Uttar Pradesh New & Renewable Energy Development Agency (UPNEDA)

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

BID DOCUMENT

FOR

Supply, erection, testing and commissioning including comprehensive warranty maintenance for 10 years of 11 kW to 50 kW On-grid Hybrid Solar Rooftop Power Plant with Battery backup for captive use (Capex Mode) in various Government buildings at various places in the State of Uttar Pradesh as per specification given in Scope of Work of Bid Document.

Bid No: - 03/UPNEDA/ On-grid Hybrid Solar Rooftop (11kW-50kW)/2024-25

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 **E-mail :** ho_ajay@rediffmail.com

Table of Contents

1 Abbreviation 5

2 Disclaimer 6

3 Bid Details 8

4 Brief Description of the Proposal & its Submission 10

4.1 Part I: Technical Bid (Online Submission Only) 10

4.2 Part II: Price Bid (Online Mode Submission only) 11

4.3 Language of Bid & Measure 11

4.4 Proposal Submission 11

4.5 Format and Signing of Bid: 13

4.6 Deadline for Submission of Bids: 13

4.7 UPNEDA's Right to Reject Tender: 13

4.8 Bid Validity Period 14

4.9 Opening of Bids 14

4.10 Clarification of Bids & Pre-Bid Conference 14

4.11 Amendment to Bid Documents 15

4.12 Local Conditions 15

5 Pre-Bid Eligibility Criteria 16

6 Technical Evaluation Criteria 19

6.1 Clarification of Bid 19

7 Evaluation of Bids 20

7.1 Finalization of BID: 20

7.2 Finalization of Empanelment: 20

8 General Conditions of the contract 21

8.1 Definitions 21

8.2 Liquidated Damages 21

8.3 Force Majeure 22

8.4 Settlement of Disputes and Provisions for Arbitration 22

8.5 Confidentiality 23

8.6 Subletting or Transfer of Contract 23

8.7 Taxes Duties and Insurance: 23
8.8 Inspections and Tests: 23
8.9 Inspection at Works: 23
8.10 Warranty: 24
8.11 Patent Right and Royalties: 25
8.12 Packing & Forwarding: 25
8.13 Demurrage WHARF AGE ETC: 25
8.14 Insurance: 25
8.15 Transportation: 26
8.16 Post Commissioning Activities 26
8.17 Project Inspection 26
8.18 Applicable Law: 26
8.19 Notice: 26
8.20 Timeline, Payment Terms 26
8.21 Others: 27
9 Contracting Arrangements 31
9.1 Signing of the Contract Agreement 31
9.2 Performance Security 31
9.3 Termination of Contract 31
10 Scope of Work and Technical Specifications 33
11 Forms – Part I: Technical 60
11.1 Form A: Covering Letter 60
11.2 Form B: General Particulars of the Bidder 62
11.3 Form C: Checklist 63
11.4 Form D: Proof of payment or demand draft for cost of payment of the tender document. 66
11.5 Form E: Earnest Money Deposit to be submitted as BG from any nationalized or scheduled bank in the specified format 67
11.6 Form F: Bidder documentary evidence in support of the Pre-Bid Eligibility Criteria ... 69
11.7 Form G: Schedule of Experience (Supply & Installation) 71
11.8 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 72
11.9 Form I: Format of Performance Bank Guarantee (PBG) 73

11.10 Form J: Format for Bid Security Declaration 75
11.11 Form K: Format for Power of Attorney..... 76
11.12 Form L: FORMAT FOR POWER OF ATTORNEY 78
11.13 FORM M FORMAT FOR CONSORTIUM/JOINT VENTURE AGREEMENT 80
11.14 FORM N JOINT COMMISSIONING AND HANDING OVER CERTIFICATE /WARRANTEE CARD 84
11.15 Form O: Technical Bid: To be submitted with Technical bid..... 86

1 Abbreviation

Sr. No	Particulars	Definition
1	UPNEDA	Uttar Pradesh New & Renewable Energy Development Agency
2	Govt. of UP	Government of Uttar Pradesh
3	GoI	Government of India
4	LED	Light-emitting Diode
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

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	**Bid no:**	03/UPNEDA/ On-grid Hybrid Solar Rooftop (11kW-50kW)/2024-25
2	**Particulars of the work:**	Supply, erection, testing and commissioning including comprehensive warranty maintenance for 10 years of 11 kW to 50 kW On-grid Hybrid Solar Rooftop Power Plant with Battery backup for captive use (Capex Mode) in various Government buildings at various places in the State of Uttar Pradesh as per specification given in Scope of Work of Bid Document.
3	**Tentative Capacity (MW)**	**2 MW** The above said quantity is dependent on availability of fund.
4	**Estimated Cost including GST (Rs)**	**Rs 44 Crores**
5	**Period of Work**	Within 4 months from the date of issuance of Work Order or as specified by UPNEDA
6	**E-Bid Portal (website):**	etender.up.nic.in
7	**E-Tender Cost:**	Tender Fee of Rs 11800/- (inclusive of GST) in the form of DD or RTGS/NEFT or any other online mode.
8	**Earnest money deposit (EMD):**	The bidder should submit EMD in the form of BG or DD of 2 % of Estimated Cost.
9	**Performance Security**	5% of Work Order Value
10	**Availability of tender document on e-tender Portal**	From: 18.03.2025 after 6 pm onwards
11	**Pre-Bid Meeting**	No
12	**Bid submission end date & Time**	On: 28.03.2025 upto 6:00 pm
13	**Online technical Bid Opening date & time**	On: 29.03.2025 at 11:30 am
14	**Financial Bid Opening date & time (Only of technically qualified bidders)**	Shall be intimated later
15	**Consortium/JV Allowed:**	Yes
16	**Sub-Contracting Allowed:**	No
17	**Proposal Language:**	English
18	**Proposal Currency:**	INR
19	**Venue of opening of technical & financial Bids**	UPNEDA Head Office, Vibhuti Khand, Gomti Nagar, Lucknow-226010
20	**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_ajay@rediffmail.com Website: http://upneda.org.in
21	**Period of validity of rates for acceptance**	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 power of attorney **(Applicable Only in case of Consortium/JV)**
   m. **Form M:** FORMAT FOR CONSORTIUM/JOINT VENTURE AGREEMENT
   n. **Form N:** Format for Joint Commissioning and Handing over certificate /Warrantee Card.
   o. **Form O:** Format: Technical Bid
   p. 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.
   q. 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.
   r. Copy of Certificate of Incorporation.
   s. Copy of the GST number of the firm.
   t. Copy of Permanent Account Number (PAN) issued by IT department.
   u. 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.
   v. Memorandum and Article of Association

w. 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 of 2 % of Estimated Cost. The Bidder shall furnish Interest free EMD in the form of Bank Guarantee (BG) in favour of "Director, UPNEDA", payable at Lucknow. The validity of EMD shall be for a period of 6 months from the Bid Deadline.

MSEs 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 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. In case of JV, for exemption in EMD, Lead partner of JV should have MSE Certificate having unit in Uttar Pradesh.

The Bid Bond/EMD shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to the On Grid Hybrid Solar Rooftop Tender 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.

e. Actions against bidder(s) indulging in corrupt /fraudulent/ collusive/ coercive practice. If it is observed during bidding process/ bids evaluation stage that a bidder has indulged in corrupt/fraudulent /collusive/coercive practice, the bid of such Bidder (s) shall be rejected and its Earnest Money Deposit (EMD) shall be forfeited and blacklisting/debarring of the Bidder.

f. EMD of a tenderer will be forfeited and blacklisting/debarring of the Bidder, if the tenderer withdraws or amends his tender or impairs or derogates from the tender in any respect after expiry of the deadline for the receipt of tender but within the period of validity of his tender. Further, if the successful tenderer fails to furnish the required performance security within the specified period, his EMD will be forfeited.

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 there of, 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 Invitation for Bid. The request must reach on or before ore 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_ajay@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

Minimum Eligibility Conditions:

1. The Bidder must submit Tender Fee of Rs 11800/- (inclusive of GST) in the form of DD or RTGS. (Non Refundable)
2. The bidder must submit EMD in the form of BG of 2 % of Estimated Cost. MSEs having unit in state of Uttar Pradesh are exempted from submission of Bid Security/EMD, however required to must submit a "Bid Security Declaration" Letter on non-Judicial stamp of appropriate value as per prescribed format (Form-J).

The Bidder must meet the minimum eligibility conditions mentioned above to participate in the Bid. Upon fulfilling these conditions, the Bidder will be considered for further evaluation.

In this tender, single bidder or JV if 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 bidder 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	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. Bidders can be sole/ single bidder OR Joint venture (JV) or Consortium of two or more firms as partners, All the partners of the JV/ Consortium must meet collectively 100% of Technical & Financial Eligibility Conditions. Maximum no of JV Partners/Consortium Members should be 3 Nos. JV partner /Consortium should not withdraw within the tenure of agreement and O&M period. If JV partner /Consortium withdraw then all members of JV will be blacklisted and suspended/debarred from participating in	**Duly attested copies of:** **a.** Certificate of Incorporation issued by the Registrar of Companies **b.** Authorization Letter in the name of Bidder issued from OEM.

Sr. No.	Particulars	Details
	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. (System integrators are also allowed to participate in the bid.)	
2	**Past Performance:** The Bidder should have continuously supplied and installed Solar Rooftop Power Plant for 30% of bid quantity, i.e 6**00 kW**, in last Five financial years i.e. 2019-20, 2020-21, 2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company. (If Bidder provides work experience regarding supply, installation and commissioning from company, bidder must provide the certificate of incorporation of respective company.)	**a.** Work order copies/ LoA's/Completion Certificates from registered central/state (including local body or autonomous institutions working under it.) / Company
3	**Bidder Turn over Criteria:** Bidders should have Overall Average Annual Turnover (ATO) in the best performing three year of last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be at least 30% of the tender cost i.e. **Rs 13.20 crores**. Out of above mentioned five years, best performing three years will be considered for evaluation of Average Annual Turnover. (For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover or All the partners of the JV/ Consortium must meet collectively. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).	Duly authorized copy of audited annual report/Balance Sheet for last five years is to be submitted by respondent along with CA certificate.
4	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.

Sr. No.	Particulars	Details
5	The Bidder should have valid GSTIN registration certificate. A copy of which should be enclosed.	Valid GSTIN Registration Certificate

Other Technical Document requirement as per the following: -

Sr. No.	Particulars	Details
1	Bidder should have valid Test report of **complete system/various components (PV module, Hybrid inverter, Battery, complete system etc)** issued from MNRE authorized testing center or NABL accredited test lab. **The test report should be valid and not older than April 2022.**	**a.** Test report of MNRE/NABL accredited lab **b.** Authorization Letter in the name of Bidder issued from OEM.
2.	**<u>Notarized Affidavit by the Bidder</u>** 1. An undertaking that the service centers will be opened in allotted district and list will be submitted before supply and installation for verification	A notarized affidavit Should be submitted on non-judicial stamp paper.
	2.Bidder should not have been Debarred/blacklisted by any of the State/Central Government or organizations of the State/Central Government	
	3. Bidder should not have any dues of income tax and GST of the State/ Central Government.	
	4. All the information and documents submitted in the Bid are correct	
	5. General and specific/Technical terms of contract are acceptable to Bidder in to without any deviation.	
3	TECHNICAL BID- **Form O**	

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

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_ajay@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 capacity/quantity subject to performance, speedy work completion and on availability of fund . The remaining of Bid capacity/quantity shall be awarded among others qualified MSE /Non MSME firms. Allocation will depend on performance. There will be provision on early completion of project with respect to allocation of capacity/quantity.
e. Minimum 25% of the total order capacity/ quantity 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 will assign districts/division to the short-listed contractor/ bidders /suppliers as and when districts are ready to take supplies. Normally one district /division will have only one contractor/ bidder, so that he can open a service station.
h. Training of the users and entrepreneurs/ operators will be arranged by the contractor/ bidder.
i. If required UPNEDA reserves the right to negotiate with (lowest) L-1 bidder before finalization of the tender.
j. UPNEDA reserves the right to accept any bid and to reject any or all bids.
k. UPNEDA reserves the right at the time of awarding the contract to increase or decrease the quantity of works as per terms and conditions.
l. NOTIFICATION OF EMPANELLMENT:

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 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 rooftop solar photovoltaic power plants including,

- Detailed project report including layout and drawings of the plant for the capacity more than 50KW.
- All the consent, clearance and approvals
- Testing Certificate of solar module and PCU 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 be 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. 85% of the ordered value after the supply, installation 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.
b. The balance 15% payment shall be billed as AMC charges on annual basis kept as security deposit and to be released @ 1.5% at the end of each year for 10 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.
c. In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of "UPNEDA" shall be final.
d. 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 I: 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 bidding 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

a. Scope of work covers Design, Supply, Installation, Commissioning and five years Comprehensive warranty Maintenance and Operation of various capacity of On-grid Hybrid Solar Rooftop Plant with Battery backup for captive use (Capex Mode) in various Government buildings at various places in the State of Uttar Pradesh as per the technical specification given in this bid.
b. Wiring up to Distribution Board from the SPV Rooftop system will be in the scope of the Successful bidder(s).
c. Performance testing of the complete system.
d. Remote Monitoring System
e. 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, Battery 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.

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.

TECHNICAL SPECIFICATIONS

A On-Grid Hybrid Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU)/Hybrid Inverter consisting of Maximum Power Point Tracker (MPPT), Inverter, Controls & Protections, Net meter, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied SPV system will be with battery and bi-directional should be designed with necessary features. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs, Battery etc.,should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable. Solar PV rooftop system shall consist of following major equipment/components.

- Solar PV module
- Hybrid Inverter
- Mounting structures
- Junction Boxes.
- Earthing and lightening protections.
- Battery
- IR/UV protected PVC Cables, pipes and accessories
- Remote Monitoring System

The solar photovoltaic technology Crystalline based RTS projects for generation of electricity will be deployed under the Programme. Project proponents to adhere to the national/ international standards specified by MNRE from time to time.

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

	Must have test certificate as per MNRE guide lines and specified in this tender
Origin	**Manufactured in India both cell and module**
Efficiency module	>= 19%
Fill factor	>= 70%
warranty	Panel output (W_p) capacity to be >=90% at the end of 10 years and >=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 350Wp.
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 Made in India
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 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 by MNRE, 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.

The rated output power of any supplied module shall have maximum tolerance of +/- 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.

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.

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

Solar PV Mounting Structure:

The PV modules shall be mounted on fixed metallic structures having adequate strength and as per requirement of site to withstand the load of the modules and high wind velocities. The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.

Mounting structure:

1. 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 work.
2. Module mounting structures can be made from three types of materials. They are Hot Dip Galvanized Iron, Aluminium and Hot Dip Galvanized Mild Steel (MS). However, MS will be preferred for raised structure.
3. MMS Steel shall be as per latest IS 2062:2011 and galvanization of the mounting structure shall be in compliance of latest IS 4759. MMS Aluminium shall be as per AA6063 T6. For Aluminium structures, necessary protection towards rusting need to be provided either by coating or anodization.
4. All bolts, nuts, fasteners shall be of stainless steel of grade SS 304 or hot dip galvanized, panel mounting clamps shall be of aluminium and must sustain the adverse climatic conditions. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts.
5. 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.

6. The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed. The PV array structure design shall be appropriate with a factor of safety of minimum 1.5.
7. The upper edge of the module must be covered with wind shield so as to avoid build air ingress below the module. Slight clearance must be provided on both edges (upper & lower) to allow air for cooling.
8. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed. The Empanelled Agency shall be fully responsible for any damages to SPV System caused due to high wind velocity within guarantee period as per technical specification.
9. The structures shall be designed to allow easy replacement, repairing and cleaning of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels. Necessary testing provision for MMS to be made available at site.
10. Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection, ease of installation, replacement, cleaning of panels and electrical maintenance.
11. The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years.
12. The Rooftop Structures maybe classified in three broad categories as follows:-

i. Ballast structure

a. The mounting structure must be Non-invasive ballast type and any sort of penetration of roof to be avoided.
b. The minimum clearance of the structure from the roof level should be in between 70-150 mm to allow ventilation for cooling, also ease of cleaning and maintenance of panels as well as cleaning of terrace.
c. The structures should be suitably loaded with reinforced concrete blocks of appropriate weight made out of M25 concrete mixture.

ii. Tin shed

a. The structure design should be as per the slope of the tin shed.
b. The inclination angle of structure can be done in two ways-

   b.1. Parallel to the tin shed (flat keeping zero-degree tiling angle), if the slope of shed in Proper south direction

   b.2. With same tilt angle based on the slope of tin shed to get the maximum output.
c. The minimum clearance of the lowest point from the tin shade should be more then 100mm.

d. The base of structure should be connected on the Purlin of tin shed with the proper riveting.
e. All structure member should be of minimum 2 mm thickness.

iii. RCC Elevated structure: It can be divided into further three categories:

A. Minimum Ground clearance (300MM – 1000 MM)

a. The structure shall be designed to allow easy replacement of any module and shall be in line with site requirement. The gap between module should be minimum 30MM.
b. Base Plate – Base plate thickness of the Structure should be 5MM for this segment.
c. Column – Structure Column should be minimum 2MM in Lip section / 3MM in C-Channel section. The minimum section should be 70MM in Web side and 40MM in flange side in Lip section.
d. Rafter - Structure rafter should be minimum 2MM in Lip section / 3MM in C-Channel section. The minimum section should be 70MM in Web side (y-axis) and 40MM in flange side (x-axis).
e. Purlin - Structure purlin should be minimum 2MM in Lip section. The minimum section should be 60MM in Web side and 40MM in flange side in Lip section.
f. Front/back bracing – The section for bracing part should be minimum 2MM thickness.
g. Connection – The structure connection should be bolted completely. Leg to rafter should be connected with minimum 12 diameter bolt. Rafter and purlin should be connected with minimum 10 diameter bolt. Module mounting fasteners should be SS-304 only and remaining fasteners either SS-304 or HDG 8.8 Grade.
h. For single portrait structure the minimum ground clearance should be 500MM.

B. Medium Ground clearance (1000MM – 2000 MM) (for reference only)

a. Base Plate – Base plate thickness of the Structure should be Minimum 6MM for this segment.
b. Column – Structure Column should be minimum 2MM in Lip section / 3MM in C-Channel section. The minimum section should be 80MM in Web side and 50MM in flange side in Lip section.
c. Rafter - Structure rafter should be minimum 2MM in Lip section / 3MM in C-Channel section. The minimum section should be 70MM in Web side and 40MM in flange side in Lip section.
d. Purlin - Structure purlin should be minimum 2MM in Lip section. The minimum section should be 70MM in Web side and 40MM in flange side in Lip section.
e. Front/back bracing – The section for bracing part should be minimum 2MM thickness.

f. Connection – The structure connection should be bolted completely. Leg to rafter should be connected with minimum 12 diameter bolt. Rafter and purlin should be connected with minimum 10 diameter bolt. Module mounting fasteners should be SS-304 only and remaining fasteners either SS-304 or HDG 8.8 Grade.

C. Maximum Ground clearance (2000MM – 3000 MM) (for reference only)

a. Base Plate – Base plate thickness of the Structure should be minimum 8 MM for this segment.
b. Column – Structure Column thickness should be minimum 2.6MM in square hollow section (minimum 50x50) or rectangular hollow section (minimum 60x40) or 3MM in C-Channel section.
c. Rafter - Structure rafter should be minimum 2MM in Lip section / 3MM in Channel section. The minimum section should be 80MM in Web side and 50MM in flange side in Lip section.
d. Purlin - Structure purlin should be minimum 2MM in Lip section. The minimum section should be 80MM in Web side and 50MM in flange side in Lip section.
e. Front/back bracing – The section for bracing part should be minimum 3MM thickness.
f. Connection – The structure connection should be bolted completely. Leg to rafter should be connected with minimum 12 diameter bolt. Rafter and purlin should be connected with minimum 10 diameter bolt. Module mounting fasteners should be SS-304 only and remaining fasteners either SS-304 or HDG 8.8 Grade.

D. Super elevated structure (More than 3000 MM) (for reference only)

D.1. Base structure

a. Base Plate – Base plate thickness of the Structure should be 10MM for this segment.
b. Column – Structure Column minimum thickness should be minimum 2.9MM in square hollow section (minimum 60x60) or rectangular hollow section (minimum 80x40).
c. Rafter - Structure Rafter minimum thickness should be minimum 2.9MM in square hollow section (minimum 60x60) or rectangular hollow section (minimum 80x40).
d. Cross bracing – Bracing for the connection of rafter and column should be of minimum thickness of 4mm L-angle with the help of minimum bolt diameter of 10mm.

D.2. Upper structure of super elevated structure –

a. Base Plate – Base plate thickness of the Structure should be minimum 5MM for this segment.

b. Column – Structure Column should be minimum 2MM in Lip section / 3MM in Channel section. The minimum section should be 70MM in Web side and 40MM in flange side in Lip section.
c. Rafter - Structure rafter should be minimum 2MM in Lip section / 3MM in Channel section. The minimum section should be 70MM in Web side and 40MM in flange side in Lip section.
d. Purlin - Structure purlin should be minimum 2MM in Lip section. The minimum section should be 60MM in Web side and 40MM in flange side in Lip section.
e. Front/back bracing – The section for bracing part should be minimum 2MM thickness.
f. Connection – The structure connection should be bolted completely. Leg to rafter should be connected with minimum 12 diameter bolt. Rafter and purlin should be connected with minimum 10 diameter bolt. Module mounting fasteners should be SS-304 only and remaining fasteners either SS-304 or HDG 8.8 Grade.

D.3. If distance between two legs in X-Direction is more than 3M than sag angle/Bar should be provide for purlin to avoid deflection failure. The sag angle should be minimum 2MM thick, and bar should be minimum 12Dia.

D.4. Degree - The Module alignment and tilt angle shell be calculated to provide the maximum annual energy output. This shall be decided on the location of array installation.

D.5. Foundation – Foundation should be as per the roof condition; two types of the foundation can be done- either penetrating the roof or without penetrating the roof.

a. If penetration on the roof is allowed (based on the client requirement) then minimum 12MM diameter anchor fasteners with minimum length 100MM can be used with proper chipping. The minimum RCC size should be 400x400x300 cubic mm. Material grade of foundation should be minimum M20.
b. If penetration on roof is not allowed, then foundation can be done with the help of 'J Bolt' (refer IS 5624 for foundation hardware). Proper Neto bond solution should be used to adhere the Foundation block with the RCC roof. Foundation J - bolt length should be minimum 12MM diameter and length should be minimum 300MM.

Material standards:

i. Design of foundation for mounting the structure should be as per defined standards which clearly states the Load Bearing Capacity & other relevant parameters for foundation design (As per IS 6403 / 456 / 4091 / 875).
ii. Grade of raw material to be used for mounting the structures so that it complies the defined wind loading conditions (As per IS 875 - III) should be referred as

follows (IS 2062 – for angles and channels, IS 1079 – for sheet, IS 1161 & 1239 for round pipes, IS 4923 for rectangular and square hollow section)

iii. Test reports for the raw material should be as per IS 1852 / 808 / 2062 / 1079 / 811.

iv. In process inspection report as per approved drawing & tolerance should be as per IS 7215.

v. For ascertaining proper welding of structure part following should be referred:
   a. D.P. Test (Pin Hole / Crack) (IS 822)
   b. Weld wire grade should be of grade (ER 70 S - 6)

vi. For ascertaining hot dip galvanizing of fabricated structure following should be referred: -
   a. Min coating required should be as per IS 4759 & EN 1461.
   b. Testing of galvanized material
      - Pierce Test (IS 2633)
      - Mass of Zinc (IS 6745)
      - Adhesion Test (IS 2629)
      - CuSO4 Test (IS 2633)
      - Superior High-Grade Zinc Ingot should be of 99.999% purity (IS 209) (Preferably Hindustan Zinc Limited or Equivalent).

vii. Foundation Hardware – If using foundation bolt in foundation then it should be as per IS 5624.

Solar Array Fuse

The cables from the array strings to the solar grid inverters shall be provided with DC fuse protection. Fuses shall have a voltage rating and current rating as required. The fuse shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

BATTERY- Lithium ferro Phosphate:

The battery should Lithium Ferro phosphate (Lifepo4) having capacity as motioned below at standard conditions. The battery Voltage & AH can be changed keeping the overall KWH same. The voltage selection should be close to Vm of combinations of modules having 72/144 cells. The configuration of battery assembly should be as per requirement of capacity. The cell should be prismatic type having capacity not less than 40 Ah The other feature of the battery should be:

Sr No.	Description	Specification
1	Battery Configuration minimum cell capacity	3.2V- 40 AH; LiFePO4
2	Working Temperature Range (both for charging & discharging)	0-60 Deg C
3	Storage Temperature Range	@ 0-40 Deg- 6 months

4	Cycle Life (Full charge to full discharge @ 25 deg C before capacity of battery falls below 75%)	more than 3000 Cycles
5	Battery Warranty	The LFP batteries shall be warranted for at least 7 years. The cost for a one-time replacement of the battery after 7 years shall be included in the quoted rate. It will be mandatory to replace the entire battery system after 7 years till the completion of the O&M period. The specification of replacement battery shall be the same or higher. The successful bidder shall submit an invoice for the installed battery system after the commissioning of the project. An additional performance bank guarantee (PBG) of the same invoice amount shall be furnished before the release of 85% of the project cost. validity of additional PBG shall be 10 years. This additional PBG will be released after the replacement of the battery system.
6	Type of Cell	Prismatic

Depth of Discharge: minimum 90% Maximum Discharging rate: up to C/3 rate of battery Capacity Maximum Charging Rate: upto C/2 rate of battery capacity

- **The battery capacity in Watt Hour shall be calculated as 3840 Whr per kW. This capacity has been derived considering all derating factors, DoD, temp.correction factor, aging factor etc.**
  Example-1:- For 1 kW Solar Rooftop Plant, Battery capacity of minimum 3840 Whr shall be considered.
  Example-2:- For 2 kW Solar Rooftop Plant, Battery capacity shall be 3840 x 2 = 7680 Whr (Min) and so on till 75 kW.

- **The Voltage of the battery system shall be according to requirement of Hybrid Inverter/ DC input voltage of PV module string.**

- **The Ampere Hour (AH) rating of battery shall be calculated as Whr divided by Voltage of the Battery System.**
  Example-1:- For 1 kW Solar Rooftop Plant, with 25.6 V Battery System & 3840 Whr Battery Capacity the AH capacity shall be 3840 / 25.6 = 150 AH (min).
  Example-2:- For 2 kW Solar Rooftop Plant, with 51.2 V Battery System & 7680 Whr Battery Capacity the AH capacity shall be 7680 / 51.2 = 150 AH (min) and so on till 75 kW.

The Lithium Ferro phosphate battery needs a very good "Battery Management Systems" BMS to ensure the proper charging and discharging of each cell of battery with temperature compensation. This battery also needs constant current and constant voltage charging methodology related to upper voltage limit of battery. BMS primary focus is therefore on the safety and the protection of the battery pack, to minimize the risk of sudden failure and to maximize the life cycle of the battery. The secondary function of the BMS is to perform battery diagnosis, such as state of charge (SOC) estimation, state of health (SOH) estimation and state of power (SOP) estimation. Hence a very good battery management system to be incorporated and got it tested with battery from MNRE/NABAL accredited lab as per IEC/BIS standard. The BMS of the LFP battery must also communicate with PCU in some standard protocol like RS485/ 232 or CAN so that PCU can adapt to requirements of battery and extend its life. Communication between PCU and BMS and the compatibility of 2 should be ensured.

The Valid test report as BIS of at least 3.2-volt 40 Ah cell from MNRE/NABAL accredited lab should be submitted along with tender.

Hybrid Inverter

A Hybrid Solar PV power plant system comprises of C-Si (Crystalline Silicon) Solar PV modules with intelligent Inverter having MPPT technology and Intentional Islanding feature and associated power electronics, which feeds surplus generated AC power to the Grid and islands when the Grid is not available. During grid supply outage the system operates in off-grid mode using battery. Other than PV Modules and Inverter/Inverters, the system consists of a Battery Bank, Module Mounting Structures, appropriate DC and AC Cables, Array Junction Boxes (AJB) / String Combiner Boxes (SCB), AC and DC Distribution Box, Lightning Arrester, Earthing Systems, Net meter, etc.

The system should be capable for exporting surplus generated solar power into the Grid, whenever the Grid is available and islands/disconnect whenever the grid is not available. The Hybrid power plants shall be capable of giving a battery backup of minimum three hours considering full load operation. The capacities of battery are defined above.

Hybrid Inverter Specifications:

All the Inverters should contain the following clear and indelible Marking Label & Warning Label as per IS16221 Part II, clause 5. The equipment shall, as a minimum, be permanently marked with:

a. The name or trademark of the manufacturer or supplier.
b. A model number, name or other means to identify the equipment.
c. A serial number, code or other markings allowing identification of manufacturing location and the manufacturing batch or date within a three-month time period.
d. Input voltage, type of voltage (A.C. or D.C.), frequency, and maximum continuous current for each input.
e. Output voltage, type of voltage (A.C. or D.C.), frequency, maximum continuous current, and for A.C. outputs, either the power or power factor for each output.
f. The Ingress Protection (IP) rating.
g. The inverter kW rating shall be equal to the plant capacity in kW.

The Hybrid inverter output shall be 415 VAC, 50 Hz, 3 phase or 230 VAC, 50 Hz, 1 phase as per client requirement.

The hybrid inverter should fulfill all technical requirements for grid connection, including the option to

enable/disable export to the grid. Additionally, it should provide intentional islanding capabilities and have the facility to connect to a battery bank.

The Hybrid inverter shall include appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of inverter component failure or from parameters beyond the inverter's safe operating range due to internal or external causes.

The Technical Specification of Hybrid Inverters are summarized below:

Specifications of Inverters	
Parameters	**Detailed specification**
Nominal voltage	230V/415V
Voltage Band	Between 80% and 110% of V nominal
Nominal Frequency	50 Hz
Operating Frequency Range	47.5 to 50.5 Hz
Waveform	Sine wave
Harmonics	AC side total harmonic current distortion < 3%
Ripple	DC Voltage ripple content shall be not more than 1%
Efficiency	Efficiency shall be >90%
Casing protection levels	Degree of protection: Minimum IP-54 for internal units and IP-65 for outdoor units
Operating ambient Temp range	-10 to + 60 degree Celsius
Operation	Completely automatic including wakeup, synchronization (phase locking) and shut down
MPPT	MPPT range must be suitable to individual array voltages
Protections	Over voltage: both input and output Over current: both input and output Over / Under grid frequency Over temperature Short circuit Lightning Surge voltage induced at output due to external source Islanding

Recommended LED indications	ON Grid ON Under/Over voltage Overload Over temperature
Recommended LCD Display on front Panel	DC input voltage DC current AC Voltage (all 3 phases) AC current (all 3 phases) Frequency Ambient Temperature Instantaneous power Cumulative output energy Cumulative hours of operation Daily DC energy produced
Communication Interface	RS485/ RS232/Wi-Fi (with or without USB)

The Technical Specification for Interconnection are summarized below:

Sl No,	Parameters	Requirements	Reference
1	Overall conditions of service	Reference to regulations	Conditions for Supply of Electricity
2	Overall Grid Standards	Reference to regulations	Central Electricity Authority (Grid standards) Regulations 2010
3	Equipment	Applicable industry standards	IEC/EN standards
4	Safety and Supply	Reference to regulations, (General safety requirements)	Central Electricity Authority (Measures of safety and electricity supply) Regulations, 2010 and subsequent amendments.

5	Meters	Reference to regulations and additional conditions issued by the commission.	Central Electricity Authority (Installation & operation of meters) regulations 2006 and subsequent amendments
6	Harmonic current	Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519	IEEE 519 relevant CEA (Technical Standards for connectivity of the distributed generation resource) Regulations 2013 and subsequent amendments
7	Synchronization	Photovoltaic system must be equipped with a grid frequency synchronization device, if the system is using synchronizer inherently built in to the inverter then no separate synchronizer is required.	Relevant CEA (Technical Standards for Connectivity of the distributed generation resources) regulations 2013 and subsequent amendments.
8	Voltage	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond the clearing time of 2 seconds, the Photovoltaic system must isolated itself from the grid.	
9	Flicker	Operation of Photovoltaic system should not cause voltage flicker in excess of the limits stated in IEC 61000 or other equivalent Indian standards if any.	

10	Frequency	When the distribution system frequency deviates outside the specified limits (50.5 Hz on upper side and 47.5 Hz on lower side) up to 0.2 sec, the Photovoltaic systems shall automatically disconnect from grid and be in island mode.	Relevant CEA regulations 2013 and subsequent if any, (Technical standards for connectivity of the Distributed generation resource)
11	DC injection	Photovoltaic system shall not inject DC current greater than 0.5% of full rated output at the interconnection point or 1% rated inverter output current into distribution system under any operating conditions.	
12	Power Factor	While the output of the inverter is greater than 50%, a lagging power factor greater than 0.9 shall be maintained.	
13	Islanding and Disconnection	The photovoltaic system in the event of grid failure or voltage or frequency variations must Island/disconnect from the Grid.	

14	Overload and Overheat	The inverter should have the facility to automatically switch off in case of overload or overheat and should restart when normal conditions are restored	

The IEC Certifications of Inverters are summarized below:

Standard	Description
IEC 61683	Photovoltaic systems – Power conditioners – Procedure for measuring efficiency
IEC 61727 or VDE-AR-N 4105	Photovoltaic (PV) systems- Characteristics of the utility interface
IEC/EN 62109-1	Safety of power converters for use in photovoltaic power systems – Part 1: General requirements
IEC/EN 62109-2	Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for inverters
IEC/EN 61000-3-3/ 3-11/ 3-5	Electromagnetic compatibility (EMC) – Part 3-11; Limits; Limitation of Voltage Change, Voltage Fluctuations and Flicker in Public Low- Voltage Supply Systems; Rated Current <16A / >16A and <75A / >75A per Phase respectively
IEC/EN 61000-3-2/ -3-12/ -3-4	Electromagnetic compatibility (EMC) – Part 3-12; Limits; Limits for Harmonic Currents produced by equipment connected to the public low voltage systems with Rated Current <16A / >16A and <75A / >75A per Phase respectively
*IEC/EN 61000-6-1 / 6-2	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for residential and commercial / industrial environments

*IEC/EN 61000-6-3 / 6-4	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for residential and commercial / industrial environments

IEC 62116 /IEEE 1547 or IEEE 1547.1 / UL 1741	Utility-interconnected photovoltaic inverters – Test procedure of islanding prevention measures
IEC 60068-2-1	Environmental testing – Part 2-1: Tests – Test A: Cold
IEC 60068-2-2	Environmental testing – Part 2-2: Tests – Test B: Dry heat
IEC 60068-2-14	Environmental testing – Part 2-14: Tests – Test N: Change of temperature
IEC 60068-2-30	Environmental testing – Part 2-30: Tests – Test Db:, Damp heat, cyclic (12 h + 12 h cycle)

***Recommended but not mandatory**

The operation of this solar system is summarized below with presenting some common scenarios:

Operation of the system according to different supply scenarios

Condition	Operation Philosophies
• Solar available • Grid available • Battery fully charged	• Normal On-grid operation • Loads supported by solar and grid as necessary
• Solar available • Grid available • Battery not fully charged	• Normal On-grid operation • Solar used first for charging battery • Excess solar used to support loads in combination with grid
• Solar available at low capacity • Grid available • Battery not fully charged	• Normal On-grid operation • Solar used for charging battery • Grid charges battery in combination with solar • Loads supported by grid
• Solar available at high capacity • Grid available • Battery fully charged	• Solar used for all loads • Excess solar exported to grid • Battery stored energy cannot export to the grid
• Solar available • Grid not available • Battery fully charged	• Solar used for all loads • Battery stored energy used to support loads till battery gets discharged
• Solar not available • Grid available • Battery fully charged	• Grid supports loads

• Solar not available • Grid available • Battery not charged	• Grid supports loads and charges the battery to pre-designed level
• Solar not available • Grid not available • Battery charged	• Battery supports loads
• Solar not available • Grid not available • Battery not charged	• DG set may operate to support loads (DG set not included in scope of work)

REMOTE MONITORING SYSTEM

Remote Monitoring system with per minute logging of data, GPRS based, viewable on desktop and smart phones. Data must be accessible to UPNEDA.
Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
Remote Monitoring and data acquisition through Remote Monitoring System software at the owner location with service connectivity for online / real time data monitoring / control complete to be supplied and operation and maintenance / control to be ensured by the bidder.

POWER CONSUMPTION:

Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be made open.

PROTECTIONS

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 /IS 2309 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

SURGE PROTECTION

Surge protection shall be provided on both the DC and the AC side of the solar system. The DC surge protection devices (SPDs) shall be installed in the DC distribution box adjacent to the solar grid inverter. The AC SPDs shall be installed in the AC distribution box adjacent to the solar grid inverter. The SPDs earthing terminal shall be connected to earth through the above mentioned dedicated earthing system. The SPDs shall be of type 2 as per IEC 60364-5-53.

EARTHING PROTECTION

(a) Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043- 1987. In addition the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Discom /UPNEDA as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

(b) Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

CABLES

The rate quoted by the bidder shall be inclusive of required AC and DC Cables Length.

Cables of appropriate size to be used in the system shall have the following characteristics:

a) Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards Temp. Range: –10oC to +80oC. Voltage rating 660/1000V

b) For the DC cabling, Solar cables with multi stranded copper conductors XLPE or XLPO insulated and sheathed with the voltage rating of 1000 V DC or higher UV stabilised single core flexible copper cables shall be used. Multi-core cables shall not be used.

c) For the AC cabling, PVC or XLPE insulated and PVC sheathed single or multi-core flexible copper/ aluminium cables shall be used. Outdoor AC cables shall have a UV-stabilised outer sheath.

d) The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 1.0%.

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

f) The DC cables from the SPV module array shall run through a UV-stabilised PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm or through a High Density Poly Ethylene (HDPE) conduit. The conduits shall not run across the path way of the terrace. Flexible corrugated PVC conduits shall not be used.

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

h) All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm. The minimum DC cable size shall be 4.0 mm2copper. The minimum AC cable size shall be 4.0 mm2 copper for up to 10kWp and 16.0mm2 for above 10kWp / required standard size. In three phase systems, the size of the neutral wire shall be equal to the size of the phase wires. The following colour coding shall be used for cable wires

i) DC positive: red (the outer PVC sheath can be black with a red line marking)

j) DC negative: black

k) AC single phase: Phase: red; neutral: black

l) AC three phase: Phases: **red, yellow, blue**; neutral**: black** Earth wires: **green**

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

n)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.

o)Cable lugs and end –ferrules for all cable conductor and wire terminations shall be crimped with crimping pliers and end-ferrule pliers

p)All cable ties shall be UV resistant.

q)The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25years

r) The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

TOOLS & TACKLES AND SPARES:

After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose.

DANGER BOARDS AND SIGNAGES:

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery –cum- control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with UPNEDA/ owner.

FIRE EXTINGUISHERS:

The firefighting system for the proposed power plant for fire protection shall be consisting of: Portable fire extinguishers in the control room for fire caused by electrical short circuits Sand buckets in the control room The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

DRAWINGS & MANUALS:

Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied.

PLANNING AND DESIGNING:

The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor.

SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT

The Solar PV system on the rooftop of the selected buildings will be installed for meeting the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs

SAFETY MEASURES:

The bidder 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 etc.

DC Combiner Box

A DC Combiner Box shall be used to combine the DC cables of the solar module arrays with DC fuse protection for the outgoing DC cable(s) to the DC Distribution Box.

DC Distribution Box

A DC distribution box shall be mounted close to the solar grid inverter. The DC distribution box shall be of the thermo-plastic IP65 DIN-rail mounting type and shall comprise the following components and cable terminations:

Incoming positive and negative DC cables from the DC Combiner Box;

DC circuit breaker, 2 pole (the cables from the DC Combiner Box will be connected to this circuit breaker on the incoming side);

DC surge protection device (SPD), class 2 as per IEC 60364-5-53;

Outgoing positive and negative DC cables to the solar grid inverter.

As an alternative to the DC circuit breaker a DC isolator may be used inside the DC Distribution Box or in a separate external thermoplastic IP 65 enclosure adjacent to the DC Distribution Box. If a DC isolator is used instead of a DC circuit breaker, a DC fuse shall be installed inside the DC Distribution Box to protect the DC cable that runs from the DC Distribution Box to the Solar Grid Inverter.

AC Distribution Box

An AC distribution box shall be mounted close to the solar grid inverter. The AC distribution box shall be of the thermos plastic IP65 DIN rail mounting type and shall comprise the following components and cable terminations:

Incoming 3-core / 5-core (single-phase/three-phase) cable from the solar grid inverter

AC circuit breaker, 2-pole / 4-pole AC surge protection device (SPD), class 2 as per IEC 60364-5-53

Documentation

The Installer shall supply the following documentation:

- System description with working principles.
- System single line diagram.
- Solar PV array lay-out.
- Routing diagram of cables and wires.
- Data sheets and user manuals of the solar PV panels and the solar grid inverter.
- A system operation and maintenance manual.
- Name, address, mobile number and email address of the service centre to be contacted in case of failure or complaint.
- Warranty cards.
- Maintenance registers.

Test Certificates and Reports to be Furnished

Test Certificates / Reports from IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard for quoted components shall be furnished. Type Test Certificates / reports shall be provided for the solar modules and solar grid tied inverters up to 20kW to provide evidence of compliance with standards. For solar grid tied inverters above 20kW, self- certification by the manufacturer of the said inverter is acceptable.

General Instructions

Security, safety, watch, and ward of all materials at sites shall be the responsibility of the Contractor/Bidder

Expenses for any other works, supply of material, and providing services required for the successful commissioning and operation of the plant, but not specifically mentioned in this document.

Safety management to be strictly complied with by the Contractor/Bidder throughout implementation activity.

First-aid medical facilities at the Site during construction to be provided by the Contractor/ Bidder(s)

All local labour, employment, and other issues shall be handled independently by the Contractor/ Bidder(s)

The entire responsibility and risk relating towards the workforce working at the Site, and compliance of different statutory regulations like Workman Compensation Act, Employees" State Insurance Corporation (ESIC), Factory Act 1948, Contract Labour Regulation, and Abolition Act 1970, Shop and Establishment Act 1948, and other Statutory regulatory bodies shall solely lie with the Contractor/ Bidder(s).

The Contractor/ Bidder(s) shall also be solely responsible for payment of wages, provident fund, bonus, retrenchment compensation leave, etc. applicable as per various statutory regulations to their entire workforce,

The following Statutory Clearances shall be obtained by the/Bidder(s) wherever applicable:

- Drawings approvals from UPNEDA .
- Electrical Safety approval for system more than 10 KW (Chief Electrical Inspector)
- All equipment, accessories, materials, civil construction & erection works should comply with statutory requirements, BIS and required and highlighted IEC standards

.The Contractor/ Bidder(s) should not misuse the area and/or assign responsibility for the safety of machinery within the premises.

Term

The term for operation and maintenance of the plant may be extended for another five years on mutually agreed terms and conditions and charges.

Electricity Generation

The Contractor/Bidder shall be solely responsible for the performance of the plant(s) and shall make all necessary efforts to maximize the electricity generation of the plant.

Metering and associated facilities

The metering of electricity shall be carried out as per the regulations stipulated by Uttar Pradesh Electricity Regulatory Commission and/or Central Electricity Authority.

Failure to rectify the problem

If the Contractor/ Bidder(s) fails to rectify the plant downtime within seven (7) days from the date of identification of such defect, unless the extension in time is mutually discuss and agreed between the bidder and the respective Beneficiary.

If the Contractor/Bidder(s) fails to rectify the problem, the respective Beneficiary shall/may rectify the problem at the expense of the Contractor/ Bidder(s), in such case on genuine complaint, UPNEDA will take appropriate action including forfeiture of PBG and blacklisting/debarring of the firm.

Completion of Term

On completion of the term of Operation and Maintenance the Contractor/ Bidder(s) shall apply to the respective Beneficiary for the issue of power plant performance certificate. Such document is required for release of PBG of the firm.

NET METERING AND UTILITY INTERCONNECTION:

As per UPERC Notification No. U.P.E.R.C./Secretary/RSPV Regulations/002 Dated: November 17, 2023, U.P.E.R.C. (Rooftop Solar PV Grid Interactive System Gross/Net Metering) Regulation, 2019 (Second Amendment) has kept provision of Net metering scheme shall also be available to following consumer categories mentioned in Rate Schedule for FY 2023-24 in Tariff Orders dated May 24, 2023 of Distribution Licensees (MVVNL, PVVNL, PuVVNL, DVVNL, KESCO & NPCL).
(I) All Public Institutions covered under LMV-4A consumer category of the Rate Schedule except such consumers which are covered under LMV-4A(c) as provided in the Rate Schedule.
(II) Private research institutes, and schools /colleges/educational institutes covered under Private Institutions under LMV-4B consumer category of the Rate Schedule.
(III) Public Institutions akin and similar to those mentioned in (I) above but covered under HV-1 consumer category of Rate Schedule.
(IV) Private Institutions akin and similar to those mentioned in (II) above but covered

"Net Metering" means an arrangement for measurement of energy in a system under which rooftop solar PV system installed at eligible consumer's premises [as above] delivers surplus electricity, if any, to the Distribution Licensee after off-setting the electricity supplied by Distribution License during the applicable billing period.

Energy Accounting and Settlement shall be as per the UPERC Regulation 2019 and amendment thereof.

Standards and Limits

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

Standards and Limits

PARAMETER	REFERENCE	REQUIREMENT
Service conditions	Relevant regulation/order by Uttar Pradesh Electricity Regulatory Commission	Compliance
Overall Grid Standards	Central Electricity Authority (Grid Standard) regulations 2010	Compliance
Equipment	BIS / IEEE / IEC	Compliance
Meters	Central Electricity Authority(Installation and Operation of Meters) Regulation 2013 & relevant regulations by Uttar Pradesh Electricity Regulatory Commission	Compliance
Safety and Supply	Central Electricity Authority(Measures of Safety and Electricity Supply) Regulation 2010	Compliance
Harmonic Current	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

Synchronization	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.
Voltage	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% to110% of the nominal connected voltage. Beyond a clearing time of 2 second, the photovoltaic system must isolate itself from the grid.
Flicker	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Regulations 2013 Resources)	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.
Frequency	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
DC injection	IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources). Regulations 2013	Photovoltaic system should not inject DC power more than0.5% of full rated output at the interconnection point under any operating conditions
Power Factor	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.
Islanding and Disconnection	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
Overload and Overheat	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

Paralleling Device	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.

Notes for Bidder:

1. The installation should not be protruding outside the building and there should not be overhang type structure on any terrace.
2. Location and area for inverter and other interconnection equipment should be located in suitable and secure place and this should be approved by the respective Beneficiary.
3. Installation diagram and wiring from array to proposed location of inverter and interconnection should be clearly presented by the Bidder before work starts to UPNEDA.

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

Quality certification and standards for grid-connected rooftop 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 rooftop solar PV system/ plant must conform to the relevant standards and certifications given below:

Solar PV Modules/Panels	
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 (NH3) 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
Solar PV Inverters	
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/IS 61683	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
Fuses	
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 10 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

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: 03/UPNEDA/ On-grid Hybrid Solar Rooftop (11kW-50kW)/2024-25

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 On-grid Hybrid Solar Rooftop 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 power of attorney **(Applicable Only in case of Consortium/JV)**
m. **Form M:** FORMAT FOR CONSORTIUM/JOINT VENTURE AGREEMENT
n. **Form N:** Format for Joint Commissioning and Handing over certificate /Warrantee Card.
o. **Form O:** Format: Technical Bid
p. 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.
q. 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 enclose d.
r. Copy of Certificate of Incorporation.
s. Copy of the GST number of the firm.
t. Copy of Permanent Account Number (PAN) issued by IT department.
u. 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.
v. Memorandum and Article of Association
w. 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

Key Information		
1	Name of Bidder	
2	Postal Address	
3	Mobile no.	
4	Telephone, Telex, Fax No	
5	E-mail	
6	Web site	
7	Name, designation and Mobile Phone No. of the representative of the Bidder to whom all references shall be made	
8	Name and address of the Indian/foreign Collaboration if any	
9	Have anything/extra other than price of items (as mentioned in price Schedule) been written in the price schedule.	
10	Have the Bidder to pay arrears of income tax. If yes up to what amount?	
11	Have the Bidder ever been debarred By any Govt. Deptt./ Undertaking for undertaking any work?	
12	Details of offer (please mention number of pages and number of Drawings in the hard copy)	
13	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	**Tender Fee &Earnest Money**	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 of 2 % of Estimated Cost.	Bank Guarantee	As Annexure-1
2	**Company Eligibility**	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. Bidders can be sole/ single bidder OR Joint venture (JV) or Consortium of two or more firms as partners, All the partners of the JV/ Consortium must meet collectively 100% of Technical & Financial Eligibility Conditions. **(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	**Test Report**	Bidder should have valid Test report of **complete system/various components (PV module, Hybrid inverter, Battery, complete system etc)** issued from MNRE authorized testing center or NABL accredited test lab. **The test report should be valid and not older than April 2022.**	Test report of MNRE/NABL accredited lab---------- ---------- Manufacturer Authorization Certificate of Main components (i.e. PV Module, Battery & Hybrid Inverter) of Hybrid Solar Power Plant.	• Test report no: • Issuing date: • Name of Lab:

Sr. No.	Eligibility Criteria	Particulars	Documents to be submitted	Particulars in brief of the Documents to be submitted by the Bidder.
		Authorization Letter in the name of Bidder issued from OEM.		
4	**GSTIN**	A copy of valid GSTIN registration certificate	Valid GSTIN Registration Certificate	Issuing date:
5	**Financial Turnover**	Bidders should have Overall Average Annual Turnover (ATO) in the best performing three year of last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be at least 30% of the tender cost i.e. **Rs 13.20 crores**. Out of above mentioned five years, best performing three years will be considered for evaluation of Average Annual Turnover. (For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover or All the partners of the JV/ Consortium must meet collectively. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).	Duly authorized copy of audited annual report/Balance Sheet for last five years is to be submitted by respondent along with CA certificate.	M/s _____ 2019-2020:..... 2020-2021:..... 2021-2022:..... 2022-2023:..... 2023-2024:..... Average turnover Rs….....
6	**Technical Experience**	**Past Performance:** The Bidder should have continuously supplied and installed Solar Rooftop Power Plant for 30% of bid quantity, i.e 6**00 kW,** in last Five financial years i.e. 2019-20, 2020-21, 2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company. (If Bidder provides work experience regarding supply, installation and commissioning from company, bidder must provide the certificate of incorporation of respective company.	Work order copies/ LoA's/Completion Certificates from registered central/state (including local body or autonomous institutions working under it.) / Company.	As per Annexure-5
7	**Net worth**	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	

Sr. No.	Eligibility Criteria	Particulars	Documents to be submitted	Particulars in brief of the Documents to be submitted by the Bidder.
			submitted along with a practicing CA's certificate.	
8	**Notarized Affidavit by the Bidder**	1. An undertaking that the service centers will be opened in allotted district and list will be submitted before supply and installation for verification	A notarized affidavit Should be submitted on non-judicial stamp paper.	
		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)		
		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)		
		4. All the information and documents submitted in the Bid are correct		
		5. General and specific/Technical terms of contract are acceptable to Bidder in to without any deviation.		
9.	**Technical Bid**	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 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, erection, testing and commissioning including comprehensive warranty maintenance for 5 years of 11 kW to 50 kW On-grid Hybrid Solar Rooftop Power Plant with Battery backup for captive use (Capex Mode) in various Government buildings at various places 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	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. Bidders can be sole/ single bidder OR Joint venture (JV) or Consortium of two or more firms as partners, All the partners of the JV/ Consortium must meet collectively 100% of Technical & Financial Eligibility Conditions. **(System integrators are also allowed to participate in the bid.)**		
2	Bidder should have valid Test report of complete system/various components (PV module, Hybrid inverter, Battery, complete system etc) issued from MNRE authorized testing center or NABL accredited test lab. **The test report should be valid and not older than April 2022.** Authorization Letter in the name of Bidder issued from OEM.		
3	**Past Performance:** The Bidder should have continuously supplied and installed Solar Rooftop Power Plant for 30% of bid quantity, i.e **600 kW,** in last Five financial years i.e. 2019-20, 2020-21, 2021-2022, 2022-2023 and 2023-2024 to any Central/State Govt. Organization (including local body or autonomous institutions working under it.) /Company. (If Bidder provides work experience regarding supply, installation and commissioning from company, bidder must provide the certificate of incorporation of respective company.		
4	The Bidder should have valid GSTIN registration certificate. A copy of which should be enclosed.		
5	**Bidder Turn over Criteria:** Bidders should have Overall Average Annual Turnover (ATO) in the best performing three year of last five financial year i.e, 2019-2020, 2020-2021, 2021- 2022, 2022-2023 and 2023-2024 must be at least 30% of the tender cost i.e. **Rs 13.20 crores**. Out of above mentioned five years, best performing three years will be considered for evaluation of Average Annual Turnover. (For FY 2023-24, provisional Balance sheet applicable if not audited.) This must be the individual Company's turnover or All the partners of the JV/ Consortium must meet collectively. (A summarized sheet of average turnover certified by registered CA should be submitted along with audited Balance Sheet).		

Sr. No.	Particulars	Details Furnished by the Bidder	Documentary Evidence Provided (Y/N)
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)	Capacity (kW)	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 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

(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 I: 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 executers, 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 J: 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 K: 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 presencePursuant to Board ofDirector'sResolutiondated……..(BoardofDirector'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 Form L: FORMAT FOR POWER OF ATTORNEY

(Applicable Only in case of Consortium/JV)

(To be provided by each of the other members of the Consortium/JV in favor of the Lead Member) **(***To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of Appropriate Value***)*** ***(The term "Consortium" in this draft may be replaced with "Joint Venture" in case of Bidders participating in a JV)***

KNOW ALL MEN BY THESE PRESENTS THAT M/s..... having its

registered office at ……., …., and M/s ……. having its registered office at , (Insert names and registered offices of all Members of the Consortium) the Members of Consortium have formed a Bidding Consortium named ……. (Insert name of the Consortium if finalized) (hereinafter called the 'Consortium') vide Consortium Agreement dated……..…….……and having agreed to appoint M/s…….…….…….……...…as the Lead Member of the said Consortium do hereby constitute, nominate and appoint M/s……..……..a company incorporated under the laws of ……..……and having its Registered/ Head Office at ……..…..…….as our duly constituted lawful Attorney (hereinafter called as Lead Member) to exercise all or any of the powers for and on behalf of the Consortium in regard to submission of the response to Bid No……..……..

We also authorize the said Lead Member to undertake the following acts:

i) To submit on behalf of Consortium Members response to Bid.
ii) To do any other act or submit any information and document related to the above response to Bid.

It is expressly understood that in the event of the Consortium being selected as Successful Bidder, this Power of Attorney shall remain valid, binding and irrevocable until the Bidding Consortium achieves commissioning of the awarded production capacity.

We as the Member of the Consortium agree and undertake to ratify and confirm all whatsoever the said Attorney/ Lead Member has done on behalf of the Consortium Members pursuant to this Power of Attorney and the same shall bind us and deemed to have been done by us.

IN WITNESS WHEREOF M/s....., as the Member of the Consortium have executed these presents on this…….day of..... under the Common Seal of our company.

For and on behalf of Consortium Member M/s…….…….…….…….----------

---------- (Signature of person authorized by the board)

Name-

Designation-

Place:

Date:

Accepted

- -

(Signature, Name, Designation and Address of the person authorized by the board of the Lead Member)

Attested

- - - - - - - - - - - - - -

(Signature of the executant)

- - - - - - - - - - - - - - - - - - - -

(Signature & stamp of Notary of the place of execution)

Place:..... Date: .....

Original Members (i.e. members as mentioned at the time of application) of the Consortiumshall collectively have the controlling shareholding in the Company.

11.13 FORM M FORMAT FOR CONSORTIUM/JOINT VENTURE AGREEMENT

(*To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of Appropriate Value*)***(The term "Consortium" in this draft may be replaced with "Joint Venture" in case of Bidders participating in a JV)***

THIS Consortium/Joint Venture (JV) Agreement ("Agreement") executed on this_____Day of

_____Two Thousand_____between M/s_____ _____[*Insertname of Lead Member*] a Company incorporated under the laws of_____and having its Registered Office at _____ (hereinafter called the "**Member-1**", which expression shall include its successors, executors and permitted assigns)and M/s_____a Company incorporated under the laws of _____ and having its Registered Office at _____ (hereinafter called the "**Member-2**", which expression shall include its successors, executors and permitted assigns), M/s _____ a Company incorporated under the laws of _____ and having its Registered Office at _____ (hereinafter called the "**Member-n**", which expression shall include its successors, executors and permitted assigns), [*The Bidding Consortium/JV should list the details of all the Consortium/JV Members*] for the purpose of submitting response to Bid against Bid No. _____dated_____issued by Uttar Pradesh New & Renewable Energy Development Agency (UPNEDA) an agency set up under Societies Act and having its office at Vibhuti Khand, Gomti Nagar, Lucknow-226010.

WHEREAS, each Member individually shall be referred to as the "Member" and all of the Members shall be collectively referred to as the "Members" in this Agreement.

WHEREAS, UPNEDA had invited response to Bid vide its Bid dated _____.

WHEREAS the Bid stipulates that in case response to Bid is being submitted by a Bidding Consortium/JV, the Members of the Consortium/JV will have to submit a legally enforceable Consortium/JV Agreement in a format specified by UPNEDA wherein the Consortium/JV Members have to commit equity investment of a specific percentage for the Project.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

In consideration of the above premises and agreements all the Members in this Bidding Consortium/JV do hereby mutually agree as follows:

1. We, the Members of the Consortium/JV and Members to the Agreement do hereby unequivocally agree that Member-1 (M/s), shall act as the Lead Member as defined in the Bid for self and agent for and on behalf of Member-2, , Member-n and to submit the response to the Bid.

2. The Lead Member is hereby authorized by the Members of the Consortium/JV and Members to the Agreement to bind the Consortium and receive instructions for and on their behalf.

3. Notwithstanding anything contrary contained in this Agreement, the Lead Member shall always be liable for the equity investment obligations of all the Consortium Members i.e. for both its own liability as well as the liability of other Members.

4. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all of their respective equity obligations. Each Member further undertakes to be individuallyliable for the performance of its part of the obligations without in any way limiting thescope of collective liability envisaged in this Agreement.

5. Subject to the terms of this Agreement, the share of each Member of the Consortium inthe issued equity share capital of the Project Company is/shall be in the following proportion:

Name	**Percentage**
Member 1	---
Member 2	---
Member n	---
Total	100%

We acknowledge that the controlling shareholding (having not less than 51% of the voting rights and paid up share capital) in the Project Company developing the Project shall be maintained till the commissioning of Production Unit.

6. The Lead Member, on behalf of the Consortium, shall inter alia undertake full responsibility for liaising with Lenders or through internal accruals and mobilizing debt resources for the Project.

7. In case of any breach of any equity investment commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.

8. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and equity investment obligations thereto shall not in any way be a limitation of responsibility of the Lead Member under these presents.

9. It is further specifically agreed that the financial liability for equity contribution of the Lead Member shall not be limited in any way so as to restrict or limit its liabilities. The Lead Member shall be liable irrespective of its scope of work or financial commitments.

10. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at Lucknow alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.

11. It is hereby further agreed that in case of being selected as the Successful Bidder, the Members do hereby agree that they shall furnish the Performance Guarantee in favour of UPNEDA in terms of the Bid.

12. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to Bid.

13. It is hereby expressly understood between the Members that no Member at any given point of time, may assign or delegate its rights, duties or obligations under this Bid except with prior written consent of UPNEDA.

14. This Agreement

    a) has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
    b) sets forth the entire understanding of the Members hereto with respect to the subject matter hereof; and
    c) may not be amended or modified except in writing signed by each of the Members and with prior written consent of UPNEDA.

15. All the terms used in capitals in this Agreement but not defined herein shall have the meaning as per the UPNEDA.

IN WITNESS WHEREOF, the Members have, through their authorized representatives, executed these present on the Day, Month and Year first mentioned above.

For M/s [Member 1]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated…….)

Witnesses:

1) Signature----------

Name:

Address:

2) Signature ----------

Name:

Address:

For M/s [Member 2]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated

_____)

Witnesses:

1) Signature ----------	2) Signature ----------
Name:	Name:
Address:	Address:

For M/s.....[Member n]

- -

(Signature, Name & Designation of the person authorized vide Board Resolution Dated)Witnesses:

1) Signature ----------	(2) Signature ----------
Name:	Name:
Address:	Address:

Signature and stamp of Notary of the place of execution

11.14 FORM N 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/Institution/Owner.	
	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 Sr. No Make Model	
	Battery Sr. No Make	

	Model Capacity	
	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)

11.15 Form O: Technical Bid: To be submitted with Technical bid

Sr. No	Description	To be furnished by the Contractor/Bidder
A	**Solar PV Module**	
	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	**Battery (Li-Fe-Po4)**	
	Make of battery pack	
	Make of cell	
	Capacity of Battery	
	Capacity of each cell of battery	
	No of cell	
	Design Cycle Life of battery	
	Capacity of Battery at C1/10 rate	
	Max DOD	
C	**Solar Hybrid Inverter**	
	Manufacturer :	
	Type String type/central	
	Operating voltage (DC)	

Sr. No	Description	To be furnished by the Contractor/Bidder
	Operating voltage AC (pure sine wave)	
	Details of Indicators provided	
	Details of Protections provided	
	Battery Over charge set value	
	Deep discharge set value	
	Others	

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