notice should reach “UPNEDA” within 30 days of placement of work order. Such tests shall be on the contractor/ bidder's accounts/expenses except for the expenses of the inspector. “UPNEDA” reserves the fullrights, to waive off inspection of material.



3. The contractor/ bidder are required to get the entire lot of the ordered material inspected at one time, before the supply of the materials. In case the contractor/ bidder fails to get the entire lot inspected at one time, the total expenses of the further inspection will be borne by the supplier/contractor/ bidder.
4. UPNEDA will bear the inspector cost at only one manufacturing plant. If a component is produced in more than one location, then the cost of positioning the inspection in the second and subsequent plants would be borne by the successful Bidder at their cost.
5. The inspection by “UPNEDA” and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the contractor/ bidder in respect of the agreed quality assurance programme forming a part of the contract.

#### **8.10 Warranty:**

1. The Contractor/ Bidder shall be solely responsible for commencement to completion of the work. It shall be responsible for any loss or damage happens at the work place or during the erection of the plant, not already approved by the UPNEDA, and shall, at its own cost, arrange for repair or compensation.
2. The Contractor/ Bidder shall warranty that the equipment used in installing the plant are new and unused.
3. The Contractor/ Bidder shall provide warranty, of the complete power plant towards any defect in design of the plant, equipment used including spare parts for a period of five (5) years from the date of Commissioning of the plant. The Warranty period shall be 25 Years for the PV modules.
4. Any defect noticed in the power plant during the period of five (5) years from the date of Commissioning of the power plant shall be rectified/replaced by the Contractor/ Bidder on its own motion or on due intimation by the UPNEDA or by the owner of the plant, as the case may be, free of charges.
5. The replacement of the defective component at the cost of Contractor/ Bidder shall be made with similar and/or equivalent make. The replaced component shall not, in any situation, reduce the performance of the plant.
6. The Contractor/ Bidder shall commence the replacement/rectification of the defect within seven (7) days from the date of identification of such defect and shall rectify the defect within mutually agreed time, failure in doing so shall enable the UPNEDA to rectify the defect at the expense of Contractor/ Bidder.
7. The Contractor/ Bidder shall provide warranty certificate along with the Commissioning report to the Beneficiaries/UPNEDA.
8. Since the maintenance of the system may also be taken up by the contractor/ bidder after expiry of 05 years of warranty period if the end user/”UPNEDA” so desires, the contractor/bidder shall take up annual maintenance of the installed system.
9. The contractor/ bidder shall maintain the system under annual maintenance contract with the end user.
10. The contractor/ bidder shall furnish to the Primary Beneficiary at the instruction manuals at the time of submission of commissioning certificate for the plant at each

site. The manual so prepared shall include the all diagrams and instructions to operate and maintain the whole plant.

11. Individual copies of the approval of the Electrical Inspectorate or concerned officer of the respective distribution licensee for interconnection of each plant with the distribution system (for the system above 10KW).
12. Hand-Over Agreement: The Contractor/ bidder shall hand-over the respective plant to the UPNEDA after its successful commissioning in excellent condition. Then concerned PO of UPNEDA handover to the end-user of plant. At the time of handing over all the performance tests of the major equipment shall be demonstrated to the user by Contractor and UPNEDA to ensure Generation from the solar photovoltaic power plant. While handing over the plant the Contractor/ bidder shall also hand over all technical documents, literature, instruction manuals, lists of spare part & tools & tackles.

#### **8.11 Patent Right and Royalties:**

1. The Contractor/ bidder shall indemnify the “UPNEDA” against all third-party claims of Infringement of patent, royalty's trademark or industrial design rights arising from use to the goods or any part thereof.

#### **8.12 Packing & Forwarding:**

1. Contractor/ bidders, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Contractor/bidder shall be held responsible for all damage due to improper packing.
2. The contractor/ bidder shall inform the “UPNEDA” of the date of each shipment from his works, and the expected date of arrival at the site for the information of the “UPNEDA” project offices at least 7 days in advance.

#### **8.13 Demurrage WHARF AGE ETC:**

1. All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor/ bidder

#### **8.14 Insurance:**

1. The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage during transportation shall be included in the bid price.

#### **8.15 Transportation:**

1. The contractor/ bidder is required under the contract to deliver the goods to the site. Transportation, storage, safety and security of the supplied material, issuance of road permit etc. shall be the sole responsibility of the contractor/bidder.

### **8.16 POST COMMISSIONING ACTIVITIES**

On completion of work, the contractor/ bidder shall submit all the documents related to the execution of contract and implementation of solar photovoltaic power plants including,

- All the consent, clearance and approvals
- Testing Certificate of solar module and PCU/Inverter from MNRE authorized test center.
- Plant charging/ commissioning certificate
- Photograph of site before installation and after installation

### **8.17 Project Inspection**

Project(s) shall be got inspected by the bidder from the list of empanelled experts/UPNEDA . All the expenses for third party expert inspection in this regard shall be borne by the Bidder only.

UPNEDA reserves the right to do sample inspection checks for the projects commissioned by the Bidder.

Uploading of Quarterly inspection report online on RESIMS website is mandatory.

### **8.18 Applicable Law:**

1. The contractor/ bidder shall be interpreted in accordance with the laws of the purchaser' country i.e. India. The station of "UPNEDA" Headquarter shall have exclusive jurisdiction in all matters arising under this contract.

### **8.19 Notice:**

1. Any notice given by one party to the other pursuant to the contract shall be sent in writing or by telegram or telex/ cable or Email and confirmed in writing to the address specified for that purpose in the special condition of contract.
2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

### **8.20 Timeline, Payment Terms**

1. The work completion time for all the above work is 4 (four) month from the date of issuance of work order.
2. The payments shall be made as per the following terms and conditions:
  - a. 70% of the ordered value after the supply, installation of the system and submission of fees for netmetering.
  - b. 15% of the ordered value after installation of netmetering and commissioning of the system along with the Joint Commissioning & handing over certificate, indicating bill of material and successful commissioning duly countersigned by the designated officer and end user.
  - c. The balance 15% payment shall be billed as AMC charges on annual basis kept as security deposit and to be released @ 3% at the end of each year for 5 years, on satisfactory performance and timely submission of quarterly performance report. The Bidder must upload quarterly inspection report

on RESIMS within 10 days of expiry of each quarter otherwise AMC of respective quarter elapsed.

- d. In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of “UPNEDA” shall be final.
- e. The Firm must collect AMC charges in the first quarter after the completion of each respective year. If not claimed by the firm within three month after expiry of respective year, the firm will be not eligible to claim same amount.

**Note:**

1. *The payments shall only be processed after uploading of the work details, bill details and photos etc on the UPNEDA, RESIMS website.*
2. *Uploading of Quarterly inspection report online on RESIMS website is mandatory for CMC Payment.*

**8.21 Others:**

1. I-V curve of the each module technical details such as Voc, Isc, FF, cell efficiency and Pmax etc. shall be supplied along-with each consignment and copy should be handed over to Beneficiaries/UPNEDA.
2. The Contractor/ bidder in consultation with concerned Project Officer of “UPNEDA” will conduct training programme for users, focusing on main features, operation and maintenance of the systems.
3. The Contractor/ bidder shall continue to provide spare parts after the expiry of warranty period at the users cost. If the contractor/ bidder fail to continue to supply spare parts and services to users “UPNEDA” shall take appropriate action against the Contractor/ bidder.
4. After successful supply/commissioning of the system and training, the system will be handed over to the Beneficiaries /person designated by the UPNEDA.
5. It shall be the sole responsibility of the contractor/ bidder to get verified the quality & quantity of the supplied material at the site of delivery.
6. The UPNEDA has the right to pick any sample in working condition from field, for random testing of any of the component of the system or complete system from MNRE authorized test center or own. The expenditure on the tests (for maximum 2 systems) will be borne by the supplier. If more system(s) are taken for testing, the cost of testing shall be borne by the UPNEDA.
7. Notice statement and other communication send by “UPNEDA” through registered post or fax or Email to the contractor/ bidder at his specified addresses shall be deemed to have been delivered to the contractor/ bidder.
8. The work shall be carried out by the contractor/ bidder as per design and drawings approved by “UPNEDA”, wherever, necessary, the contractor/ bidder shall submit relevant designs and drawings for approval of “UPNEDA”, well in advance. Work carried out without “UPNEDA”'s approval shall not be accepted and the “UPNEDA” shall have right to get it removed and to recover the cost so incurred from the contractor/ bidder.

9. The contractor/ bidder shall provide one copy with each system instruction manual/ routine maintenance manual both in English and Hindi language. The following minimum details must be provided with manual:
  - About the complete photovoltaic system including PV modules, battery and electronics
  - Do's and Don'ts
  - Clear instructions on regular maintenance and troubleshooting of the system
  - Name & address of the contact person in case of non-functioning of the system.
10. The contractor/ bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of "UPNEDA". The contractor shall distribute and fix a calendar at site, showing instructions, Do's, Don'ts with each unit. (The format of calendar should be approved by UPNEDA).
11. The Bidder shall enclose a declaration along with the Bid if any of the UPNEDA employees or his / her relatives, which term includes wife / husband, parents, grandparents, children, grand-children, brothers, uncles, aunts, cousins and their corresponding in-laws is/are partner(s) with them.
12. The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this Bid, UPNEDA shall reject a proposal without being liable in any manner whatsoever to the bidder, if it determines that the bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited practices**") in the selection process. In such an event, the UPNEDA shall, without prejudice to its any other rights or remedies, forfeit and appropriate the performance security, if available, as mutually agreed genuine pre-estimated compensation and damages payable to UPNEDA for, inter alia, time, cost and effort of UPNEDA, in regard to the work, including consideration and evaluation of such applicant's proposal.
13. Without prejudice to the rights of UPNEDA under the rights and remedies which UPNEDA may have under the LoA (Letter of Award) or the agreement, if an Bidder, as the case may be, is found by UPNEDA to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LoA or the execution of the agreement, such bidder shall not be eligible to participate in any Bid or TENDER issued by UPNEDA during a period of 2 (two) years from the date of such finding for the Bidder (as the case may be) has been engaged by UPNEDA.
14. For the purposes of this Clause, the following terms shall have the meaning here in after respectively assigned to them:

- a. **“Corrupt practice”** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the UPNEDA who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOA or has dealt with matters concerning the agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the UPNEDA, shall be deemed to constitute influencing the actions of a person connected with the Selection Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the UPNEDA in relation to any matter concerning the Project;
  - b. **“Fraudulent practice”** means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
  - c. **“Coercive practice”** means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;
  - d. **“Undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the UPNEDA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and
  - e. **“Restrictive practice”** means forming a cartel or arriving at any understanding, or arrangement among applicants with the objective of restricting or manipulating full and fair competition in the Selection Process.
15. Conflict of Interest- Bidder shall not have a conflict of interest that may affect the Selection Process (the **“Conflict of Interest”**). Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Authority shall forfeit and appropriate the Performance Security, if available, as mutually agreed genuine pre-estimated compensation and damages payable to the Authority for, inter alia, the time, cost and effort of the Authority including consideration of such Bidder's Proposal, without prejudice to any other right or remedy that may be available to the Authority hereunder or otherwise.

## **9 Contracting Arrangements**

### **9.1 Signing of the Contract Agreement**

1. Before execution of the work, a contract agreement for execution of the work shall be signed by the Bidder with UPNEDA within 7 days of communication from UPNEDA. In case agreement is not executed within the stipulated time, then bidder

will be suspended for participating in the tendering process, for a period of one (01) year from bid due date of above referred tender.

2. A formal agreement for a period of 01 (one) year shall be entered into between UPNEDA and the contractor/ bidder for the proper fulfillment of the contract. The expenses of completing and stamping of the agreement shall be paid by the successful bidder.
3. Issue of Letter of Empanelment  
After execution of the Agreement and Performance Security Deposit, the name of successful bidder(s) will be displayed in website of UPNEDA and a letter of empanelment will be sent to the qualified tenderer. Additional Work Order will be allocated on the performance & speedy work completion.

## 9.2 Performance Security

1. Performance Bank Guarantee (PBG) will have to be deposited by the successful Bidder in following manner:
  - a. The successful Bidders, who execute the agreement with UPNEDA for the work, shall have to furnish a security amount equivalent to 5% of total value of the work order in the form of Bank Guarantee valid for a period of 18 months from the date of work order. The bank guarantee may be issued by a nationalized bank or scheduled bank of RBI. Bank Guarantee shall be in favour of "Director, UPNEDA". The aforesaid Bank Guarantee shall be furnished prior to the execution of agreement. The performance Bank Guarantee shall be released after completion of installation and commissioning of all systems mentioned in the particular work order. The format of BG is attached with Bid as **Form J: Format of Performance Bank Guarantee (PBG)**.
  - b. The selected bidder shall have to extend the validity period of the Bank Guarantee beyond the initial date in case, the actual date of completion of the work is delayed due to any reason.
  - c. No Bank charges or interest shall be payable against the Bank Guarantees;

## 9.3 Termination of Contract

1. **Termination for insolvency:** "UPNEDA" may at any time terminate the contract by giving written notice to the contractor/bidder without compensation to the contractor/ bidder, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the "UPNEDA".
2. **Termination for Convenience:** The "UPNEDA", may by written notice sent to the contractor/ bidder, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of "UPNEDA".
3. "UPNEDA" may at any time by notice in writing to the contractor/ bidder either stops the work all together or reduces or cut it down. If the work is stopped all together, the contractor/bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the

date on which such notice is received by him. Such expenses shall be assessed by "UPNEDA", whose decision shall be final and binding on the contractor/ bidder. If the work is cut down the contractor/ bidder will not be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.



## 10 Scope of Work and Technical Specifications

The scope covers the Solarisation of existing Grid Connected Agricultural Pumps in the State under Component C-1 of the Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyan (PM KUSUM) scheme. This includes the Supply, Installation and Commissioning of SPV Power Plants with Grid connectivity for solarising the following capacity of Agricultural pumps:

Pump Capacity	Capacity of SPV Plant (kW)	Tentative Quantity (Nos)	Total Quantity of Pumps (Nos)
3 HP	4.5 kW	3500	10000 Nos
5 HP	7.5 kW	2500	
7.5 HP	11.2 kW	3500	
10 HP	14.9 kW	500	

- Design, Survey, Supply, Installation, Testing, Commissioning & 5 Years Comprehensive Maintenance of Distributed Grid Connected Solar PV Systems for Solarization of 10000 Nos Grid Connected Agriculture Pumps under KUSUM Component C-1 Scheme in the state of Uttar Pradesh
- Wiring up to Distribution Board from the SPV Power system will be in the scope of the Successful bidder(s).
- Performance testing of the complete system.
- Remote Monitoring System: It will be mandatory for Contractor to create remote monitoring system to monitor performance of the system post-installation. It will be mandatory to submit quarterly maintenance report along with performance data of solar power plant online to MNRE and/ or UPNEDA in a manner and format prescribed by MNRE and/ or UPNEDA.

All the necessary approvals from UPPCL/DISCOM (Electrical Utility)/Electrical Inspectorate, feasibility study, necessary civil work, Mounting of Module Structures, PV Module Installation, Inverter Installation, DC/AC Cabling and interconnections, Installation of Lightning Arresters and Earthing System as per the standards, Net Metering, arranging all the necessary inspections from UPNEDA/UPPCL/Electrical Inspectorate/ UPNEDA District Office as part of Pre Commissioning, if any, Commissioning of the PV Power Plant, are coming under the scope of the bidder.

**Note: - During a power supply outage, grid failure, or mains failure, the plant shall operate in off-grid mode through a Variable Frequency Drive (VFD) during daytime. The switching between the grid-tied inverter (on-grid mode) and the VFD (off-grid mode) shall be automatic via an automatic changeover mechanism. All necessary arrangements for the plant's switching mechanism between on-grid and off-grid mode, including the VFD, shall be in scope of the bidder. A single line diagram (SLD) for reference is enclosed as Annexure-I.**

*Make of Items must be as per the BIS/ MNRE technical specification and equivalent make offered by the bidders in the Bid. The Bidders may change the make of items with the permission of competent authority of UPNEDA as and when required on valid circumstantial conditions. The bidder shall provide Test Certificate of the proposed make of items issued from MNRE authorized testing center or NABL accredited test lab.*

The list of agriculture consumers where such solar systems are to be installed will be made available to the bidders after award of contract.

## **TECHNICAL SPECIFICATIONS**

### **SOLAR PHOTOVOLTAIC MODULES:**

Solar PV modules should be of the crystalline solar Photovoltaic Technology, manufactured in India. Detailed specifications of the solar PV modules are given below:-

	<b>Must have test certificate as per MNRE guide lines and specified in this tender</b>
Origin	Made in India
Efficiency module	$\geq 16\%$
Fill factor	$\geq 70\%$
warranty	Panel output ( $W_p$ ) capacity to be $\geq 90\%$ at the end of 12 years and $\geq 80\%$ of at the end of 25 years.
Module frame	Non-corrosive and electrically compatible with the mounting structure material
Termination box	Thermo-plastic, IP 65, UV resistant
Blocking diodes	Schottky type
Module minimum rated power	The nominal power of a single PV module shall not be less than 300Wp.
Identification tag for each solar module	Shall be provided inside the module and must be able to withstand environmental conditions and last the lifetime of the solar module.
Identification tag data	Name of the manufacturer with logo Month and year of manufacture Model No ( Should consists of the voltage and rate wattage) Module serial number
Power output rating	To be given for standard test conditions (STC). I- V curve of the each module shall be submitted
Compliance with standards and codes	IEC 61215 / IS 14286 IEC 61730 Part 1 and 2
Salt Mist Corrosion Testing	As per IEC 61701

The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power output and overall performance of plant.

The rated output power of any supplied module shall have maximum tolerance of  $\pm 3\%$ .

The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.

**The Modules and Cells should be manufactured in India and should be complied with the prevailing MNRE Approved List of Models and Manufacturers of Solar Photovoltaic Modules and subsequent amendments and clarifications issued until the bid submission deadline, shall be applicable for this Bid. The Successful Bidder must procure Solar PV Modules from MNRE ALMM List as per the UPNEDA office order no 144 dated 08.04.2024.**

**WARRANTIES:**

## a) Material Warranty:

- i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than twenty five (25) years from the date of sale to the original customer.
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials

Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will replace the solar module(s), at the Owners sole option.

PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years

**Test reports/ certificate from IEC/NABL/MNRE accredited laboratory to be mandatorily enclosed for relevant IEC/equivalent BIS Standards.**

**POWER CONDITIONING UNIT (PCU)/INVERTER**

Technical data sheet of the inverter proposed or the project indicating operating modes, protection, efficiency etc. should be provided by the bidder.

**Common Technical Specification:**

Output voltage	1 phase, 240 VAC; 3 phase, 415 VAC Inverter/ PCU should be capable of synchronising with grid voltage between 110% and 80% of the rated output. Beyond this system has to stop generating.
Over Voltage / Under Voltage trip	When Voltages reaches above 110% or below 80% respectively, with clearing time up to two seconds for reconnection.
Frequency	50 Hz. Inverter/ PCU should be capable to synchronise with grid for a variation of frequency between 50.5 Hz and 47.5 Hz. Beyond this system has to stop generating.
Over and Under frequency Trip	High frequency at 50.5 Hz and low frequency at 47.5 Hz clearing time up to 0.2 seconds.
Continuous rating	Rated capacity of the configuration.
Nominal Power	Rated power should not be less than the rated capacity of the SPV array at STC.
Communication capability	Should have RS 485 Communication mode so as to integrate with Remote Monitoring System.
Standard conformation	IS16221(Part 1,2)

	IS16169:2014 (Procedure for Islanding prevention measures for Utility Connected PV Inverters)
Total Harmonic Distortion	Less than 5%
Operating temperature Range	-50 to 600 C
Housing cabinet	PCU to be housed in suitable switch cabinet, Within IP 21 (Indoor)/ IP 54 (Outdoor)
Efficiency	95% and above at full load.
Power Control	MPPT
Harmonic Current Injections	Shall not exceed the limits specified in IEEE519
Direct Current Injection	Less than 0.5 % of the full rated output at the interconnection point.
Flicker	Should be within the limits specified in IEC 61000
Synchronisation	Automatic (Built into the inverter)
Hysteresis required for reenergizing	Sixty seconds at stabilized condition.
Power Factor	The PCU power factor at the point of distribution Licensee service connection shall be 0.95 lagging or leading when operating at above 25 percent of the rated output.
Maximum time for cease to Energise in the case of formation of an unintended Island	2 Seconds

The PCU shall not produce Electromagnetic interference (EMI) which may cause malfunctioning of electronic and electrical instruments including communication equipment, which are located within the facility in which the PCU is housed.

The PCU shall have an appropriate display on the front panel to display the instantaneous AC power output and the DC voltage, current and power input. Each of these measurement displays shall have an accuracy of 1 percent of full scale or better. The display shall be visible from outside the PCU enclosure. Operational status of the PCU, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front of the PCU enclosure.

The PCU shall include an easily accessible emergency OFF button located at an appropriate position on the unit.

The PCU shall include ground lugs for equipment and PV array grounding

All exposed surfaces of ferrous parts shall be thoroughly cleaned, primed, and painted or otherwise suitably protected to survive a nominal 30 years' design life of the unit.

The PCU enclosure shall be weather proof and capable of surviving climatic changes and should keep the PCU intact under all conditions in the room where it will be housed. The inverter shall be located indoor and should be either wall/ pad mounted. Moisture condensation and entry of rodents and insects shall be prevented in the PCC enclosure.

Components and circuit boards mounted inside the enclosures shall be clearly identified with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.

Maximum Power Point Tracker (MPPT) - MPPT shall be integrated in the PCU to maximize the energy drawn from the array. The MPPT should be microprocessor based to minimize the power losses.

### **SOLAR PUMP CONTROLLER WITH MPPT AND VARIABLE FREQUENCY DRIVE (VFD)**

**Bidders have to supply VFD with the system. It is to be supplied along with ON grid inverter. Bidder has to ensure that the solar AC Pump will also run during the absence of the grid power.**

VFD should work in off-grid condition and should not depend on the grid power and can operate load independently.

<b>HP Rating</b>	-	3 HP - 10 HP
<b>MPPT Efficiency</b>	-	>96%
<b>Maximum Power Voltage (Vmp)</b>	-	160 V – 800 VDC
<b>Output</b>	-	<b>240 VAC</b> -1 Phase (For 3 HP) <b>415 VAC</b> -3 Phase (For 3 HP, 5 HP, 7.5 HP & 10 HP)
<b>Working Temperature</b>	-	10° C – 70° C
<b>Cooling Fan</b>	-	12 VDC 0.35 amp, start at 70° C and stops at 60° C
<b>Display Information</b>	-	<ul style="list-style-type: none"> <li>● Total KWH</li> <li>● Panel volt</li> <li>● Panel Current</li> <li>● Power</li> <li>● Frequency</li> <li>● AC Voltage.</li> </ul>
<b>Remote Monitoring System</b>		Remote Monitoring System through GSM
<b>Starting Current</b>	-	1.5 times motor full-load current till pump rotates slowly and picks up to the maximum RPM.
<b>Working Duration</b>	-	7 – 8 Hours in a day depending upon sunlight.
<b>Pump Type</b>	-	No specific design, any type of new and old pumps can be used (specifically induction motors)
<b>Protections</b>	-	<ul style="list-style-type: none"> <li><b>a)</b> Dry run protection</li> <li><b>b)</b> Reverse polarity protection</li> <li><b>c)</b> Open circuit and short circuit protection</li> <li><b>d)</b> Higher temperature protection</li> <li><b>e)</b> Over voltage and under voltage protection</li> <li><b>f)</b> Overload protection</li> </ul>

<b>Physical</b>	-	Cable Entry: Bottom
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GENERAL SPECIFICATIONS –

- a) Transformer less design and compact in size
- b) DSP based intelligent Maximum Power Point Tracking (MPPT)
- c) Equipped with remote monitoring facility & Remote accessibility for On/Off possible with mobile phone
- d) LCD Display for easy viewing
- e) Multiple built-in protections
- f) VF drive shall give constant torque for wide range of intensity of sunlight - morning till evening. Water to be continuously pumped from morning till evening.
- g) IGBT based power stage
- h) PWM frequency, Pure sine wave three phase current to motor
- i) Remote Monitoring System: Remote Monitoring System through GSM

TERMINATIONS:

Input Terminal : Solar PV input supply is given to the Solar Pump Controller system from this terminal strip it has + ve & - ve terminals.

Output Terminal : When Solar Pump Controller is ON 240 VAC-1 Phase (For 3 HP) 415 VAC-3 Phase (For 3 , 7.5 HP & 10 HP) voltage is given to motor from RYB terminal.

AUTO CHANGEOVER CONTROLLER

A Relay Contactor based controller shall be provided by the successful bidder. The Bidder shall be responsible for the providing an Auto changeover. The auto changeover of the Solar PV system will allow the system to work from **ON-Grid to Off-Grid and vice-versa**.

In case the Grid is available, the auto change over switch will connect the system to the Grid Tied inverter and thus allow the system to generate the power and excess power shall be fed into the grid. The Solar DC Power being generated will first cater to the Solar Pump requirement and excess power, if any, shall be exported to the Grid through net metering.

In case of absence of the grid power, the auto changeover switch will connect the system to the solar voltage frequency drive (VFD) and thus allow the system to shift on the VFD and it will work on the off-grid mode.

Both relay based and contactor logic shall be allowed.

The Auto-changeover shall be connected with the RMS supplied with the system. It should be operable from the remote server.

Auto-changeover box shall be IP 65 and shall be corrosion free. All the contacts shall be copper material only. Bidder will ensure use of bimetallic strips/lugs when aluminum cables are connected.

## **ELECTRICAL SAFETY, EARTHING AND PROTECTION**

Internal Faults: In built protection for internal faults including excess temperature, commutation failure, over load and cooling fan failure (if fitted) is obligatory.

Over Voltage Protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients.

Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system.

## **CABLING PRACTICE**

Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contact. The PVC Cu cables must be run in GL trays with covers for protection.

## **FACTORY TESTING**

PCU shall be tested prior to shipment and factory test certificate for relevant parameters should be provided with the PCU supplied. UPNEDA or authorised representative of UPNEDA may be allowed to witness the tests if required.

Factory testing shall not only be limited to measurement of phase currents, efficiencies, harmonic content and power factor, but shall also include all other necessary tests/simulation required and requested by the Purchasers Engineers. Tests may be performed at 25, 50, 75 and 100 percent of the rated nominal power.

## **PLANT METERING/ DATA LOGGING**

Net meter as per CEA standards approved by the utility as per accuracy class has to be supplied and installed.

A separate Energy Meter shall be provided at the output of PCU to record the energy generation from the solar system. (This energy meter should not be integrated with PCU). This has to calibrate and installed nearer to the Consumer meter board so that meter reader from Electrical utility could access while.

All major parameters should be available on the digital bus and logging facility for energy auditing through the internal microprocessor and can be read on the digital front panel at any time the current values, previous values for up to a month and the average values.

## **MNRE SPECIFICATION OF REMOTE MONITORING SYSTEM**

State Implementing Agency (SIA) will have a common SWPS (Solar Water Pumping System) Management platform for monitoring of operation and performance of SWPS installed under PM KUSUM Scheme.

Remote Monitoring System (RMS) of SWPS should have following minimum features or modules:

- a) Solar System Performance: DC Voltage, DC current, AC output Current, Power, Drive frequency, Energy, etc.
- b) Pump Performance: Running Hours, Water Discharge (Output), etc
- c) RMS Performance: %Device Connectivity, %Data Availability, etc.

- d) Geo Location: Real time latitude and longitude should be captured. This is required to ensure that system is not moved from its original location.
- e) Events and Notifications: Faults related to Pump Operation, Solar generation, Controller/Drive faults like overload, dry run, short circuit, etc.
- f) Consumer Management: Name, Agriculture details, Service No. Contact Details, etc.
- g) Asset Management: Ratings, Serial Number, Make, Model Number of Pump, Panel and Controller, Geo Location, IMEI number (of communication module) and ICCID (of SIM).
- h) Complaint and Ticket Management: Complaint management system is a part of centralized monitoring software platform State Level Solar Energy Management Platform to be operated and maintained by the State implementing agency (SIA).
- i) Consumer Mobile Application: Generation, Running Hours, Water Discharge, Complaint logging, etc.

RMS provided by all bidder's should connect to State Level Solar Energy Data Management platform, which will have interface with National Level Solar Energy Data Management platform i.e. SIA will provide server infrastructure as well as software. SIA will maintain the same. 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. Communication Architecture should be as per following:

#### Communication Connectivity:

- i. Pump Controller Connectivity: Communication between RMS and Pump Controller should be on UART/RS485/RS232 MODBUS RTU protocol to ensure interoperability irrespective of make and manufacturer
- ii. Remote Connectivity: RMS of SWPS should be using GSM/GPRS/2G/3G/4G cellular connectivity
- iii. Local Connectivity: Ethernet/Bluetooth/Wi-Fi connectivity to configure parameters, notifications, communication interval, set points etc. or to retrieve locally stored data.
- iv. Sensor Connectivity: RMS should have provision for at least two Analog/Digital inputs with 0.1% accuracy to address the requirement of local sensors connectivity if required by SIA/Consumer for applications such as irradiation, flow meter for water discharge, moisture sensor for micro irrigation, etc. Analog/digital sensor inputs will be required for integration of flow meter for water discharge, moisture sensor for micro irrigation, level sensor for overhead tank water storage etc. Only provision for Analog/digital inputs with 0.1% accuracy of Full Scale Range is required. Sensors will not be in scope of bidder.
- v. RMS should have provision to give remote On/Off command to pump through farmer mobile app. to save ground water.

#### b) Communication Modes:

- i. Push Data on Event/Notification: such as pump on, pump off, protection operated, etc.
- ii. Push Data Periodically: important parameters of solar pump (as mentioned above) should be pushed to central server on configurable interval. Interval should be configurable for 15 mins. However, if required, it should be possible to configure the periodic interval in multiple of 1



minute starting from 1 minute and up to 15 minutes. Further, in case of any abnormalities or event, RMS should push on event immediately.

iii. Command On Demand : It should be possible to send commands via GSM or GPRS to RMS either to control pump operations or to update configuration

c) Communication Protocol: RMS should provide data on MQTT protocol to establish communication with thousands of systems.

d) Security: i. Communication between RMS and Server should be secured and encrypted using TLS/SSL/X.509 certificate etc.

ii. As a part of IoT protocol, Authentication and Authorization should be implemented using token/password mechanism.

e) Message Format: RMS should provide data in a JSON message format as required by respective SNA.

f) Data Storage: In case of unavailability of cellular network, RMS should store data locally and on availability of network it should push data to central Server. Local data storage should be possible for at least one year in case of unavailability of cellular network.

g) Configuration update over the Air of multiple parameters such as IP, APN, Data logging Interval, Set Points etc. is essential. Software updating should be possible with 2G and even without the presence of SD card. Software updating process and/or failure to update software shouldn't disrupt pumping operations

### **Remote ON/OFF feature**

There shall be a Remote ON/OFF Feature of pump integrated with system.

Necessary switch gear as well as communication structures should be done by the bidder so as the user can switch off/on the pump remotely.

The remote working system should be integrated with RMS.

**All solar Agriculture pumps/systems 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. The remote monitoring system may consist of smart meters, communication hardware/ IoT devices, software interface, web and mobile application and internet connection.**

### **ARRAY SUPPORT STRUCTURE.**

Specification of module mounting structure shall be in line with specifications for SPV water pumping systems of MNRE vide Circular No. F. No. 41/3/2018-SPV Division dated 17.7.2019 and any further amendment(s) issued by MNRE.

Supply, installation, erection and acceptance of module mounting structure (MMS) with all necessary accessories, auxiliaries and spare part shall be in the scope of the Contractor.

The PV modules shall be mounted on fixed metallic structures having adequate strength and appropriate design, which can withstand the load of the modules and high wind velocities as per the wind zone and IS of the location of installation.

The MMS shall be designed and constructed such that it complies with the necessary mounting requirements of PV modules in order to maintain the PV module's warranty.

MMS and its foundation shall be designed considering life span of 25 years and withstand wind speeds of 200 kmph.

Design of the MMS shall take into consideration site conditions, soil report, loading data, wind data and design standards as per latest applicable IS standard.

The structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation and tilt, absorb and transfer the mechanical loads to the ground properly.

The Contractor shall be fully responsible for any damages caused by high wind velocity within guarantee period. The parameters of prevailing wind speed, soil conditions, load, and upward lift shall be taken care of while preparing the design and the same is required to be mentioned on design.

MMS shall be made of hot dip Galvanized steel per ASTM A123. Minimum thickness of HDGI zinc coating shall be 80 microns at any point when measured. No averaging is allowed in the measurement of coating thickness. Necessary testing provision for MMS to be made available by Contractor at site.

All bolts, nuts, panel mounting clamps fasteners shall be of stainless steel of grade SS304 and must sustain the adverse climatic conditions.

MMS shall be designed and positioned such that the PV modules are completely shadow-free solar during generation hours.

All solar panels shall be easily accessible for cleaning and the beneficiaries shall not be inclined to climb on the MMS or PV modules for cleaning the PV modules.

Junction boxes shall be mounted on the MMS such that they are easily accessible and are protected from direct sunlight and harsh weather.

Civil foundation design for MMS shall be made in accordance with the IS and prevailing soil conditions with the help of Chartered Structural Designer having substantial experience in similar work.

All the cables shall be aesthetically tied to module mounting structure

Cutting, Welding, drilling etc. at site is not allowed for MMS. Contractor shall carry out all correction in structure (if required) at his works. If any cutting, welding, drilling is required to be done after material arrived at site then material shall be again sent for hot dip galvanization. No zinc spray shall be allowed on the MMS.

Contractor shall submit the all the quality test documents and test certificates complying with the requirement of the structure.

Contractor shall submit detailed drawings of the MMS and its civil foundations, results of design computations and stability calculations for foundations, and structural fitness of PV module mounting structures as per STADD Pro analysis. Such details shall include, but not limited to, the following;

- a) Determination of true south at the site
- b) Array tilt angle to the horizontal, with permitted tolerance
- c) Details with drawings for fixing the modules
- d) Details with drawings for fixing the junction/ terminal boxes
- e) Interconnection details inside the junction/ terminal boxes
- f) Structure installation details and drawings
- g) Electrical grounding (earthing as per BIS specifications) and surge protections.
- h) Inter-panel/ inter-row distances with allowed tolerances; and
- i) Lightning protection for PV array.
- j) Safety precautions to be taken

Structures shall be supplied complete with all members to be compatible for allowing easy installation at the site. Additional Structures/Frames for required for the installation of modules if any need to be provided by the bidder.

The structures shall be designed to allow easy replacement of any module.

Each structure shall have a provision to adjust its angle of inclination to the horizontal as per the site conditions. Solar module should be inclined towards south direction and the module mounting structures should have angle of inclination as per the site conditions to take maximum insolation and complete shadow-free operation during generation hours. However, to accommodate more capacity the angle of inclination may be reduced until the plant meets the specified performance ratio requirements.

#### **SURGE PROTECTION AND EARTHING**

The system should have installed with Surge Protection Device (SPD) for higher withstand of the continuous PV-DC voltage during earth fault condition. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC in-built bypass fuse (parallel) which should get tripped driving failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards. The SPD should be provided in the AC Distribution Box as well.

Earthing for PV Array:

The PV module, BOS and other components of power plants require adequate Earthing for protecting against any serious fault.

- The Earthing for array and LT power shall be made as per the provisions of IS:3043.

- Necessary provision shall be made for bolted isolating joints of each Earthing pit for periodic checking of earth resistance.
- Each String/Array and MMS of the plant shall be grounded properly. The array structure has to be connected to earth pit as per IS standards. Necessary provisions shall be made for bolted isolating joints of each earthing pit for periodic checking or earth resistance.
- The complete earthing system shall be mechanically & electrically connected to provide independent return to earth.
- For each earth pit, a necessary test point shall be provided.
- The bidder shall submit the detailed specification for the Earthing arrangements.

### **LIGHTNING PROTECTION FOR PV ARRAY**

The SPV power plant should be provided with lightning and over voltage protection. The source of over voltage can be lightning or other atmospheric disturbance. The lightning conductors shall be made as per applicable Indian Standards in order to protect the entire array yard from lightning stroke. The design and specification shall conform to IS/IEC 62305, "Protection against lightning" govern all lightning protection-related practices of a PV system.

The entire space occupying SPV array shall be suitably protected against lightning by deploying required number of lightning arresters. Lightning protection should be provided as per IS/ IEC 62305.

Lightning system shall comprise of air terminations, down conductors, test links, earth electrode etc. as per approved drawings.

The protection against induced high voltages shall be provided by the use of surge protection devices (SPDs) and the earthing terminal of the SPD shall be connected to the earth through the earthing system.

The EPC Contractor / Company shall submit the drawings and detailed specifications of the PV array lightning protection equipment to Employer for approval before installation of system.

### **AC DISTRIBUTION PANEL BOARD**

AC Distribution Panel Board (DPB) shall control the AC power from inverter and should have necessary surge arrestors.

An ACDB panel shall be provided in between PCU and Utility grid. It shall have MCB/MCCB/ACB or circuit breaker of suitable rating for connection and disconnection of PCU from grid.

The connection between ACDB and Utility grid shall be of standard cable/ Conductor with suitable termination. It shall have provision to measure grid voltage, current and power.

The ACDB incomer shall be four (4) pole MCCB with thermal over current and earth fault releases. The incomer shall be selected at required rating.

### **DC DISTRIBUTION BOARD**

DC bus/ cable which can handle the current and the voltage of inverter output safely with necessary surge arrester as per the relevant IS standards.

DC panel should be equipped with an adequate capacity indoor DC circuit breaker along with control circuit, protection relays, fuses, annunciations and remote operating and controlling facility from the main control facility.

DCDB shall have sheet from enclosure of dust and vermin proof, the busbar/ cables are to be made of copper of desired size. DCDB shall be fabricated to comply with IP 65 protection.

### **SWITCHES AND GENERAL REQUIREMENTS**

Switches/ circuit breakers/ connectors meeting general requirements and safety measurements as per IS 60947 Part I, II, III and EN 50521 for AC/DC.

Junction boxes, enclosures for inverters/ charge controllers and meters shall meet IP 54 (for outdoor)/ IP 21 (for indoor) as per IEC 529.

### **AC/DC WIRING**

Cabling is required for wiring from AC output of inverter/PCU to the Grid Interconnection point. It includes the DC cabling from Solar Array to AJB and from AJB to inverter input.

All cables of appropriate size to be used in the system shall have the following characteristic:

- a. Shall conform to IEC 60227 / IS 694 & IEC 60502 / IS 1554 standards.
- b. Temperature Range: -10 degree Celsius to +80 degree Celsius
- c. Voltage rating: 660/1000V
- d. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- e. Flexible

Sizes of cables between any array interconnections, array to junction boxes, junction boxes to inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum (2%).

The length of exceeding 50 m of AC cable from Inverter to ACDB and to the Grid connection point shall be borne by the customer.

For the DC cabling, XLPE or XLPO insulated and sheathed, UV stabilized single core flexible copper cables shall be used; Multi-core cables shall not be used.

For the AC cabling, PVC or XLPE insulated and PVC sheathed single or, multi-core flexible copper cables shall be used. However, for above 25kW systems, XLPE insulated Aluminum cable of suitable area of cross section can be used in the AC side subject to a minimum area of cross section of 10 sq.mm. Outdoor AC cables shall have a UV -stabilized outer sheath IS/IEC 69947.

All LT XLPE cables shall conform to IS:7098 part I&II.

The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0% .

The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%

The DC cables from the SPV module array shall run through a UV stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm

Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers.

All cables and conduit pipes shall be clamped with thermo-plastic clamps at intervals not exceeding 50cm; the minimum DC cables size shall be 4.0mm<sup>2</sup> copper; the minimum AC cable size shall be 4.0mm<sup>2</sup> copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.

**Cable Marking:** All cable/wires are to be marked in proper manner by good quality ferule or by other means so that the cable can be easily identified. The following color code shall be used for cable wires a) DC positive: red (the outer PVC sheath can be black with a red line marking DC negative: black c) AC single phase: Phase: red; Neutral: black d) AC three phase: phases: red, yellow, blue; neutral: black e) Earth wires: green

Cables and conduits that have to pass through walls or ceilings shall be taken through PVC pipe sleeve

Cable conductors shall be terminated with tinned copper end ferrules to prevent fraying and breaking of individual wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instructions of the manufacturer, which in most cases will include the use of special connectors.

All cables and connectors used for installation of solar field must be of solar grade which can withstand harsh environment conditions including high temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes' for 25 years and voltages as per latest IEC standards. DC cables used from solar modules to array junction box shall solar grade copper (Cu) with XLPO insulation and rated for 1.1 kV as per relevant standards only.

Bending radii for cables shall be as per manufactures recommendations and IS: 1255.

For laying/termination of cables latest BIS/IEC Codes/ standards shall be followed.

## **NET METERING AND UTILITY INTERCONNECTION**

### **Net-Meter**

UPERC RSPV Regulation 2019 has kept provision of net-metering for agriculture consumers. Contractor going for installation of SPV Power units under this scheme will also be governed by the rules & regulations of Net Metering scheme as notified by UPERC and amended time to time.

Net metering is the concept which records difference between exports of generated energy and import of energy from Discom grid during billing cycle.

The Contractor shall bear the entire cost of metering arrangement (including meter testing-fee) and its accessories. The Contractor will procure the net meter and get it standardized and tested from the UPPCL accredited Lab. The fee and other charges, if applicable, such as security deposit

payable to office of UPNEDA/Discom & Electrical inspector will be payable by the successful bidder separately prior to the system installation.

The installation of meters including CTs & PTs, wherever applicable, shall be carried out by the supplier as per the procedures in line with Discom(s) guidelines and with their permission.

Old meter of the existing Agriculture consumer shall be replaced by the Contractor after issue of Meter Change Order by concerned incharge of Discom on the same day of installation of net-meter. The old meter is to be deposited by the Contractor on behalf of UPNEDA in the concerned Office of Discom.

Net-meter shall be installed in the presence of the Contractor, DISCOM representative, the Agriculture Consumer, concerned Nodal Officer jointly with preparation of "Joint Inspection Report"(JIR) in prescribed format.

In this case the agriculture pump will be continue to run at rated capacity taking power from solar panel and balance power from grid , if required and incase solar power generation is higher than the required by the pump, the additional solar power would be fed to the grid. Farmer would be able to import and export to the grid as the UPERC Regulation and its amendment.

### **Caution Signs**

In addition to the standard caution and danger boards or labels as per Indian Electricity Rules, the AC distribution box near the solar grid inverter and the distribution board to which the AC output of the solar PV system is connected shall be provided with a noncorrosive caution label with the following text: WARNING DUAL POWER SOURCE SECOND SOURCE IS SOLAR SYSTEM.

The size of the caution label shall be 105mm (width) x 20mm (height) with white letters on a red background.

### **Sign Boards**

The sign board containing brief description of various components of the power plant as well as the complete power plant in general shall be installed at appropriate location near the PV system.

The Signboard shall be made of MS angle or pipe for vertical post with ACP (Aluminium Composite Panel) sheet of not less than 3 mm. The Contractor shall provide detailed specifications of the sign boards as per requirement of the UPNEDA/Discom.

Name Plate: Name Plate in Hindi language of size 600 mm x 600 mm x 2 mm on iron plate is required to be prepared (format shall be provided by UPNEDA after award of contract) separately and required to be fixed on the system for every installation.

### **Drawings & Manuals**

Two sets of engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidder shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the PV Installation setup and power evacuation, synchronization along with protection equipment.

The Contractor shall furnish the following drawings (in line with MNRE specifications) after PO and obtain approval:

- (a) General arrangement and dimensioned layout.
- (b) Schematic drawing showing the requirement of PV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- (c) Routing diagram of cables and wires.
- (d) Data sheets and user manuals of the solar PV panels and the solar grid inverter.
- (e) Structural drawing along with foundation details for the structure.
- (f) Itemized bill of material for complete SV plant covering all the components and associated accessories.
- (g) Layout of solar Power Array
- (h) Shadow analysis of the site
- (i) Maintenance register.

Approved ISI and reputed makes for equipment be used

For complete electromechanical works, Contractor shall supply complete design, details and drawings for approval to UPNEDA, DISCOM and TPIA before progressing with the installation work.

### **Planning & Designing**

UPNEDA reserves the right to modify the layout and specification of sub- systems and components at any stage as per local site conditions/requirements.

The Contractor shall submit preliminary drawing for approval and based on any modification or recommendation, if any. The Contractor shall submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

### **Safety Measures**

The Contractor shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines, as well as applicable rules & regulations of Rajasthan State, etc.

### **Maintenance & Generation Guarantee**

#### **Comprehensive Maintenance (CMC)**

- a) The Contractor shall undertake comprehensive maintenance of the PV system including all its equipment and subsystems for a period of 5 (five) years from the date of commissioning of the last system of total awarded work.
- b) This shall also include free replacement warranty on spare parts against manufacturing defects for five years from the date installation.
- c) The Contractor shall attend to any complaint from the Agriculture Consumer and rectify any faults or breakdown within a timeframe of 72 (seventy two) hours from such complaint. In case of theft, the complaint is to be resolved within 15 calendar days provided theft is duly certified by the nodal officer. The loss in generation shall be decided on daily basis.
- d) CMC will include submission of monthly /quarterly inspection report of the installation as per prescribed format of UPNEDA & DISCOM. Quarterly report as per UPNEDA



- format shall be prepared and submitted to UPNEDA after providing necessary services.
- e) To ensure timely maintenance of the systems the vendor shall have one Office-cum-service center in each operational district and a helpline in local language in each operational State.
  - f) UPNEDA/Discom gives great importance to maintenance of the systems & it is felt that without proper maintenance after installation of system, consumers may be deprived of the benefits of this Scheme. To achieve this objective, Contractor shall proceed to first establish office-cum-service center in each operational district for installation of systems. Contractor shall be bound to provide after sales service to the beneficiaries in the vicinity of the area of the installed systems or at least at tehsil level /at district to facilitate CMC services. The beneficiaries shall be well informed about the CMC center of the Contractor, call center/toll free numbers. This may consist of office cum service center at a convenient place to be reached by a beneficiary. Such office cum service centers shall have spares for the system and repair facility. The UPNEDA & Concerned Nodal officer of Discom shall verify this fact and only then Contractor shall be allowed to install the systems.
  - g) The Contractor will educate the Beneficiaries on the process for registering the complaints on Call Center/toll free nos. The details of office cum after sales service centers along with telephone numbers & contact persons of firm & details of UPNEDA & Discom offices, address and telephone numbers must be provided to each beneficiary. Beneficiaries shall also be educated through brochures about dos & don'ts on the system. Contractor will update the status of fault rectification to UPNEDA /call center for online monitoring of the complaints registered and services being provided by the Contractor.
  - h) It may be carefully noted that maintenance of SPV Systems includes maintenance of all items including all accessories.

### **Project Management**

#### **Testing and Third-Party Inspection**

- a) The Contractor shall provide all relevant plant and equipment specifications, data sheets, certificates, designs, drawings, etc. to the UPNEDA, Discom and TPIA for approval prior to commencement of installation. Structural designs shall be provided to the TPIA & UPNEDA in STAAD Pro format for verification and approval.
- b) The UPNEDA /Discom and the TPIA shall have , at all times, access to the Contractor's premises and also shall have the power to inspect and examine the materials and workmanship of project work during its manufacturing, shop assembly and testing. If part of the equipment is required to be manufactured in the premises other than the Contractor on behalf of the UPNEDA, Discom and the TPIA.
- c) The UPNEDA, Discom and the TPIA shall have the right to serve notice in writing to the Contractor on any grounds of objections, which they may have in respect of the work. The Contractor shall have to satisfy the objection, otherwise, the UPNEDA, Discom at its liberty may reject any or all components of equipment or workmanship connected with such work.
- d) The Contractor shall issue request letter to UPNEDA for testing of any component of the plant, which is ready for testing at least 15 (fifteen) days in advance from the date of actual date of testing at the premises of the Contractor or elsewhere. When the inspection and the tests have been satisfactorily completed at the Contractor's works.

UPNEDA/Discom or the TPIA shall issue a certificate to that effect. However, UPNEDA at its own discretion may waive the inspection and testing in writing. In such case, the Contractor may proceed with the tests which shall be deemed to have been made in the UPNEDA & Discom or the TPIA's presence, and it shall forth with forward 6(Six)sets of duly certified copies of test results and certificates to the UPNEDA, Discom and theTPIA for approval of UPNEDA, Discom. The Contractor, on receipt of written acceptance from UPNEDA, may dispatch the equipment for erection and installation.

- e) For all tests to be carried out, whether in the premises of the Contractor or any subcontractor or the supplier, the Contractor shall provide labour, materials, electricity, fuel, water, stores, apparatus and instruments etc. free of charge as may reasonably be demanded to carry out such tests of the equipment. The Contract or shall provide all facilities to UPNEDA, Discom and the TPIA to accomplish such testing.
- f) The UPNEDA, Discom or the TPIA shall have the right to carry out inward inspection of the items on delivery at the Site and if the items have been found to be not in line with the approved specifications, shall have the liberty to reject the same.
- g) Neither the waiving of inspection nor acceptance after inspection by the UPNEDA & DISCOM or the TPIA shall, in anyway, absolve the Contractor of the responsibility of supplying the equipment strictly in accordance with requisite standards and specifications.
- h) UPNEDA and Discom and/ or the TPIA shall undertake final commissioning test of the PVsystem including its design, specification, safety and performance.

#### **Other Key Responsibilities**

#### **MNRE/UPNEDA Discom Inspection & Reporting**

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 AMC, the Ministry reserves the right to blacklist the Contractor. Blacklisting may inter-alia include the following:

- (a) The Contractor will not be eligible to participate in tenders for Government supported projects.
- (b) In case, the concerned Director(s) of the Contractor joins another existing or starts/joins a new firm/company, the company will automatically be blacklisted.
- b) The Contractor shall be responsible for providing daily/weekly/monthly or customized information regarding progress of projects required by UPNEDA/Discom /MNRE, online or in hard copy. For which the Contractor is also responsible for maintaining online & off-line records.
- c) Assist Discom & UPNEDA with a real-time monitoring dedicated web-portal.
- d) Providing training to the locals.

## Standards and Limits

Following specifications shall be applicable for the activities related to meters and grid interconnection.

### Standards and Limits

PARAMETER	REFERENCE	REQUIREMENT
<b>Service conditions</b>	Relevant regulation/order by Uttar Pradesh Electricity Regulatory Commission	Compliance
<b>Overall Grid Standards</b>	Central Electricity Authority (Grid Standard) regulations 2010	Compliance
<b>Equipment</b>	BIS / IEEE / IEC	Compliance
<b>Meters</b>	Central Electricity Authority (Installation and Operation of Meters) Regulation 2013 & relevant regulations by Uttar Pradesh Electricity Regulatory Commission	Compliance
<b>Safety and Supply</b>	Central Electricity Authority (Measures of Safety and Electricity Supply) Regulation 2010	Compliance
<b>Harmonic Current</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519
<b>Synchronization</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Photovoltaic system must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/-5% at point of connection.
<b>Voltage</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 second, the photovoltaic system must isolate itself from the grid.
<b>Flicker</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Operation of Photovoltaic system should not cause voltage flicker in excess of the limits stated in IEC 61000 standards or other equivalent Indian standards, if any.
<b>Frequency</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), There should be over and under frequency trip functions with a clearing time of 0.2

		seconds
<b>DC injection</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point under any operating conditions
<b>Power Factor</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.
<b>Islanding and Disconnection</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	The photovoltaic system in the event of fault, voltage or frequency variations must island / disconnect itself within IEC standard on stipulated period
<b>Overload and Overheat</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored
<b>Paralleling Device</b>	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	Paralleling device of photovoltaic system shall be capable of withstanding 220% of the normal voltage at the interconnection point.

## QUALITY CERTIFICATION, STANDARDS AND TESTING FOR GRID-CONNECTED SOLAR PV SYSTEMS/POWER PLANTS

Quality certification and standards for grid-connected solar PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected solar PV system/ plant must conform to the relevant standards and certifications given below:

<b>Solar PV Modules/Panels</b>	
IEC 61215/IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853-Part 1/IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating:- Irradiance and temperature performance measurements and power rating.
IEC 62716	Photovoltaic (PV) modules Ammonia (NH <sub>3</sub> ) Corrosion Testing, (As per site condition like dairies, toilets)
IEC 61730-1,2	Photovoltaic (PV) module Safety Qualification- Part 1: Requirements for Construction Part 2:- Requirements for Testing

<b>Solar PV Inverters</b>	
IEC 62109-1, IEC 62109-2	Safety of power converters for use in photovoltaic power systems Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
IEC/IS61683	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%,25%, 50%, 75% & 90-100% Loading Conditions)
IEC 62116/ UL 1741/ IEEE 1547 (as applicable)	Utility-interconnected Photovoltaic Inverters – Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment Part 27: Product safety requirements
IEC 60068-2 / IEC 62093 (as applicable)	Environmental Testing of PV System – Power Conditioners and Inverters
<b>Fuses</b>	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): Low-voltage Switchgear and Control

## WARRANTY AND MAINTENANCE

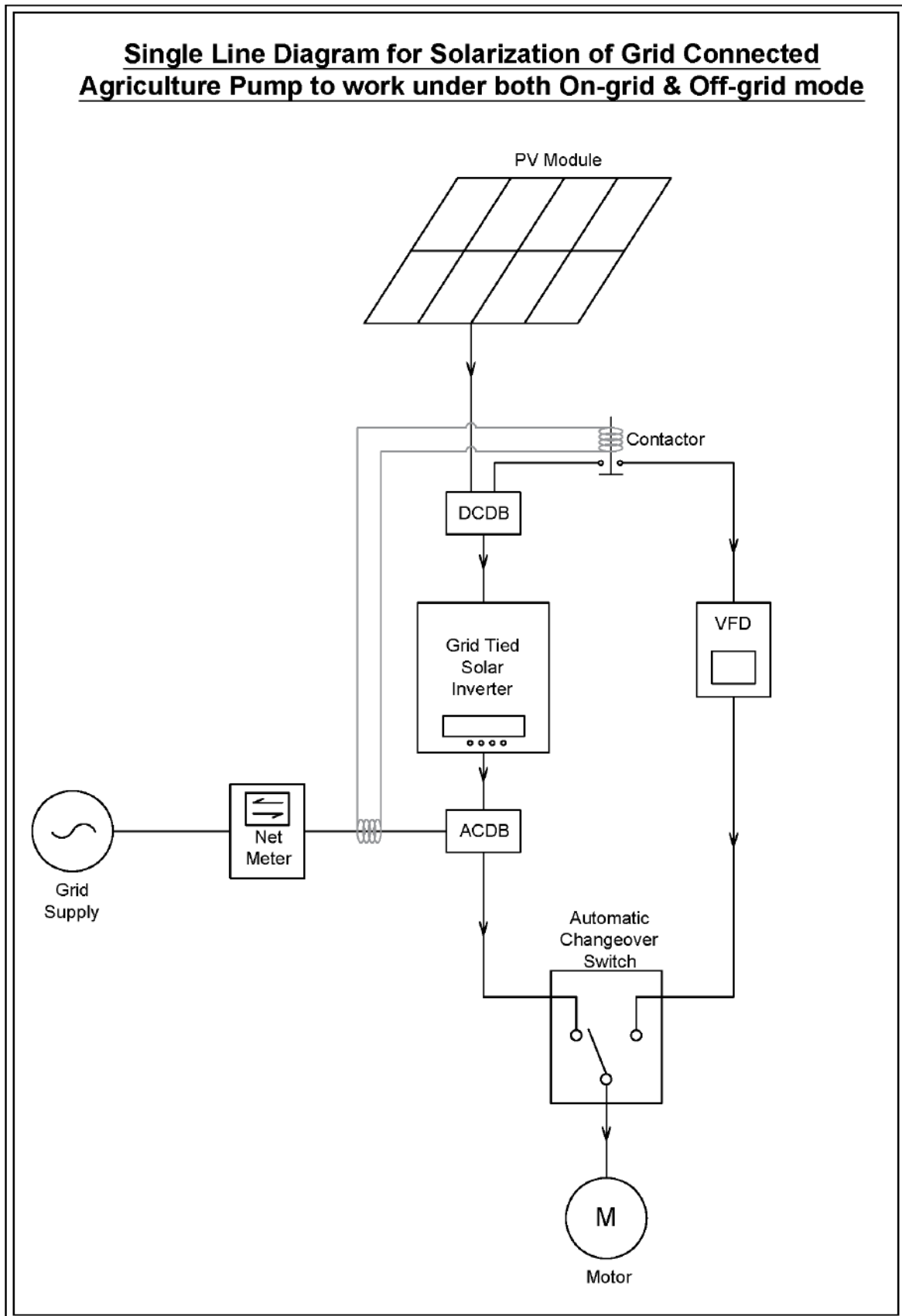
1. The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 12 years and 80% at the end of 25 years).
2. The mechanical structures, electrical components including evacuation infrastructure and overall workmanship of the solar plant system must be warranted for a minimum of 5years from the date of commissioning and handing over of the system.
3. The Comprehensive Maintenance (within warranty period) may be executed by the firm themselves or through the service center of the firm in the concerned district/Division.
4. The contractor/ bidder shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become dysfunctional within 7 days of issue of any such complaint by the purchaser.

5. The service personnel of the Successful Bidder will make routine quarterly maintenance visits. The maintenance shall include thorough testing & replacement of any damaged parts Apart from the any complaint registered/ service calls received / faults notified in the report generated by the IVRS should be attended to and the system should be repaired/ restored/ replaced within 7 days.

6. Normal and preventive maintenance of the systems will also be the duties of the deputed personnel during quarterly maintenance visits.

7. During operation and maintenance period of the systems, if there is any loss or damage of any component due to miss management/miss handling or due to any other reasons pertaining to the deputed personnel, what-so-ever, the supplier shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component.

**Single Line Diagram for Solarization of Grid Connected Agriculture Pump to work under both On-grid & Off-grid mode**



**11 Forms – Part I: Technical**  
**11.1 Form A: Covering Letter**

FROM :-(Full name and address of the Bidder)

.....  
.....

To:

The Director,  
Uttar Pradesh New and Renewable Energy  
Development Agency (UPNEDA)  
Vibhuti Khand, Gomti Nagar,  
Lucknow- 226010, U. P.

**Subject:** - Offer in response to Bid No: 01//UPNEDA-PM KUSUM-C1/GCPS/2024-2025  
Dated 29.08.2024

Sir,

We hereby submit our offer in full compliance with terms & conditions of the above Bid without any deviations.

We confirm that, we have the capability to supply, install and carryout 5 years Comprehensive warranty & maintenance of Grid Connected Solar PV Systems under KUSUM Component C-1 Scheme at various districts of Uttar Pradesh.

We are fully agreed with Terms & Conditions, Technical Specifications, and Warranty with 5 years of comprehensive maintenance and Payments Conditions etc laid down in this bid document.

In line with the requirement of the Bid Documents, we have uploaded the following documents to the Bid Form:

- a. **Form A:** Covering Letter
- b. **Form B:** General Particulars of the Bidder
- c. **Form C:** Checklist
- d. **Proof D:** Proof of payment or demand draft for cost of payment of the tender document.
- e. **Form E:** Earnest Money Deposit to be submitted as DD or BG from any nationalized or scheduled bank in the specified format
- f. **Form F:** Bidder documentary evidence in support of the Pre-Bid Eligibility Criteria
- g. **Form G:** Schedule of Experience (Supply & Installation)



- h. **Form H:** Declaration on Notarized Affidavit that the information provided by the Bidder is true to the best of its knowledge, specifically pertaining to the experience furnished & conflict check
- i. **Form I:** Format of Performance Bank Guarantee (PBG)
- j. **Form J:** Format for bid security declaration
- k. **Form K:** Format for power of attorney
- l. **Form L:** Format for Joint Commissioning and Handing over certificate /Warrantee Card.
- m. **Form M:** Certificate of UPNEDA Project Officer
- n. **Form N:** Format: Technical Bid
- o. The Bid document issued by UPNEDA, amendments / corrigendum / interpretations/ addendum/clarifications etc. for the work, if any, duly signed by the Bidder as a token of unconditional acceptance.
- p. Audited Profit and Loss Account and Balance sheet along with CA certificate (Turnover and net worth) for the last three financial years are to be enclosed.
- q. Copy of Certificate of Incorporation.
- r. Copy of the GST number of the firm.
- s. Copy of Permanent Account Number (PAN) issued by IT department.
- t. Information regarding ex-employees of UPNEDA or its subsidiary companies working in the bidder organization if any. The bidder can use its own format regarding the same.
- u. Memorandum and Article of Association
- v. Any other information, the Bidder desires to furnish in connection with this Bid.

Until a formal / legally binding Contract is prepared and executed between us, this bid, together with your written acceptance thereof in the form of your Notifications of Award shall constitute a Bid Contract between us for all legal purpose.

We understand that you are not bound to accept the lowest or any bid that you may receive or might have received.

We, hereby, declare that the persons or firms interested in this proposal are named herein and that no person or firm other than mentioned herein have any interest in this proposal or in the Contract to be entered into, if the award is made on us. This proposal is made without any connection with any other person, firm or party likewise submitting a proposal of their own, and without any collusion or fraud.

Thanking You.

Regards,

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

## 11.2 Form B: General Particulars of the Bidder

<b>Key Information</b>		
<b>1</b>	Name of Bidder	
<b>2</b>	Postal Address	
<b>3</b>	Mobile no.	
<b>4</b>	Telephone, Telex, Fax No	
<b>5</b>	E-mail	
<b>6</b>	Web site	
<b>7</b>	Name, designation and Mobile Phone No. of the representative of the Bidder to whom all references shall be made	
<b>8</b>	Name and address of the Indian/foreign Collaboration if any	
<b>9</b>	Have anything/extra other than price of items (as mentioned in price Schedule) been written in the price schedule.	
<b>10</b>	Have the Bidder to pay arrears of income tax. If yes up to what amount?	
<b>11</b>	Have the Bidder ever been debarred By any Govt. Deptt./ Undertaking for undertaking any work?	
<b>12</b>	Details of offer (please mention number of pages and number of Drawings in the hard copy if any)	
<b>13</b>	Reference of any other information attached by the tenderer (please Mention no. of pages & no. of drawings)	

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

### 11.3 Form C: Checklist

Sr. No.	Eligibility Criteria	Particulars	Documents to be submitted	Particulars in brief of the Documents to be submitted by the Bidder.
1	<b>Tender Fee &amp; Earnest Money</b>	Tender Fee of Rs 11800/- (inclusive of GST) in the form of DD or RTGS/NEFT or any other online mode.  The bidder should submit EMD in the form of BG or DD of 2 % of Estimated Cost.	Bank Guarantee	As Annexure-1
2	<b>Company Eligibility</b>	The bidder should be a firm registered/incorporated under Companies Act, 1956 or Companies Act, 2013/ and further amendment (s), or a registered partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2002)/ Proprietorship or under Society act.  (System integrators are also allowed to participate in the bid.)	Certificate of Incorporation issued by the Registrar of Companies and	Relevant certification proof showing the establishment of firm in respective category.
3	<b>Test Report</b>	Bidder should have valid Test report of complete system/various components ( <b>PV module, PCU cum inverter, etc</b> ) issued from MNRE authorized testing center or NABL accredited test lab.  Authorization Letter in the name of Bidder issued from OEM.	Test report of MNRE/NABL accredited lab-----  Manufacturer Authorization Certificate of Main components (i.e. PV Module, PCU cum Inverter) of Solar Power Plant.	<ul style="list-style-type: none"> <li>• Test report no:</li> <li>• Issuing date:</li> <li>• Name of Lab:</li> </ul>
4	<b>GSTIN</b>	A copy of valid GSTIN registration certificate	Valid GSTIN Registration Certificate	Issuing date:
5	<b>Financial Turnover</b>	Bidders should have Overall Average Annual Turnover (ATO) in the last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be as per following:-	Duly authorized copy of audited annual report/Balance Sheet for last five years is to be submitted by	M/s _____ 2019-2020:..... 2020-2021:.....

Sr. No.	Eligibility Criteria	Particulars	Documents to be submitted	Particulars in brief of the Documents to be submitted by the Bidder.
		<p>Required Average Annual Turnover from the Bidders for each Part of tendered capacity separately.</p> <p><b>Part A- For Pump Capacity (3HP)- 24.04 Crore</b></p> <p><b>Part B- For Pump Capacity (5HP)- 28.15 Crore</b></p> <p><b>Part C- For Pump Capacity (7.5HP)- 58.85 Crore</b></p> <p><b>Part D- For Pump Capacity (10 HP)- 11.18 Crore</b></p> <p><i>If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative Average Annual Turnover of each respective part.</i></p> <p>(For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).</p>	<p>respondent along with CA certificate.</p>	<p>2021-2022:.....</p> <p>2022-2023:.....</p> <p>2023-2024:.....</p> <p>Average turnover Rs.....</p>
6	<b>Technical Experience</b>	<p><b>Past Performance:</b> The Bidder should have continuously supplied and installed same or similar Category Products (i.e. Grid Connected / Off-Grid Solar Photovoltaic Systems (SPV) (SPV Pumps / Rooftop SPV / Ground mounted SPV) in last five years i.e. 2019-2020, 2020-2021,2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company.</p> <p>Required experience capacity from the Bidders for each Part of tendered capacity separately.</p> <p><b>Part A- For Pump Capacity (3HP)- 4725 kW</b></p> <p><b>Part B- For Pump Capacity (5HP)- 5625 kW</b></p> <p><b>Part C- For Pump Capacity (7.5HP)- 11760 kW</b></p>	<p>Work order copies/ LoA's/Completion Certificates from registered central/state (including local body or autonomous institutions working under it.) / Company.</p>	<p>As per Format</p>

Sr. No.	Eligibility Criteria	Particulars	Documents to be submitted	Particulars in brief of the Documents to be submitted by the Bidder.
		<p><b>Part D- For Pump Capacity (10 HP)- 2235 kW</b>  <i>If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative experience requirements of each respective part.</i></p>		
7	<b>Net worth</b>	The bidder's Net worth as on the last day of preceding financial year must be positive.	Duly authorized copy of audited annual report is to be submitted along with a practicing CA's certificate.	
8	<b>Notarized Affidavit by the Bidder</b>	<p>1. An undertaking that the service centers will be opened in allotted district and list will be submitted before supply and installation for verification</p> <p>2. Bidder should not have been Debarred/blacklisted by any of the State/Central Government or organizations of the State/Central Government. (A notarized affidavit Should be submitted on non-judicial stamp paper )</p> <p>3. Bidder should not have any dues of income tax and GST of the State/ Central Government. (A notarized affidavit Should be submitted on non-judicial stamp paper)</p> <p>4. All the information and documents submitted in the Bid are correct</p> <p>5. General and specific/Technical terms of contract are acceptable to Bidder in to without any deviation.</p>	A notarized affidavit Should be submitted on non-judicial stamp paper.	
9.	<b>Technical Bid</b>	Part-6 TECHNICAL BID		

*Note:*

- *Bids received without supporting documents for the various requirements mentioned in the Bid document may be rejected.*
- *No extra paper Other than required as above should be submitted in Bid.*

**Signature of the Authorized Representative:  
Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

**11.4 Form D: Proof of payment or demand draft for cost of payment of the tender document.**

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

## **11.5 Form E: Earnest Money Deposit to be submitted as DD or BG from any nationalized or scheduled bank in the specified format**

[Duly Notarized on Rs. 100/- Stamp Paper]

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

In consideration of the ..... (Insert name of the Bidder) submitting the Bid inter alia for Response to Bid for **“Supply, Installation, Testing, Commissioning & 5 Years Comprehensive Maintenance of Distributed Grid Connected Solar PV Systems along with VFD for Solarization of 10000 Nos Grid Connected Agriculture Pumps under KUSUM Component C-1 Scheme in the state of Uttar Pradesh as per specification given in Scope of Work of Bid Document.”** for meeting the requirements of UPNEDA in response to the Bid dated .....[Insert date of Bid] issued by UPNEDA, (hereinafter referred to as UPNEDA) and such UPNEDA / Procurer(s) agreeing to consider the Bid of ..... [Insert the name of the Bidder] as per the terms of the Bid, the .....(Insert name and address of the bank issuing the EMD, and address of the head office) (here in after referred to as “Guarantor Bank”) hereby agrees unequivocally, irrevocably and unconditionally to pay to UPNEDA or its authorized representative at Uttar Pradesh New & Renewable Energy Development Agency, VibhutiKhand, Gomti Nagar, Lucknow forthwith on demand in writing from UPNEDA or any representative authorized by it in this behalf an amount not exceeding Rupees ..... (Rs.....) only [Insert amount not less than as calculated as per Clause of Earnest Money Deposit of Bid] on behalf of M/s. ....[Insert name of the Bidder].

This guarantee shall be valid and binding on the Guarantor Bank up to and including ..... (Insert date of validity of EMD in accordance with Section 3 Clause 3.7 Earnest Money Deposit of this RFS) and shall not be terminable by notice or any change in the constitution of the Guarantor Bank or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between concerned parties.

Our liability under this Guarantee is restricted to Rupees ..... (Rs.....) only. Our Guarantee shall remain in force until ..... [Date to be inserted as per validity mentioned in Clause of Earnest Money Deposit] UPNEDA / Procurer(s) or its authorized representative shall be entitled to invoke this Guarantee until ..... [Insert Date validity mentioned in Section 3 Clause 3.7 Earnest Money Deposit,].

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand from UPNEDA / Procurer(s) or its authorized representative, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to UPNEDA / Procurer(s) or its authorized representative.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection, disputes, or disparities raised by the Bidder or any other person. The Guarantor Bank shall not require UPNEDA / Procurer(s) or its authorized representative to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against UPNEDA / Procurer(s) or its authorized representative in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Lucknow shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.



This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank. This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly, UPNEDA / Procurer(s) or its authorized representative shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder to enforce any security held by UPNEDA / Procurer(s) or its authorized representative or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

The Guarantor Bank hereby agrees and acknowledges that UPNEDA / Procurer(s) shall have a right to invoke this Bank Guarantee either in part or in full, as it may deem fit. Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs ..... (Rs..... only) and it shall remain in force until ..... [Date to be inserted on the basis of Clause of Earnest Money Deposit of Bid],

We are liable to pay the guaranteed amount or any part thereof under this BANK GUARANTEE only if UPNEDA / Procurer(s) or its authorized representative serves upon us a written claim or demand.

In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this ..... day of ..... at .....

Witness:

Signature Name:

1. ....

Signature Name and address.

Designation with Bank Stamp

2. ....

Signature Name and address

Attorney as per power of attorney No. ....

For: ..... [Insert Name of the Bank]

**Banker's Stamp and Full Address:**

Dated this ..... day of ..... 20....

## 11.6 Form F: Bidder documentary evidence in support of the Pre-Bid Eligibility Criteria

Sr. No.	Particulars	Details Furnished by the Bidder	Documentary Evidence Provided (Y/N)
1	<p>The bidder should be a firm registered/incorporated under Companies Act, 1956 or Companies Act, 2013/ and further amendment (s), or a registered partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2002)/ Proprietorship or under Society act.</p> <p>(System integrators are also allowed to participate in the bid.)</p>		
2	<p>Bidder should have valid Test report of complete system/various components (<b>PV module, PCU cum inverter, etc</b>) issued from MNRE authorized testing center or NABL accredited test lab.</p> <p>Authorization Letter in the name of Bidder issued from OEM.</p>		
3	<p><b>Past Performance:</b> The Bidder should have continuously supplied and installed same or similar Category Products (i.e. Grid Connected / Off-Grid Solar Photovoltaic Systems (SPV) (SPV Pumps / Rooftop SPV / Ground mounted SPV) in last five years i.e. 2019-2020, 2020-2021,2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company.</p> <p>Required experience capacity from the Bidders for each Part of tendered capacity separately.</p> <p><b>Part A- For Pump Capacity (3HP)- 4725 kW</b>  <b>Part B- For Pump Capacity (5HP)- 5625 kW</b>  <b>Part C- For Pump Capacity (7.5HP)- 11760 kW</b>  <b>Part D- For Pump Capacity (10 HP)- 2235 kW</b></p> <p><i>If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative experience requirements of each respective part.</i></p>		
4	<p>The Bidder should have valid GSTIN registration certificate. A copy of which should be enclosed.</p>		
5	<p><b>Financial Turnover :</b> Bidders should have Overall Average Annual Turnover (ATO) in the last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be as per following:-</p> <p>Required Average Annual Turnover from the Bidders for each Part of tendered capacity separately.</p> <p><b>Part A- For Pump Capacity (3HP)- 24.04 Crore</b>  <b>Part B- For Pump Capacity (5HP)- 28.15 Crore</b>  <b>Part C- For Pump Capacity (7.5HP)- 58.85 Crore</b>  <b>Part D- For Pump Capacity (10 HP)- 11.18 Crore</b></p> <p><i>If a bidder is interested in participating in two or more parts, the bidder must fulfill the cumulative Average Annual Turnover of each respective part.</i></p>		

Sr. No.	Particulars	Details Furnished by the Bidder	Documentary Evidence Provided (Y/N)
	(For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).		
6	The bidder's Net worth as on the last day of preceding financial year must be positive.		

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal**

**11.7 Form G: Schedule of Experience (Supply & Installation)**

**(Please attach certificates in support from the concerned nodal agency /Govt. Organization/ MNRE authorized Agency /Project owner for work executed in case of private owner the joint commissioning report along with officer of Nodal agency/govt organization)**

S. No	Work Order No	Order Date	Value of Work	Deptt/Agency/ Beneficiary for which work carried out	Description of Project	Supply/Completion Period (with from/ to dates)	Ref. No. & Date of Material Receipt	Certificates/ PO/Work Completion Certificates.
1								
2								
3								

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

**11.8 Form I: Declaration on Notarized Affidavit that the information provided by the Bidder is true to the best of its knowledge, specifically pertaining to the experience furnished & conflict check**

(To be submitted by the Bidder along with the Bid)

(To be executed on non-judicial stamp paper of suitable value)

We \_\_\_\_\_ (hereinafter referred to as the Bidder) being desirous of Bid for the work under the above mentioned Bid and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the Bid document,

DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the Bid document and agrees with all provisions of the Bid document.
2. The Bidder is capable of executing and completing the work as required in the Bid.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the Bid.
4. The Bidder has no collusion with other Bidders, any employee of UPNEDA or with any other person or firm in the preparation of the bid.
5. The Bidder has not been influenced by any statement or promises of UPNEDA or any of its employees, but only by the Bid document.
6. The Bidder is financially solvent and sound to execute the work.
7. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of UPNEDA.
8. The information and the statements submitted with the Bid are true.
9. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
10. The Bidder has not been debarred from any type of work by UPNEDA and or Government undertaking/ Department.
11. This offer shall remain valid for acceptance for 3 Months from the date of opening of financial part of Bid.
12. The Bidder gives the assurance to execute the e-tendered work as per specifications terms and conditions.

**Signature of the Authorized Representative:**

**Full Name of the Authorized Representative & Address of the Firm**

**Date with Seal:**

**Witness Signature-----**

**Name & Address of the witness-----**

### 11.9 Form J: Format of Performance Bank Guarantee (PBG)

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

In consideration of the ----- [Insert name of the Bidder] (hereinafter referred to as selected Successful Bidder (SB)) submitting the response to Tender document inter alia for selection of the Project for the capacity of ..... Nos in response to the Bid No \_\_\_\_\_ dated..... issued by UPNEDA and UPNEDA considering such response to the Tender document of .....[insert the name of the Successful Bidder] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and issuing Letter of allocation No ----- to----- (insert the name of the Successful Bidder(SB)) as per terms of Tender document and the same having been accepted by the selected SB or a Project Company, M/s ----- {a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable ]. As per the terms of the Bid document, the \_\_\_\_\_ [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to UPNEDA at \_\_\_\_\_ [Insert Name of the Place from the address of the UPNEDA] forthwith on demand in writing from UPNEDA or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees----- [Total Value] only, on behalf of M/s \_\_\_\_\_ [Insert name of the selected Successful Bidder(SB)/ Project Company]

This guarantee shall be valid and binding on this Bank up to and including.....[insert date of validity in accordance with Bid document].and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ only).

Our Guarantee shall remain in force until..... UPNEDA shall be entitled to invoke this Guarantee till .....

The Guarantor Bank hereby agrees and acknowledges that UPNEDA shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by UPNEDA, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to UPNEDA. The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by -----[Insert name of the Successful Bidder(SB)/ Project Company as applicable] and/or any other person. The Guarantor Bank shall not require UPNEDA to justify the invocation of this BANK

GUARANTEE, nor shall the Guarantor Bank have any recourse against UPNEDA in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Lucknow shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly UPNEDA shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Successful Bidder(SB) / Project Company , to make any claim against or any demand on the Successful Bidder(SB)/ Project Company or to give any notice to the Successful Bidder(SB)/ Project Company or to enforce any security held by UPNEDA or to exercise, levy or enforce any distress, diligence or other process against the Successful Bidder(SB)/ Project Company.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ only) and it shall remain in force until ..... We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if UPNEDA serves upon us a written claim or demand.

Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Power of Attorney No. \_\_\_\_\_  
Email ID \_\_\_\_\_  
For \_\_\_\_\_ [Insert Name of the Bank] \_\_\_\_\_  
Banker's Stamp and Full Address.  
Dated this \_\_\_ day of \_\_\_, 20\_\_

**Witness:**

1. ....

Signature  
Name and Address

Notes: The Stamp Paper should be in the name of the Executing Bank and of appropriate value.

## 11.10 Form L: Format for Bid Security Declaration

(To be stamped on non – judicial stamp paper as per the stamp act of the state where the document is made)

Ref: \_\_\_\_\_

Date: \_\_\_\_\_

**Subject:** Declaration of bid security requirement.

We, \_\_\_\_\_(insert name of the Bidder) hereby provide this undertaking to UPNEDA, in respect to our response to Bid vide Bid No.\_\_\_\_\_dated\_\_\_\_\_. We undertake that we will abide by the provisions of the Bid for the activities pertaining to submission of response to

Tender, during the bid validity period. We undertake not to withdraw or modify our bid during the bid validity period, in line with provisions of the Tender.

Incase we withdraw or modify our response to the Bid during the bid validity period, or violate other provisions of the Tender which make the bid non responsive, we, \_\_\_\_\_(insert name of the bidder) including our Parent, Ultimate Parent, and our Affiliates shall be suspended/debarred from participating in upcoming tenders issued by any department of Uttar Pradesh Government for a period of 5 years from the date of default as notified by UPNEDA.

(Name and Signature of the Authorized Signatory



**11.11 Form M: Format for Power of Attorney**

**(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)**

**Power of Attorney to be provided by the Bidding Company in favour of its representative as evidence of authorized signatory's authority.**

Know all men by these presents, We ..... (name and address of the registered office of the Bidding Company as applicable) do hereby constitute, appoint and authorize Mr./Ms. .... (name & residential address) who is presently employed with us and holding the position of..... as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for implementation of system in response to the BID DOCUMENT. No..... dated ..... issued by UPNEDA, Lucknow including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the UPNEDA may require us to submit. The aforesaid Attorney is further authorized for making representations to the UPNEDA, Lucknow and providing information / responses to UPNEDA, Lucknow representing us in all matters before UPNEDA, Lucknow and generally dealing with UPNEDA, Lucknow in all matters in connection with this Bid till the completion of the bidding process as per the terms of the above mentioned BID DOCUMENT.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the BID DOCUMENT.

**Signed by the within named**

..... **(Insert the name of the executants company)**

**through the hand of Mr. ....duly authorized by the Board(vide Board resolution No\_\_\_\_) to issue such Power of Attorney**

**Dated this ..... day of .....**

**Accepted**

Signature of Attorney

(Name, designation and address of the Attorney)

**Attested.....**

**(Signature of the executant)**

**(Name, designation and address of the executant)**

.....

**Signature and stamp of Notary of the place of execution**

**Common seal of ..... has been affixed in my/our presence Pursuant to Board of Director's Resolution dated.....(Board of Director's Resolution is also enclosed)**

**WITNESS**

**i) .....  
(Signature)**

**Name.....**

**Designation .....**

**ii) .....  
(Signature)**

**Name.....**

**Designation .....**

**Notes:** The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.

## 11.12 JOINT COMMISSIONING AND HANDING OVER CERTIFICATE /WARRANTEE CARD

### Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)

#### JOINT COMMISSIONING AND HANDING OVER CERTIFICATE /WARRANTEE CARD:

(To be submitted in 3 copies )

It is hereby certified that following system has been supplied, installed, commissioned and handed over to the beneficiary as per following details:-

Sr. No	Items	Details
	Name of system	
	Agreement Number and date	
	Work Order Number Date	
	UID number (14 digit)	
	Name of Beneficiary.	
	District	
	Block	
	Village/Gram Panchayat	
	Date of installation	
	Warrantee expire on	
	Name & Address of the Manufacturer/ Supplier of the system with mobile no for maintenance contact	
	SPV Modules Installed Sr. No Make Model	
	PCU/Inverter Sr. No Make Model	
	Others/ BOS Items Sr. No Make	

	Model	
	Training for operation & maintenance of the systems	Provided/Not Provided
	Technical literature, operation & maintenance manual in English & Hindi	Provided/Not Provided

(Signature)

Authorized Signatory of firm

(with seal)

(Signature)

Sr./Project Officer/Incharge-Project

(with seal)

### 11.13 Form P: Technical Bid: To be submitted with Technical bid

	Description	To be furnished by the Contractor/Bidder
A	<b>Solar PV Module</b>	
	Type of Module:	
	Manufacturer of cell	
	Manufacturer of Module	
	Max power at STC Pmax (W)	
	Voltage at Max power Vmp(V)	
	Current at Max power Imp(A)	
	Open circuit voltage Voc (V)	
	Short circuit current Isc (A)	
	Module efficiency	
	Cell efficiency	
	Fill factor	
B	<b>Solar Power Conditioning Unit/ Inverter</b>	
	Manufacturer :	
	Type String type/central	
	Operating voltage (DC)	
	Operating voltage AC (pure sine wave)	
	Details of Indicators provided	
C	<b>SOLAR PUMP CONTROLLER WITH MPPT AND VARIABLE FREQUENCY DRIVE (VFD)</b>	
	Manufacturer :	
	Type String type/central	
	Operating voltage (DC)	
	Operating voltage AC (pure sine wave)	
	Details of Indicators provided	

*Note: - Makes /Manufactures name should only be mention in the format (equivalent/ other MNRE approved etc such thing are not acceptable)*