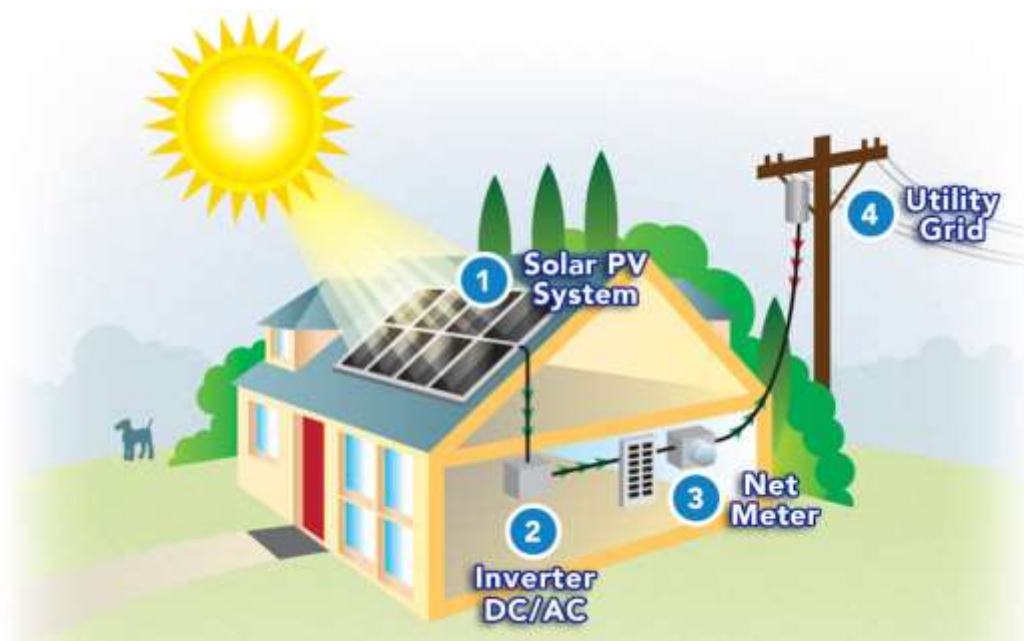


e-TENDER DOCUMENT

FOR

Rate Contract and empanelment of firms for Grid Connected Rooftop Solar Power Plants for the Design, manufacture, supply, erection, testing and Commissioning including 5 years comprehensive warranty maintenance of 1 kWp to 25 kWp under the Grid Interactive Rooftop Solar Power Plants of MNRE Phase-II and the Solar Power Policy of the State of Uttar Pradesh in various places in the State of Uttar Pradesh.

e-tender No.- **01/UPNEDA/SPV/GCRT/2019-20**



Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)

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

VibhutiKhand, Gomti Nagar, Lucknow, U. P.

Tel.No. 91-0522-2720652, TeleFax: 0522-2720779, 2720829

Website: www.upneda.org.in e-mail: compneda@rediffmail.com

2. DEFINITIONS

The words and expressions beginning with capital letters and defined in the E-Tender document set up under the Electricity Act 2003;

"**B.I.S**" shall mean specifications of Bureau of Indian Standards (BIS);

"**Bids**" shall mean the Technical Bid and the Financial Bid submitted by the Bidder electronically at the prescribed web portal, in response to the e-bid document, in accordance with the terms and conditions hereof;

"**Bid Deadline**" shall mean the last date and time for submission of Bid in response to the e-bid document, and as may have been extended in accordance with the e-bid document;

"**Bidding Company**" shall refer to such single company that has submitted the Bid in accordance with the provisions of the e-tender document;

"**Bid Validity**" shall have the meaning ascribed to it in Clause 3.6

"**Bid Capacity**" shall mean capacity offered by the bidder in his Bid under invitation.

"**CEA**" shall mean Central Electricity Authority.

"**Commissioning**" means Successful operation of the Project / Works by the Contractor, for the purpose of carrying out Performance Test(s) as defined in tender document.

"**Capacity Utilization Factor**" (CUF) shall mean the ratio of actual energy generated by SPV project over the year to the equivalent energy output at its rated capacity over the yearly period.
 $CUF = \text{actual annual energy generated from the plant in kWh} / (\text{installed plant capacity in kW} * 365 * 24).$

"**Consents, Clearances and Permits**" shall mean all authorizations, licenses, approvals, registrations, permits, waivers, privileges, acknowledgements, agreements, or concessions required to be obtained from or provided by any concerned authority for the purpose of installation of the generation plant or captive consumption of such generation;

"**Earnest Money Deposit**" shall mean the unconditional and irrevocable bank guarantee of an amount as mentioned in this document, to be submitted along with the Bid by the Bidder as prescribed in this tender document;

"**Electricity**" means the electrical energy in kilowatt hours;

"**Electricity Act 2003**" shall mean the Electricity Act, 2003 and any rules, amendments, regulation, notifications, guidelines or policies issued there under from time to time;

"**Financial Bid**" shall mean the e-Bid, containing the Bidder's Quoted Capital Cost for in the Part -B of the e-bid document;

"**IEC**" shall mean specifications of International Electro-technical Commission;

"**kWp**" shall mean kilo-Watt Peak;

"**kWh**" shall mean kilo-Watt-hour;

"**MNRE**" shall mean Ministry of New and Renewable Energy, Government of India;

“Minimum Bid Capacity” shall mean for **established firm which** is the minimum capacity for which the Bidder can submit its Bid. Bidder(s) quoting less the minimum bid capacity shall be out-rightly rejected;

"O&M" shall mean Operation & Maintenance of Rooftop Solar PV system for 5 years;

“Owner of the project” shall mean anyone who has ownership (including lease ownership also) of the roof and is the legal owner of all equipment's of the project.

“Plant” shall mean rooftop solar photovoltaic power generation plants implemented on the individual site;

“PV” shall mean photovoltaic;

“Eligibility Conditions” shall mean the qualification requirements set forth in Clause 1.1

“Quoted Capital Cost” shall mean the capital cost requirement, in Wp, quoted by the Bidder in accordance with the prescribed Format B and shall be construed to have considered the capital cost for Design, Supply, Installation, Testing and Commissioning of Grid Connected Rooftop Solar Photovoltaic Power Plants including its Operation and Maintenance for five (5) years. The quoted capital cost shall also include development of necessary evacuation infrastructure and its Operation and Maintenance;

“Rs. or ₹” shall mean Indian rupees;

“UPERC” means the Uttar Pradesh Electricity Regulatory Commission constituted under Section 82 of the Electricity Act 2003 for the State of Uttar Pradesh;

“UP Electricity Grid Code” or **“Grid Code”** or **“UPEGC”** shall mean the document notified by the UPERC describing the responsibilities for planning and operation of the power system in Uttar Pradesh in 2007 and as amended from time to time;

“Performance Ratio” (PR) means

“Performance Ratio” (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured. $PR = (\text{Measured output in kW} / \text{Installed Plant capacity in kW}) * (1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2)$.

“Security Deposit/Performance Guarantee” shall mean the bank guarantee to be provided from a Selected Bidder to the UPNEDA in accordance with the prescribed Format in this bid document.

“Successful Bidder(s) /Contractor/Project Developers(s)” shall mean the Bidder(s) selected by UPNEDA pursuant to this TENDER for Implementation of Grid Connected Roof Top Solar PV System as per the terms of this document, and to whom an Allocation Letter has been issued;

“Wp” shall mean Watt Peak.

“1KWp for the purpose of conversion in **Wp** shall be considered as 1000Wp

e-tender Notice

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

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

Vibhuti Khand, Gomti Nagar, Lucknow

TeleFax: 0522-2720779, 2720829

Website:www.upneda.org.in E-Mail: compneda@rediffmail.com

UPNEDA invites Online Bids from Prospective Bidders through e-tendering for Rate discovery and empanelment of firms for Grid Connected net metering Rooftop Solar Power Plants for the Design, manufacture, supply, erection, testing and Commissioning including 5 years comprehensive warranty maintenance of 1 kWp to 25 kWp under the Grid Interactive Rooftop Solar Power Plants of MNRE and the Solar Power Policy of the State of Uttar Pradesh in various places in the State of Uttar Pradesh.

Sl No	Name of Work	Capacity	Tender fees
1	Rate Contract and empanelment of firms for Grid Connected Rooftop Solar Power Plants for the Design, manufacture, supply, erection, testing and Commissioning including 5 years comprehensive warranty maintenance of 1 kWp to 25 kWp under the Grid Interactive Rooftop Solar Power Plants of MNRE and the Solar Power Policy of the State of Uttar Pradesh in various places in the State of Uttar Pradesh.	The tentative capacity is 60 MW subject to MNRE allocation for the current year. The final capacity shall be as per MNRE allocation.	25000.00 + 18% GST =29500.00

The tender document is available at e-Procurement website <http://etender.up.nic.in>. Interested bidders may view, download the e-Bid document, seek clarification and submit their e-Bid online up to the date and time mentioned in the table below:

(a)	Pre-Bid meeting	24.9.2019 up to 11.30 AM
(b)	e-Bid submission end date & Time	8.10.2019 up to 6.30 PM
(c)	Online technical e-Bid opening date & time	9.10.2019 at 11.30 AM
(d)	Online financial e-Bid opening date & time (Only of technically qualified bidders)	15.10.2019 at 3.30 PM
(e)	Venue of pre bid, opening of technical & financial e-Bid	UPNEDA Head Office, Vibhuti Khand, Gomti Nagar,Lucknow-226010

The bidders need to submit the proof/cost of e-Bid document fees and EMD as stated in the table A through Demand Draft as bid documents fees and bank guarantee as EMD in favour of Director Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA), payable at LUCKNOW. The scanned copy of the Demand Draft and Bank guarantee must be enclosed along with the e -Bids. The original Demand Draft and bank guarantee along with the hard copy of the first Part of the tender document with enclosures duly signed by bidders must reach the office of UPNEDA at Vibhuti Khand, Gomti Nagar Lucknow before opening date and time of technical e -Bid failing which, tender shall not be considered. Numbers of the system mentioned as above, may increase or decrease. Director, Uttar Pradesh New and Renewable Energy Development Agency, (UPNEDA) reserves the right to reject any or all tenders without assigning any reason thereof. The decision of Director UPNEDA will be final and binding.

**Director
UPNEDA**

3.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- U. P.

Subject: - Offer in response to e-tender specification No: **01/UPNEDA/SPV/GCRT/2019-20**
Sir,

We hereby submit our offer in full compliance with terms & conditions of the above e-tender. A copy of the e-tender (except financial bid), duly signed on each page along with all enclosure is also submitted as a proof of our acceptance of all specifications as well as terms/ Conditions.

We confirm that, we have the capability for supplying, installation, testing and commissioning of Grid connected Rooftop Solar PV Power Plant with power evacuation system-including meters and other necessary infrastructures including 5 years Operation, Comprehensive warranty & maintenance of Solar Grid connected Rooftop PV Power Plants including power evacuation system of more than KWp capacity in 11 months. Based on eligibility and capacity to carry out work within the specified time of this bid, we are quoting as per following:

Categories	Capacity in KW
PART-A (1 to 10 KWp)	
PART-B (11-25KW)	
Total	

Accordingly we are depositing the EMD of RS----- in the form of DD/FD/BG valid for----months or Exempted as MSE of Uttar Pradesh based for which certificate from DIC/NSIC is enclosed at annexure----

The e-tender is to be uploaded in two separate files named Part-A for technical bid & Part-B for Financial Bid only.

(Signature of Bidder)
With Seal

4 Check list of Annexure

(The following information/documents are to be annexed and flagged by the Bidders along with the BID)

S.N	Annexure No.	Particulars	Yes/No, Flag No.
1	Annexure-I (a)	Details of Tender document fees (Demand Draft no, date, amount and bank name)	
	Annexure-I (b)	Details of Earnest money (bank guarantee no. and date, (valid for four months)	
2	Annexure-II a	A Registered manufacturing Company/Firm/ Corporation duly incorporated under the relevant laws of its jurisdiction.	
	Annexure-II b	An experience of Design, Supply, Installation, Testing, Commissioning of solar photovoltaic power generating plants rooftop power plants, grid connected and including operation & maintenance grid interactive power plant (on an individual) as a developer of the plant or as an EPC Provider	
	Annexure-II c	cumulative experience of executing >= 100KWp Grid connected SPV Power Plants & /Off-Grid SPV Power Plant in India (A copy of the work order and certificate for commissioning of solar photovoltaic power generating plants ground mounted and/or rooftop power plants, grid connected and/or off-grid to be mandatorily enclosed)	
3	Annexure-III	Following Test Certificates & Reports for components specified in technical bid	
	III (a) III (b) III (c) III (d)	1. SPV Modules a) IEC 61215 edition II/ IS 14286 for Crystalline Modules. b) IEC 61730 Part 1 & 2 c) STC Performance Report –I V curve . IEC test report must be valid till March 2020 and STC performance certificate must be issued after 1 April 2016.	
	III (a)	2. PCU cum Inverters MPPT and Protections-IEC 61683 /IS 61683 & IEC 60068-2 (1,2,14,30)/ equivalent BIS Standard, IEC 62116-2008 and UL 1741 for anti-islanding protection grid interconnectivity and IEC 62109-1 & 2 for electrical safety and parallel operations. The test certificate should be issued after 1 April 2016	
5	Annexure-V	Overall Average Annual Turnover of the Company/Firm/Corporation in the last three financial years i.e 2016-17, 2017-18 and 2018-19 (A summarized sheet of turnover of last three Financial Years certified by registered CA)	
6	Annexure-VI	A copy of valid GST registration certificate.	
7	Annexure-VII	A summarized sheet of cumulative experience in PV Systems /power plants certified by registered CA in format 4	
8	Annexure-VIII	Authorization letter of the Bidder, for the person representing his firm, that he is authorized to discussed with specification mention of this e-	

		tender.	
9	Annexure-IX	Others XIII(i). Affidavit from Firm has not been debarred or Blacklisted by any Government department or undertaking XIII(ii) Minimum Generation details. XIII (iii). -----	
10			

* Please flag the annexure and write flag number in the box. Note:- Bids received without supporting documents for the various requirements mentioned in the tender document may be rejected.

(Signature of Bidder)
With Seal

5 Particulars of e-tender

1	e-tender no.	01/UPNEDA/GCRT/2019-20
2	Particulars of the work	Design Supply, Installation, Testing and Commissioning of Grid Interactive Rooftop Solar Photovoltaic Power Plant and power evacuation system – including meters and other necessary infrastructures including 5 years Operation, Comprehensive Warranty and Maintenance of Grid Interactive Rooftop Solar Photovoltaic Power Plants and power evacuation system in various Districts in the State of Uttar Pradesh
3	Period of Agreement	Rate contract for 12 months,
5	Period of validity of rates for acceptance	3 months from opening of financial bid
8	Place of opening of e-tender	UPNEDA, Head Office, Vibhuti Khand, Gomti Nagar, Lucknow, Uttar Pradesh

1. Bidders are advised to study the tender Document carefully. Submission of e-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.
2. The e-Bid prepared in accordance with the procedures enumerated in ITB Clause 15 of Section-I should be submitted through e-Procurement website <http://etender.up.nic.in>.
3. The e-Bids will be electronically opened in the presence of bidder's representatives, who choose to attend at the venue, date and time mentioned in the above table. An authority letter of bidder's representative will be required to be produced.
4. In the event of date specified for e-Bids opening being declared a holiday for UPNEDA's office then the due date for opening of e-Bids shall be the following working day at the appointed time and place.
5. All the required documents including Price Schedule/BOQ should be uploaded by the e-Bidder electronically in the PDF/XLS format. The required electronic documents for each document label of Technical (Fee details, Qualification details, e-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.
6. The companies/firms who are registered at e-Procurement portal for e-tendering with U.P. Electronics Corporation Ltd. (UPLC), 10, Ashok Marg, Lucknow (UP) would only be eligible for participating in this e-tender. All companies/firms who have not registered themselves with UPLC for e-tendering till date can get their registration done. The companies/firms may contact the UPLC officials on phone numbers 0522-2286809, 0522-2288750 (O) 0522-4130303 (Extn: 303, 304 & 307), for their Registration/Digital Signature Certificate related queries.

(Signature of Bidder)With Seal

6. GENERAL PARTICULARS OF BIDDER

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	Monthly supply capacity (attach supporting document)	
13	Details of offer (please mention number of pages and number of Drawings in the hard copy)	
14	Reference of any other information attached by the tenderer (please Mention no. of pages & no. of drawings)	

(Signature of Bidder)
With Seal

7 DECLARATION BY THE BIDDER

(Regarding e-tender **01/UPNEDA/GCRT/2019-20**)

We _____ (hereinafter referred to as the Bidder) being desirous of e-tendering for the work under the above mentioned e-tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the e-tender document,
DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the e-tender document and agrees with all provisions of the e-tender document.
2. The Bidder is capable of executing and completing the work as required in the e-tender.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the e-tender.
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 e-tender 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 e-tender 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 similar 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 bid of e-tender.
12. The Bidder gives the assurance to execute the e-tendered work as per specifications terms and conditions.
13. The Bidder confirms the capability to Supply, Install, Testing and Commissioning including 5 years Operation ,Comprehensive Warranty and Maintenance of Grid Interactive Rooftop Solar PV Power Plants and power evacuation system – including meters and other necessary infrastructures of actual KWp----- in various Districts in the State of Uttar Pradesh in 11 months of Grid Interactive Solar Rooftop PV Power /Plants and power evacuation system – including meters and other necessary infrastructures .

(Signature of Bidder)
with SEAL

PART-2 : INSTRUCTION TO BIDDERS

SECTION 1: THE TENDER DOCUMENT

1.1 CONTENT OF e-tender DOCUMENT

The e-tender procedure and contract terms are prescribed in the e-tender Documents. In addition to the e-tender Notice the Bidding documents include.

PART A

Part - 1

- 1 e-tender Notice
- 2 Covering Letter
- 3 Checklist of Annexures
- 4 Particulars of e-tender
- 5 General Particulars of Bidder
- 6 Declaration by Bidder

Part – 2 : Instruction to Bidders

- | | |
|------------|-----------------------------------|
| Section -1 | Contents of e-tender document |
| Section-2 | Bidder to inform fully |
| Section -3 | Eligibility condition |
| Section-4 | Preparation of e-tender |
| Section-5 | Submission of e-tender |
| Section -6 | e-tender opening and evaluation |
| Section-7 | Procedure for Finalisation of Bid |

Part – 3 : General Condition of Contract

Part – 4 : Scope of Work & Technical specifications

Part – 5 : Details of Warranty

Part – 6 : Technical Bid

PART B

Financial Bid

The Bidder is expected to examine all instructions, forms, terms and specifications as mentioned in the e-tender document. Failure to furnish all information required by the e-tender documents or submission of a bid not substantially responsive to the Tender document in every respect will be at the Bidder's risk and is likely to result in out-right rejection of the e-tender .

1.2 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.

1.3 CLARIFICATION:

- I. A prospective Bidder requiring any clarification of the e-tender Documents may contact UPNEDA in writing through mail or by Fax at the UPNEDA's mailing address indicated in this tender by 25.9.2019 up to 5.00 PM.
- II. All are requested to remain updated with the website. 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
- III. The UPNEDA is not under any obligation to entertain or respond to suggestions made or to incorporate modifications sought for.

1.4 AMENDMENT OF e-tender DOCUMENTS

At any time prior to the submission of the e-tender 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 websites: <http://neda.up.nic.in>.and <http://etender.up.nic.in>. All are requested to remain updated with the website. No separate reply/ intimation will be given elsewhere.

- 1.5 The Bidder shall make independent enquiry and satisfy itself with respect to all the required information, inputs, conditions, including site conditions and circumstances and factors that may have any effect on its Bid. Once the Bidder has submitted the Bids, the Bidder shall be deemed to have examined the laws and regulations in force in India, the grid conditions, and prepare the Financial Bid and other sections taking into account all such relevant conditions and also the risks, contingencies and other circumstances which may influence or affect the implementation of power plants. Accordingly, the Bidder acknowledges that, on being selected as the Selected Bidder, it shall not be relieved from any of its obligations foreseen under this Document nor shall be entitled to any extension of time for commissioning of the plants or financial compensation for any reason whatsoever.
- 1.6 The Bidders should particularly acquaint themselves with the technical requirements of integrating the power plant with the distribution system of the respective distribution licensee of the State, the regulations specified by Central Electricity Authority, grid operation as specified in the, the Uttar Pradesh Grid Code and the Uttar Pradesh Distribution Code.
- 1.7 In their own interest, the Bidders are requested to familiarize themselves with the Electricity Act, 2003, scheme announced by Ministry of New and Renewable Energy for promotion of grid connected rooftop solar photovoltaic power plants, Regulatory Framework specified by the Uttar Pradesh Electricity Regulatory Commission, Rooftop Solar Photovoltaic Power Plant Policy, 2017 announced by Uttar Pradesh Government, building bye laws prevalent in Uttar Pradesh and any other local laws affecting the implementation of grid connected rooftop solar photovoltaic power plants and all other related acts, laws, rules and regulations prevalent in India, as amended from time to time. The UPNEDA shall not entertain any request for clarifications from the Bidders regarding the same. Non-awareness of these laws or such information shall not be a reason for the Bidder to request for extension in the Bid Deadline. The Bidder undertakes and agrees that, before submission of its Bid; all such factors as generally stated above, have been fully investigated and considered while submitting the Bid.
- 1.8 The Bidder shall familiarize itself with the procedures and time frames required to obtain all the Consents, Clearances and Permits required for the supply of power to the Procurer. The Bidder shall arrange all the Consents, Clearances and Permits required for setting up of the generation facilities for Primary Beneficiary. It should also arrange for the grid interconnection of the plant as well as commissioning certificate from respective Government department.

INTRODUCTION

MNRE has accorded sanction for installation of grid-connected solar roof top power plants in Uttar Pradesh under “**Grid connected rooftop solar programme, Phase-2**” of MNRE. The generated solar power may be utilized for captive application and the surplus power may be fed to the grid as per the grid connectivity specified in UPERC guidelines on Net metering.

UPNEDA calls for Rate contract Tender for the implementation of about 60MW Grid Connected Rooftop Solar PV power plant under the CAPEX models. The all successful bidder(s) participated in this tender and willing to execute the work at approved L1 rate will be empanelled to work in Uttar Pradesh.

Availability of CFA

Type of residential sector	CFA (as percentage of benchmark cost or cost discovered through competitive process whichever is lower)
Residential sector (maximum up to 3 kW capacity)	40 % of benchmark cost**
Residential sector (above 3 kW capacity and up to 10 kW capacity)*	40 % up to 3 KW** Plus 20% for RTS system above 3 kW and up to 10 kW. Beyond 10 KW no CFA

**The residential sector users may install RTS plant of even higher capacity as provisioned by respective State electricity regulations; however, the CFA will be limited up to 10 kWp capacity of RTS plant.*

*** CFA shall be on benchmark cost of MNRE or lowest of the costs discovered in the tender, whichever is lower*

UPNEDA hereby invites interested bidders to participate in the bidding process for installation of “Grid connected solar rooftop power plants of 60MW under capex net metering mode in Uttar Pradesh. The capacity is tentative depends on MNRE allocations of current years, the final capacity will be as per MNRE allocation for the State.

Mode of Execution of Programme:

The selected contractor shall identify beneficiaries to Design, supply, install, and commission solar roof top systems and provide mandatory maintenance services for 5 years. To ensure effective operation and maintenance of the system during 5 years of comprehensive warranty and maintenance of systems the bidder should set up their repair and maintenance centers as per requirement.

Vendors for supply and installation of the RTS shall establish a service centre in each District. In case if it is not economically viable for an individual vendor then Group of vendors can establish service Centre in each District. Their contact details will be made available on the website. iv. These service centres have to provide services to the RTS owners within the timelines specified in the contract, free of cost for first five years (Warranty period) of commissioning of the RTS. Non-performing/Under-performing PV Panels will be replaced free of cost in the warranty period. Non-compliance of the service standards by the vendor will make it ineligible for future work orders by the Government and may be blacklisted

The Programme shall be carried out as given hereunder:-

- (i) The bidders shall be allowed to install the systems conforming to the specifications mentioned in this tender document and MNRE guide lines after allocation of work by UPNEDA/UPPCL.
- (ii) For this UPNEDA/UPPCL shall allocate capacity/targets to each selected manufacturers.
- iii) The work covers Site selection, design, supply, installation, commissioning and comprehensive maintenance for FIVE years.

BID INFORMATION SHEET

Document Description	<ul style="list-style-type: none"> ▪ The bidding process under this Rooftop scheme is for approximately 60 MWp or as allocated by MNRE for current year target under net metering CAPEX Model. ▪ The size of project shall be in the range from 1-10Kw Part I and 11-25 KW Part II.
Broad Scope	<ul style="list-style-type: none"> ▪ Site selection, Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning of the grid connected rooftop solar PV project including comprehensive Operation and Maintenance (O&M) of the project for a period of 5 years after commissioning of project. ▪ Total timeline for Commissioning of project after receiving work order from beneficiary is 4 Months only and total timeline for allocated capacity is 11 month. The allocated capacity shall be reviewed every 4 month and based on performance the allocation may be changed.
Tender Fee	<p>Rs.29,500/- (Rs. Twenty nine thousand and five hundred only) includes GST. The tender fee is to be furnished through Demand Draft (DD) drawn in favor of “Director UPNEDA”, payable at Lucknow. Only Uttar Pradesh State based micro and small scale industries registered under District industries centre or NSIC shall be eligible for exemption in tender fees. For getting exemption the certificate issued from District industries centre or NSIC is mandatory, other kind of certificate will not be considered. The MSME of other states has to deposit the tender fees and Performance BG.</p>
Ernest Money	Based on the Bid capacity proposed by the bidder in the bid
Performance Security (PBG)	Based on the capacity allocation/acceptance of the bidder.

Capacity Distribution and Eligibility Conditions for Bidders

Tentative allocation of 60 MW (shall be corrected ,based on final allocation to the state of Uttar Pradesh by MNRE)

Part	CAPACITY RANGE	Approximate Quantity
I.PART-A	1KW – 10 KW	40 MW
II. PART-B	11KW -25KW	20 MW

The above allocations of capacity are tentative and can be interchanged depending upon the number of bidders qualified in that categories and project demands in various categories. The decisions of UPNEDA in this regard shall be final and binding to all.

In case a Successful Bidder is facing genuine difficulty in execution of project as per letter of allocation. UPNEDA will allow transfer of allocated capacity in full or part to the other successful bidders. Apart from this UPNEDA may review the progress in order complete the work within stipulated period if required the capacity allocation may change.

Eligibility:

Firm Type	General eligibility	Technical Eligibility	Financial Eligibility	EMD
Category B (For capacity 1 KW to 25 KW)	A Registered Manufacturing Company/Firm/ Corporation/LLP in India of SPV Cells / Modules (Conforming to relevant National / International Standards) OR A PV System Integrator having experience in installation, commissioning with 5 years comprehensive maintenance services for solar power plant in MNRE supported Schemes / Programs/ SNA/PSU.	1.The bidder should have minimum three years' experience of successful installation of solar power plant projects including grid interactive. 2.The bidder should have cumulative experience of executing > = 100 KWp Grid connected SPV Power Plants & /Off-Grid SPV Power Plant in India . (The details of projects executed should be listed. A certificate issued by the SNA/Govt. Organisation /SECI/Third part inspector empaneled with MNRE/SNA's towards the satisfactory installation, commissioning and functioning of the power plants to be furnished by the bidder.)	The bidder has financial capability to take up the proposed work to be supported by Audited balance sheet for three years from 2016-17, 2017-18and 2018-19 balance sheet along with CA certificate should be attached) and there should be minimum average turnover of 2.00 Crore in last three years.) (This must be the individual Company's turnover and not that of any group of Companies).	(Rs. 5 Lakhs) X Bid Capacity quoted in MWp on prorata basis. (Only Uttar Pradesh State based micro and small scale industries registered under District industries center or NSIC shall be eligible for exemption in EMD and performance BG. For getting exemption the certificate issued from District industries center or NSIC is mandatory, other kind of certificate will not be considered. The MSME of other states has to deposit the EMD and Performance BG. Other state MSME/ new firm bidder should deposit the EMD
Category A (For capacity 1 KW to 10 KW)	The Bidder should be a body incorporated in India and registered with concern government authority under the law for doing business of Solar Power.	It is advisable to have one of the Employees of bidder's Firm should be professional having minimum ITI/ Suryamitra certificate / Diploma/ BE / holder in Qualification.	No financial turnover limit is mandatory for start-up/new firms.	(Rs. 2.50 Lakhs) X Bid Capacity quoted in MWp on prorata basis. (Only Uttar Pradesh State based new entrepreneur MSME/ Shall be eligible for exemption in EMD and performance BG. Other has to deposit the EMD and PBG. Other state MSME/ new firm bidder should deposit the EMD

Note: The firm not eligible for Category B can apply in category A .

Wherever, information has been sought in specified formats, the Bidder shall refrain from referring to brochures /pamphlets. Non-adherence to formats and / or submission of incomplete information may be a ground for declaring the Bid as non-responsive. Each format has to be duly signed and stamped by the authorized signatory of the Bidder then scanned and uploaded in the Techno-Commercial Bid Part.

EMD (To be submitted in original form offline only. Scan copy shall also be uploaded.)

The Bidder shall furnish Interest free Earnest Money in the form of Bank Guarantee (BG) / Demand Draft drawn in favour of “Director, UPNEDA”, payable at Lucknow. The validity of Earnest Money shall be for a period of 4 Month.

The EMD of unsuccessful bidders shall be returned within 30 days from the finalization of financial bid. EMD(s) of Successful bidder shall be released after the receipt of PBG in the format prescribed by UPNEDA and after the receipt of confirmation of their PBG’s from their respective banker.

The Micro and small firm established and registered in Uttar Pradesh are exempted for submitting the EMD. Others firm mandatorily submit the EMD.

The Earnest Money shall be in Indian Rupees and shall:

The EMD shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to UPNEDA under following circumstances:

- a. Hundred percent (100%) of Earnest Money amount of the proposed capacity, if a Bidder withdraws/revokes or cancels or unilaterally varies his bid in any manner during the period of Bid Validity specified in this document.
- b. Hundred percent (100%) of Earnest Money amount of the proposed capacity, if the Successful Bidder fails to unconditionally accept the Allocation letter within 7 days from the date of its issue.
- c. Hundred percent (100%) of Earnest Money amount of the proposed capacity, if the Successful Bidder fails to furnish the “Performance Security”.

In case of Micro and small firm getting benefits of exemptions, if they will not turn-up for agreement or work or fail to execute the allocated work, will be blacklisted. Blacklisting may inter-alia include the following: - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects. b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

PERFORMANCE SECURITY/PERFORMANCE BANK GUARANTEE (PBG)

Within 15 days from the date of issue of Allocation letter, Successful Bidder shall furnish the Performance Security for the allocated capacity only.

The formula applicable to calculate the PBG amount will be:

PBG amount = (Rs. 25 Lakh) X Allocated Capacity in MWp. For all categories

The Performance Security shall be in Indian Rupees and shall be in one of the forms:

A demand draft, or a bank guarantee. The bank guarantee may be issued by a nationalized bank or scheduled bank of RBI in favour of Director, UPNEDA, Lucknow.

The PBG shall be forfeited as follows without prejudice to the Bidder being liable for any further consequential loss or damage incurred to UPNEDA/UPPCL.

If the Successful Bidder is not able to commission the projects PBG amount on pro-rata ***basis to the capacity not commissioned or cost incurred on the completion of the project by the successful Bidder will be deducted. However, Hundred percent (100%) PBG amount furnished*** for the Sanctioned Capacity, if the Successful Bidder fails to Commission the Projects(s) which are allocated shall be forfeited..

The Performance Security shall be valid for a minimum period of 66 Months from the date of issue of allocation letter (s) and shall be renewed/ extended till the completion of 5 years

of O&M period. The Performance security shall be released after 5 years from the date of commissioning with the compliance of entire obligations in the contract.

In case of Micro and small firm getting benefits of exemptions, if they will not complete the allocated work will be blacklisted. Blacklisting may inter-alia include the following: - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects. b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

The bidder shall be responsible for Operation and Maintenance of the Roof top Solar PV system for a period of 5 years.

In case of Micro and small firm exempted for submitting the PBG, 5% of the total cost each systems shall be deducted from the subsidy amount payable to them, this 5% will be released @ of 1% each year after submitting the performance certificate from the users.

Non-compliance of the service standards by the vendor will make it ineligible for future work orders by the Government and may be blacklisted. The Blacklisting may inter-alia include the following: - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects. b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted

This is a ZERO Deviation Bidding Process. Bidder is to ensure compliance of all provisions of the Tender document and submit their Bid accordingly. Tenders with any deviation to the bid conditions shall be liable for rejection.

SECTION 3: PREPARATION OF e-tender

3.1 LANGUAGE OF BID AND MEASURE

- 3.1.1 The e-tender 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.

3.2 DOCUMENTS COMPRISING THE BID

- 3.2.1 The e-tender prepared by the Bidder shall comprise the following components
- (a) Covering letter as provided in e-tender document.
 - (b) General particulars of bidder, as provided in e-tender document.
 - (c) Declaration by The Bidder, as provided in e-tender document
 - (d) Details for Past Experience meeting Qualification Requirement in the prescribed Format 4 With Documentary evidence establishing that the bidder is eligible to Tender and is qualified to perform the contract if its tender is accepted.
 - (e) Check list of Annexure as provided in e-tender document
 - (f) Minimum Guaranteed Generation in the prescribed Format 5
 - (g) A blank copy of the in e-tender document signed on each page, as a confirmation by the Bidder to accept all technical specifications / commercial conditions along with all necessary enclosures.
 - (h) Authorization letter of the Bidder, for the person representing his Company/Firm/ Corporation, that he is authorized to discuss and with specific mention of this e-tender

3.3 BID PRICE

- 3.3.1. The Bidder shall indicate prices on the appropriate financial bid schedule.
- 3.3.2. Bidder may quote /apply for all categories or single as per eligibility in Financial Bid Schedule,

3.3.3 DUTIES AND TAXES

The price quoted should include all taxes what so ever as applicable. A Bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & GST norms will be payable by the Bidder. TDS of income Tax and GST as applicable will be deducted from the payment of the Bidder as per the prevalent laws and rules of Government of India and Government of Uttar Pradesh in this regard for the work order issued by UPNEDA/UPPCL.

3.4 BID CURRENCIES

- 3.4.1 Prices shall be quoted in Indian Rupees (INR) only

3.5 SECURITY DEPOSIT/ PERFORMANCE GUARANTEE:

- 3.5.1 The successful Bidders, who execute the agreement with UPNEDA for the work, shall have to furnish a security amount as calculated of the contract LOI in the form of Bank Guarantee valid for a period of 66 months from the date of execution of agreement. The bank guarantee may be issued by a nationalized bank or State Bank of India or its subsidiary bank. Bank Guarantee shall be in favour of "Director, UPNEDA". The aforesaid Bank Guarantee shall be furnished prior to the execution of agreement in format enclosed.

3.6 PERIOD OF VALIDITY OF e-tender

- 3.6.1 Validity of the offer should be 3 months from the date of opening of the financial bid of the e-tenders. Without this validity the e-tenders will be rejected.
- 3.6.2 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 clause 3.5.1 above shall also be suitably extended.

3.7 BID SECURITY (Earnest Money)

- 3.7.1 The bidder shall furnish, as part of its bid, bid security of -----) of calculated value i.e. Rs. -----) in the form of Bank guarantee issued by a nationalized bank, or State Bank of India and its subsidiary banks or RBI scheduled Bank. The bank guarantee shall be valid for a period of 4 (Four) months from the opening of technical bid.Format enclosed .
- 3.7.2 Any bid not secured with the tender fee and earnest money will be rejected by the UPNEDA as non-responsive.
- 3.7.3 No Interest shall be payable on the amount of earnest money.The same will be released after the e-tenders have been decided, to those Bidders who fail to get the contract.
- 3.7.4 The e-tender security (earnest money) may be forfeited:
- a) If a Tenderer withdraws its e-tender during the period of e-tender validity specified by the Bidder in the e-tender.
- b) If the successful Bidder fails to sign the contract within stipulated period.
- 3.7.5 EMD of successful bidder shall only be released after signing of agreement and submission of Security bank guarantee.

3.8 FORMAT AND SIGNING OF e-tender

- 3.8.1 The bid must contain the name, residence and places of business of the persons making the e-tender 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.
- 3.8.2 e-tender 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
- 3.8.3 The original copy of the e-tender 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 e-tender.
- 3.8.4 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 e-tender.

(Signature of Bidder)
with SEAL

SECTION: 4:UPLOADING OF e-tender

- 4.1** uploading of e-tender the bid shall be uploaded online as per guide lines of U.P. Electronics Corporation Limited (UPLC), 10 Ashok Marg, Lucknow (U.P.)
- 4.1.1 The tender must be complete in all technical and commercial respect and should contain requisite certificate, drawings, informative literature etc. as required in the specification.
- 4.1.2 First part (**PART-A**) should contain technical specification, brochure literature etc. All parts of tender documents except financial bid should be uploaded as per e-procurement mode in due date and time. Scanned copy of Requisite earnest money in the form of Bank Guarantee should be enclosed.
- 4.1.3 The Bidder should submit price bid in Second part. Second part (**PART-B**) should contain financial bid only should be uploaded as per e-procurement mode in due date and time. Anything in regard of financial condition, payment terms, rebate etc. mentioned in financial bid may make the tender invalid. Therefore, it is in the interest of the Bidder not to write anything extra in part-II except price.
- 4.1.4 The original copy of uploaded document i.e. First part (**Part-1**) is to be submitted by Post /courier/by hand to UPNEDA HQ before opening of Technical bid.
- 4.2** EXPENSES OF AGREEMENT: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.
- 4.3** DEADLINE FOR SUBMISSION OF BIDS:Bids must be uploaded by the tenderer in the date; time and address specified in the e-tender notice/ tender documents.

(Signature of Bidder)
with SEAL

SECTION 5: e-tender OPENING AND EVALUATION

5.1 OPENING OF e-tender

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

- 5.1.1 First part (PART-A) uploaded having e-tender specification no. and super scribed as “**Technical bid**” shall be opened at the time and date mentioned in the e-tender notice by UPNEDA’s representatives in the presence of Bidders, who choose to be present.
- 5.1.2 Second part (PART-B) containing Financial Bid shall be opened (after obtaining clarifications and 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.

5.2 CLARIFICATION OF e-tender

- 5.2.1 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 shall be in writing.
- 5.3 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.

Signature of Bidder
with seal

SECTION-6:PROCEDURE FOR FINALIZATION OF BID

The Procedure for Finalization of BID would be as follows:

6.1 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.

6.2 Finalization of Empanelment:

- a) The lowest rate (i.e. L-1) for each Part received (and in turn approved by the competent authority) would be the “Approved Rate”.
- b) “Approved Lowest Rate” for each part would be offered to other bidders whose rates are within 20% of L1 (i.e. to L-2, L3 and so on) to work on lowest approved rates..
- c) L1 i.e. Lowest Rate Bidder for each category and firm wise category will be allocated up to 20% of the such part quantity bid quantity or as per his capacity given in the bid, whichever is lower.
- d) No firm will be awarded more than 20% of for each part. In case in any part the number of firm will be less than 6 in such case the bidder whose rate is within 25% shall be allowed to give their consent to work at L1.
- e) In start-up/new entrepreneur category A the maximum allocation to one firm will be initially 50 KW. After successful commission they may be allotted additional capacity based on the availability of capacity for completion.
- f) Maximum 25 % (Out of 25% of target for MSME, 4% is reserved for SC/ST; 5% for BC/Minority/ Handicapped and 3% for female entrepreneur). of the total quantity targeted shall be allocated 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. If MSE category bidder will be L1 then L1 will be awarded 20% of 25% of MSE allocation. The remaining of 25% of MSE quantity shall be awarded among others qualified MSME firms.
- g) The bidder other than MSE will be awarded in remaining of 75% of total target quantity. The lowest bidder other than MSE firms qualified shall be awarded 20% of 75% or as per its capacity given in the bid, whichever is lower and remaining shall be awarded in other bidders subject to their consent to work on lowest L1 rate.
- h) All successful bidder(s) can get work order directly from Residential sectors sector as per their allocation.
- i) Training of the user will be arranged by the contractor/ bidder.

6.3 If required UPNEDA reserves the right to negotiate with (lowest) L-1 bidder before finalization of the tender.

6.4 UPNEDA reserves the right to accept any bid and to reject any or all bids.

6.5 NOTIFICATION OF EMPANELMENT:

List of successful Bidder(s) for contract shall be displayed on UPNEDA's website and shall be intimated in writing to the contractor.

6.6 CONTRACT

Before execution of the work, a contract agreement for execution of the work shall be signed by the Bidder with UPNEDA within 15 days of communication from UPNEDA. In case agreement is not executed within the stipulated time, the earnest money will be forfeited. The firm who is exempted from submitting EMD will be black listed if they will not turnup for agreement.

6.8 RIGHT TO VARY QUANTITIES

The authority reserves the right of awarding the work in a phased manner. UPNEDA may increase or decrease the quantity mentioned in the tender at the time of award of contract. The Successful Bidder shall not assign or make over the empanelment, the benefit or burden thereof to any other person or persons or body corporate for the execution of the

contract or any part thereof without the prior written consent of UPNEDA. UPNEDA reserves its right to cancel the empanelment either in part or full, if this condition is violated.

6.10 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.

All the SPV Rooftop systems installed will be inspected by the representative of UPNEDA/third party monitor within 15 days of receipt of Installation & Commissioning report by beneficiaries. The eligible subsidy will be released only for the systems installed in compliance to the technical specification of MNRE /UPNEDA /UPPCL/DISCOMs. During the Inspection, if the system installed is found faulty (or) not in compliance to the technical specification, the cost for re-inspection by UPNEDA/third party after rectification /replacement shall be borne by the bidder.

In case the systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of AMC, the implementing agency/Ministry reserves the right to blacklist the vendor. Blacklisting may inter-alia include the following: - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects. b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

Signature of Bidder
with seal

PART 3 : GENERAL CONDITIONS OF CONTRACT UNIFIED

1. DEFINITIONS

- 1.2. "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 e-tender has been accepted by UPNEDA and shall include his legal representatives and successors in interest.
- 1.3 The agreement shall be rate contract on basis valid for 12 month. The work shall be completed within ---- months from the date of this agreement.. In case the contractor/ bidder fails to execute the said work within stipulated time, "UPNEDA" will be at liberty to get the work executed from the other bidder/open market without calling any tender/e-tender and without any notice to the contractor/ bidder, at the risk and cost of the contractor/ bidder. Any additional cost incurred by "UPNEDA" shall be recovered from the contractor/ bidder. If the cost of executing the work as aforesaid shall exceed the balance due to the contractor/ bidder, and the contractor/ bidder fails to make good the additional cost, "UPNEDA" may recover it from the contractor/ bidders' pending claims against any work in "UPNEDA" or in any lawful manner.
- 1.4 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, or any extended period granted to the contractor/ bidder. Maximum period of extension shall be 2 months on the same terms and conditions as contained in this agreement.
- 1.5 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 clause 1.3.
- 1.6 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 theneed 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.

2 LIQUIDATED DAMAGES

- 2.1 If the contractor/ bidder fails to perform the services 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/Beneficiaries) the "UPNEDA/UPPCL/Beneficiaries" shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damage, a sum equivalent to 1.0% of the price of the unperformed services for each week (For the purposes as calculation of delay, part of week shall be treated as week) of delay until actual performance up to a maximum deduction of 10% of the delayed services. Once the maximum is reached, 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 or to continue with time extension with further penalty. The "UPNEDA" may consider termination of the contract. In the case of violation of contract, UPNEDA may confiscate pending payments/ dues of the contractor/ bidder assigning specific reasons and shall also have the power to debar/ blacklist the contractor/bidder in similar circumstances. UPNEDA may also invoke performance/security bank guarantee of 10%.
- 3 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.

4 FORCE MAJEURE

- 4.1 Notwithstanding the provisions of clauses contained in this deed; the contractor/ bidders 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.

4.2 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 in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes

4.3 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.

5 The High court of Judicature at Allahabad and Courts subordinate thereto, at Lucknow, shall alone have jurisdictions to the exclusion of all other courts.

6 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.

7 "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".

8 If any question, dispute or difference whatsoever shall arise 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

9 (For work order placed by UPNEDA)

"UPNEDA" may at any time by notice in writing to the contractor/ bidder either stop the work all together or reduce or cut it down. If the work is stopped all together, the contractor/ bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. Such expenses shall be assessed by "UPNEDA", whose decision shall be final and binding on the contractor/ bidder. If the work is cut down the contractor/ bidder will not be paid any compensation whatsoever 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 INSPECTION AND TESTS

10.3.1 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.

11. WARRANTY

11.1 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.

11.2 The Contractor/ Bidder shall warranty that the equipment used in installing the plant are new and unused.

11.3 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.
- 11.4 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.
 - 11.5 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.
 - 11.6 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.
 - 11.7 The Contractor/ Bidder shall provide warranty certificate along with the Commissioning report to the Beneficiaries/UPNEDA
 - 11.8 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.
 - 11.9 The contractor/ bidder shall maintain the system under annual maintenance contract with the end user.
 - 11.10 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.
 - 11.11 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).
 - 11.12 Hand-Over Agreement: The Contractor/ bidders shall hand-over the respective plant to the user after its successful commissioning in excellent condition. At the time of handing over all the performance tests of the major equipment shall be demonstrated to the user and UPNEDA to ensure Generation from the solar photovoltaic power plant. While handing over the plant the Contractor/ bidders shall also hand over all technical documents, literature, instruction manuals, lists of spare part & tools & tackles.
 12. 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".
 - 13. PATENT RIGHT AND ROYALTIES.**

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.
 - 14. PACKING FORWARDING**
 - 14..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.
 - 14.2 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.
 - 15. DEMURRAGE & WHARFAGE, ETC**

All demurrage, wharfage and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor/ bidder.
 - 16. INSURANCE**

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.

17. TRANSPORTATION

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.

18. 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”.

19.. 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”.

20. APPLICABLE LAW

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

21. NOTICE

21.1 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.

21.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

22. TAXES DUTIES AND INSURANCE:

The price quoted should include all taxes, duties and Insurance expenditure, all tax etc. if any. A contractor/ bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the contractor/ bidder. If any new tax/duty is levied during the contract period the same will be borne by the contractor exclusively. 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.

23. OTHERS:

23.1 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 for uploading it web portal.

23.2 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.

23.3 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.

23.4 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.

24 POST COMMISSIONING ACTIVITIES

24.1 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, PCU and battery from MNRE authorized test center.
- Plant charging/ Commissioning certificate
- Agreement / memorandum signed with distribution licensee for Interconnection with the distribution system
- Photograph of site before installation and after installation

25. PAYMENTS:

1. Payment of the project cost, excluding the MNRE and State Subsidy, shall be paid by the beneficiaries directly to the empanelled firm. The MNRE and State Subsidy, shall be paid by **the DISCOMS/UPPCL OR NODAL AGENCY AS AUTHORISED BY DISCOMS/UPPCL** to the empanelled Firms on completion of the project, verification by SNA's / third party inspector empanelled by SNA's and receipt/availability of the CFA/State Subsidy .
2. Copies of invoices after joint inspection shall also be uploaded to UPNEDA/SPIN solar rooftop web portal along with Inspection Report, photographs and required documents as per the check list.
3. The eligible Central Financial Assistance (CFA) of MNRE/state government shall be claimed as per MNRE/ UP govt guidelines through online web portal and by submitting original hard copy of bill. **DISCOMS/UPPCL OR NODAL AGENCY AS AUTHORISED BY DISCOMS/UPPCL** shall release the eligible CFA to Firm based on sanctioned received by MNRE/Government of U P and availability of funds.

26. PLANT PERFORMANCE EVALUATION:

UPNEDA may monitor the performance of the grid connected SPV Power Plants online above 10 kW PV capacity, The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the DNI level for the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify for release of subsidy. Minimum CUF of 15% should be maintained for a period of 5 years for release of performance related security deposit. For CUF less than 15%, the penalty can be imposed for the loss of energy generation @ maximum tariff paid by the consumer for that year subject to force majeure conditions. The PR will be measured at Inverter output level during peak radiation conditions. This can be monitored through remote monitoring facilities provided with the system; firm should provide the login and password to both UPNEDA/Beneficiaries.

27. PROJECT INSPECTION.

- Project(s) shall be got inspected by the bidder from the list of empanelled experts/**DISCOMS/UPPCL OR NODAL AGENCY AS AUTHORISED BY DISCOMS/UPPCL** as per the checklist requirement of for release of subsidy, All the expenses for third party expert inspection in this regard shall be borne by the Bidder only. The empaneled third party inspector/UPNEDA shall be displayed on UPNEDA rooftop web portal.
- UPNEDA reserves the right to do sample inspection checks for the projects commissioned by the Bidder.
 - In case the systems are not as per standards, nonfunctional on account of poor quality of installation, or non-compliance of AMC, the implementing

agency/Ministry reserves the right to blacklist the vendor. Blacklisting may inter-alia include the following: - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects. b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

(Signature of Bidder)
with seal

PART -4 : SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

4.1 SCOPE OF WORK

- a. Scope of work covers Design, Supply, Installation, Commissioning and five years comprehensive warranty Maintenance and Operation of Grid Connected SPV Rooftop Plant under Net Metering 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. The contractor will collect firm work order from the purchasers. The Invoice, technical details of module, PCU, etc. and its test report, testing and commissioning report of plant, Statement of Expenditure, Joint Inspection Report, Net Metering Work Completion & Synchronization reports, installed system photographs, and bill of material has to be submitted to beneficiaries for uploading it UPNEDA/SPIN rooftop website for release of CFA of MNRE/State subsidy.
- e. A leaflet containing the details of operation and the service centers shall be provided to each purchaser.
- f. The contractor shall do necessary coordination with concerned agencies like DISCOM for procuring necessary approvals on behalf of the Purchasers. However the cost of approvals and bi-directional meter, CT/PT shall be borne by the Purchaser only.

4.2 TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of subsidy as decided by UPNEDA. UPNEDA's decision will be final and binding on the bidder.

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is with or without battery and 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 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.

- Grid interactive Power Conditioning Unit with Remote Monitoring System
- Mounting structures
- Junction Boxes.
- Earthing and lightning protections.
- IR/UV protected PVC Cables, pipes and accessories

4.3 The solar photovoltaic technology (including all forms of photo voltaic) 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. For subsidized projects (i.e. for residential projects) only indigenously manufactured PV panels (both cells and modules) should be used.

4.4 Grid interactive SPV power plants, inverters, meters, cables, mounting structures and other balance of systems etc. should have the minimal technical requirements and quality control standards as prescribed by MNRE from time to time. The mechanical structures,

electrical works including power conditioners/inverters/charge controllers/maximum power point tracker units/distribution boards/digital meters/switch gear/net-meters/storage batteries, etc. and over all workmanship of the RTS plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years. Fulfilment of the warranty obligations of the complete Solar system shall rest with System integrator who in turn may claim the same from the component manufacturers.

4.5 SOLAR PHOTOVOLTAIC MODULES:

Solar PV modules should be of the any 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	$\geq 15\%$
Fill factor	$\geq 70\%$
warranty	Panel output (W_p) capacity to be $\geq 90\%$ at the end of 12 years and $\geq 80\%$ of at the end of 25 years.
Module frame	Non-corrosive and electrically compatible with the mounting structure material
Termination box	Thermo-plastic, IP 65, UV resistant
Blocking diodes	Schottky type
Module minimum rated power	The nominal power of a single PV module shall not be less than 200Wp.
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 in his project proposal submitted to Purchaser. UPNEDA/Owner shall allow only minor changes at the time of execution.

The rated output power of any supplied module shall have 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.

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

The solar module must be from ALMM list approved by MNRE from effective date of implementation as per MNRE order no 283/54/2018-Grid solar dated 3rd Jan 2019 or its latest amendments At present it will be effective from 31st March 2020. Hence before March 2020 the module should be as per MNRE Guide lines and indigenous.

4.4 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
- i. 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.

4.5 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.

4.6 Detailed specifications for the mounting structure are given below:

Wind velocity withstanding capacity	150 km / hour The designs have been certified by a recognized Lab/ Institution/certified engineers in this regard and submit wind loading calculation sheet to users if they desire so. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.
Structure material	Pre galvanized sheet steel with a minimum galvanization thickness of 80 microns and the structural patterns shall be made before galvanizing
Bolts, nuts, panel mounting clamps, fasteners (with spring washers)	Stainless steel SS 304
Mounting arrangement for metal sheet roofs	Mounting directly on the sheet metal, ensuring stability and wind withstanding capacity or penetrating the sheet metal and fixing to the sub-structure, ensuring that the roof remains water proof and ensuring stability and wind withstanding capacity.
Mounting arrangement for elevated structures	The elevated structure has to be securely anchored to the supporting surface. Concrete foundations of appropriate weight and depth for elevated structures mounted directly on the ground; Bolted with anchor bolts of appropriate strength for elevated structures mounted on RCC surfaces.
Mounting arrangement for ground installations	With removable concrete ballast made of pre-fabricated PCC (1:2:4), M15; assuring enough ground clearance to prevent damage of the module through water, animals and other environmental factors.
Mounting arrangement for RCC-flat roofs Installation	With removable concrete ballast made of pre-fabricated PCC (1:2:4), M15. The structures shall be designed for simple mechanical on-site installation. There shall be no requirement of welding or complex machinery at the installation site.
Minimum distance between roof edge and mounting structure	0.5m
Access for panel cleaning and maintenance	All solar panels must be accessible from the top for cleaning and from the bottom for access to the module- junction box.

Panel tilt angle	North – south orientation with a fixed tilt angle of 27-30 degrees(depending on location), south facing. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
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Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.

The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m². The array structure shall be grounded properly using maintenance free earthing kit suitable for mounting over building terrace

4.7 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.

4.8 Solar Grid Inverter

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the “Power Conditioning Unit (PCU)”. In addition, the PCU shall also house MPPT (Maximum Power Point Tracker). Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

1	Total output power (AC	To match solar PV plant capacity while achieving optimum system efficiency
2	Input DC voltage range	As required for the solar grid inverter DC input
3	Maximum power point (MPPT)	Shall be incorporated
4	Number of independent MPPT inputs	1 or more
5	Operation AC voltage	<ul style="list-style-type: none"> ▪ For up to 5kWp - Single phase 230V ▪ For above 5kWp upto 50KW/63KVA –Three phase 415V four wire Above 50 KW-11KV or as per availability of the main grid supply
6	Operating Frequency range	47.5 – 52.5 Hz
7	Nominal frequency	50 Hz
8	Power factor of the inverter	>0.98 at nominal power
9	Total harmonic distortion	Less than 3%
10	Built-in Protection	AC high / low voltage; AC high /low frequency
11	Anti-islanding protection	As per VDE 0126-1-1 / IEC 60255.5/ IEC 60255.27 / IEC 62116
12	Operating ambient temperature range	-1 °C to +55 °C
13	Humidity	0 – 95% Rh
14	Inverter efficiency	>=95%
15	Inverter weighted efficiency	>=94%
16	Protection degree	IP 65 for outdoor mounting, IP 54 for indoor mounting
17	Communication interface	RS 485 / RS 232 / RJ45
18	Safety compliance	IEC 62109-1, IEC 62109-2

19	Environmental Testing	IEC 60068-2 (1, 2, 14, 30)
20	Efficiency Measurement Procedure	IS/IEC 61683
21	Cooling	Convection
22	Display type	LCD for data display. LCD /LED for status display
23	Display parameters to include	Output power(W), cumulative energy (Wh), DC voltage (V), DC current (A), AC voltage (V), AC frequency (Hz), AC current (A), cumulative hours of operation (h).

The combined wattage of all inverters should not be less than rated capacity of power plant under STC.

Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array. While designing the PCU for UTTAR PARADESH grid comparability the boundary conditions specified in the UPERC/Secretary/RSPV Regulations/2015/2150 Dated: 20/03/2015 can be taken care. The details can be downloaded from UPERC web site.

PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown. The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder. Built-in meter and data logger to monitor plant performance shall be provided.

The PCU/ inverters should be tested from the MNRE approved test centres /NABL /BIS /IEC accredited testing- calibration laboratories.

4.9 GRID ISLANDING:

In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as “islands.” Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel

The AC output of the solar grid inverter shall be connected to the building’s electrical system after the Discom service connection meter and main switch on the load side. The solar grid inverter output shall be connected to a dedicated module in the Main Distribution Board (MDB) of the building. It shall *not* be connected to a nearby load.

Utilities may have voltage levels other than above; DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly. For large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the SPV bidders.

4.10 DATA ACQUISITION SYSTEM / PLANT MONITORING

(for the plant 10 KW and above)

Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC, Metering and Instrumentation for display of systems parameters and status indication to be provided. Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system The following parameters are accessible via the operating interface display in real time separately for solar power plant:

- AC Voltage.
- AC Output current.
- Output Power
- Power factor.
- DC Input Voltage.
- DC Input Current.
- Time Active.
- Time disabled.
- Time Idle.
- Power produced

Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage).

All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel. PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored. Computerized AC energy monitoring shall be in addition to the digital AC energy meter. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form. All instantaneous data shall be shown on the computer screen. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant. Provision for Internet monitoring and download of data shall be also incorporated.

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. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner/ UPNEDA Lucknow with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and

operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on UPNEDA server and portal in future shall be kept.

4.11 TRANSFORMER “IF REQUIRED” & METERING:

Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work. The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy. The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to UPNEDA before commissioning of SPV plant.

Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

4.13 POWER CONSUMPTION:

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

4.14 PROTECTIONS

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

4.15 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.

4.16 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

4.17 EARTHING PROTECTION

- (i) Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning 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.
- (j) 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.

4.18 CABLES

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: -10°C to $+80^{\circ}\text{C}$. 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 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 mm² copper. 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) A
- C 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.

4.19 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.

4.20 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.

4.21 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 conform 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.

4.22 DRAWINGS & MANUALS:

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

4.23 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.

4.24 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.

4.25 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.

4.26 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.

4.27 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.

4.28 AC Distribution Box

An AC distribution box shall be mounted close to the solar grid inverter. The AC distribution box shall be of the thermo 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

4.29 Metering

The existing service connection meter needs to be replaced with a bidirectional (import kWh and export kWh) service connection meter for the purpose of net-metering for eligible categories. Installation of the net meter will be carried out by Discom. Beneficiary will submit application to Discom to enable the connectivity of Solar rooftops with Grid and to avail net metering benefits. The beneficiaries can also purchase the Net meter from market and get it install by the DISCOM.

4.30 Documentation

The Installer shall supply the following documentation:

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

4.31 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 gridtied inverters above 20kW, self-certification by the manufacturer of the said inverter is acceptable.**

4.32 General Instructions

- A Water and power supply for the construction shall be the responsibility of the Contractor/Bidder
- B Security, safety, watch, and ward of all materials at sites shall be the responsibility of the Contractor/Bidder
- C Liaison with the concerned distribution licensees, Uttar Pradesh New and Renewable Energy Development Agency, Roof Owner (concerned Beneficiary), the Chief Electrical Inspector and any other statutory authorities as applicable for all the Project approvals
- D 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.

- E Safety management to be strictly complied with by the Contractor/Bidder throughout implementation activity.
- F First-aid medical facilities at the Site during construction to be provided by the Contractor/ Bidder(s)
- G All local labour, employment, and other issues shall be handled independently by the Contractor/ Bidder(s)
- H 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).
- I I. 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,

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

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

4.34

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

4.35 Term

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

4.36 Electricity Generation

The Contractor/Bidders 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.

4.37 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.

4.38 Failure to rectify the problem

- a). 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 discussed and agreed between the bidder and the respective Beneficiary.
- b) 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.

4.39 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.
- Make of Module, and PCU in technical bid will be indicative, bidder can use its equivalent as per MNRE test report/guidelines and submits its details test report before execution.

4.40 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 ElectricitySupply) 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).	Photovoltaic system should not inject DC power more than0.5% of full rated output at the interconnection

	Regulations 2013	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 Empaneled Bidder before work starts on the site if desired by the beneficiaries. These should be approved by owner of the respective building.
 4. Any installations on the terrace should be planned and executed in such a way that water proofing will not be disturbed and harmed. In case any area water proofing is affected it will be Bidders's responsibility to correct it and put it right.
5. CONFIRMATION TO MNRE TECHNICAL SPECIFICATIONS AND STANDARDS

The Tenderer should ensure that all components and systems used under this Scheme shall strictly adhere to the Technical Specifications and Guidelines issued by MNRE, and as amended from time to time.

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 (PV) Modules Photovoltaic
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 the 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 (as applicable)	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): a) Low-voltage Switchgear and Control-

PART -5 : WARRANTY AND MAINTENANCE

1. The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 12 years and 80% at the end of 25 years).
2. The mechanical structures, electrical components including evacuation infrastructure and overall workmanship of the Solar PV Rooftop power 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 3 days.
6. Normal and preventive maintenance of the SPV Rooftop Power Plant systems will also be the duties of the deputed personnel during quarterly maintenance visits.
7. During operation and maintenance period of the SPV Rooftop Power Plant 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, whatsoever, the supplier shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component.
8. Vendors for supply and installation of the RTS shall establish a service centre in each District. The vendor shall put contact details of service centre (at any suitable place) at every project place. In case if it is not economically viable for an individual vendor then Group of vendors can establish service Centre in each District. Their contact details will be made available on the website. iv. These service centers have to provide services to the RTS owners within the timelines specified in the contract, free of cost for first five years (Warranty period) of commissioning of the RTS. Non-performing/Under-performing PV Panels will be replaced free of cost in the warranty period. Non-compliance of the service standards by the vendor will make it ineligible for future work orders by the Government and may be blacklisted.

PART: 6		
e-tender No: 01/UPNEDA/Grid Connected/Rooftop/2016		
Technical BID		
	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	Solar Power Conditioning Unit	
	Manufacturer :	
	Type String type/central	
	Operating voltage (DC)	
	Operating voltage AC (pure sine wave)	
	Details of Indicators provided	

(Signature of Bidder)
with seal

PART B (Financial Bid)
e-tender NO. 01/UPNEDA/SPV/GCRT/2019

Name of the Firm: -----

Design, Supply, Installation, Testing and Commissioning of Grid Connected Rooftop Solar Photovoltaic Power Plant and power evacuation system and other necessary infrastructures including 5 years Comprehensive Warranty and Maintenance of Grid Connected Rooftop Solar Photovoltaic Power Plants and Power Evacuation system in various Districts in the State of Uttar Pradesh as per technical specifications, Terms and Conditions of the tender document :-

Sl. No	Description	Cost of SPV Power plant per kWp including CMC for 5 years (Rs)
1	PART A :1KW Upto 10 kWp	
2	PART B: 11kWp to 25 kWp.	

NOTES:

1. Certified that rates quoted above are as per the requirement, specification terms & condition mentioned in the e-tender document.
2. The rates are inclusive of all taxes & duties, storage, transportation up to site, insurance etc., and any other job required to properly execute the work.
3. MNRE has issued the current year bench mark price for solar rooftop systems, hence the price quoted should not be more than the bench mark price.

(Signature of Bidder)
With seal

To be uploaded in Part B.

Other document / condition, terms if enclosed will liable to be rejection of bid.

FORMAT FOR BID SECURITY (EMD)

(To be submitted separately for each State and for each Model viz CAPEX)

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

Ref. _____

Bank Guarantee No. _____

Date: _____

In consideration of the -----[Insert name of the Bidder] (hereinafter referred to as 'Bidder') submitting the response to Tender document inter alia for selection of the Project for the capacity of MW [*Insert Capacity*] in response to the Tender document No. _____ dated _____ issued by UPNEDA (hereinafter referred to as UPNEDA) and UPNEDA considering such response to the Tender document of.....[*insert the name of the Bidder*] 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 UPNEDA*] forthwith on demand in writing from UPNEDA or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees _____ [*Insert amount not less than that derived on the basis of Rs. ___ Lakhs per MW of cumulative capacity only, on behalf of M/s. _____ [Insert name of the Bidder]*].

This guarantee shall be valid and binding on this Bank upto 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 _____ [*insert date of validity in accordance with Bid document*]. UPNEDA shall be entitled to invoke this Guarantee till _____ [*Insert date which is 30 days after the date in the preceding sentence*].

The Guarantor Bank hereby agrees and acknowledges that the 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 Bidder*] 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 Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to enforce any security held by UPNEDA or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

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 this Bid document*] with an additional claim period of thirty (30) days thereafter. 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__

UPNEDA Account details for the purpose of BG

UPNEDA Account no for B G purpose: 2185286335

IFSC: CBIN0283946

Branch: NCEDA, Gomati Nagar, Lucknow

FORMAT FOR 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 MW under Roof Top scheme in response to the Tender document No _____ dated..... issued by UPNEDA(hereinafter referred to as UPNEDA) and UPNEDA considering such response to the Tender document of[insert the name of the Successful Bidder] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Solar Power Project of the Solar Power Developer 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 authorised 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.

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 grid connected Roof top solar PV scheme in selected States in India in response to the BID DOCUMENT. No..... dated issued by UPNEDA(UPNEDA), New 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, New Lucknow and providing information / responses to UPNEDA, New Lucknow representing us in all matters before UPNEDA, New Lucknow and generally dealing with UPNEDA, New 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 executant company)**

through the hand of Mr.

duly authorized by the Board(vide Board resolution No _____) to issue such Power of Attorney

Dated this **day of**

Accepted

Signature of Attorney

(Name, designation and address of the Attorney)

Attested

.....

(Signature of the executant)

(Name, designation and address of the executant)

.....

Signature and stamp of Notary of the place of execution

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

WITNESS

i)

(Signature)

Name.....

Designation

ii)

(Signature)

Name.....

Designation

Notes:

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

Format 4

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.	Details of SPV systems installed during 2016-17, 2017-18, 2018-19 and till date of submission of BID.	Year	Deptt./Agency /Beneficiary for which work carried out	size of Work in kW	Cost of works in { Amt in Lakhs.}	Copy of work order
1.						
2.						
TOTAL :						

**SIGNATURE & SEAL OF Bidder
Certified by CA**