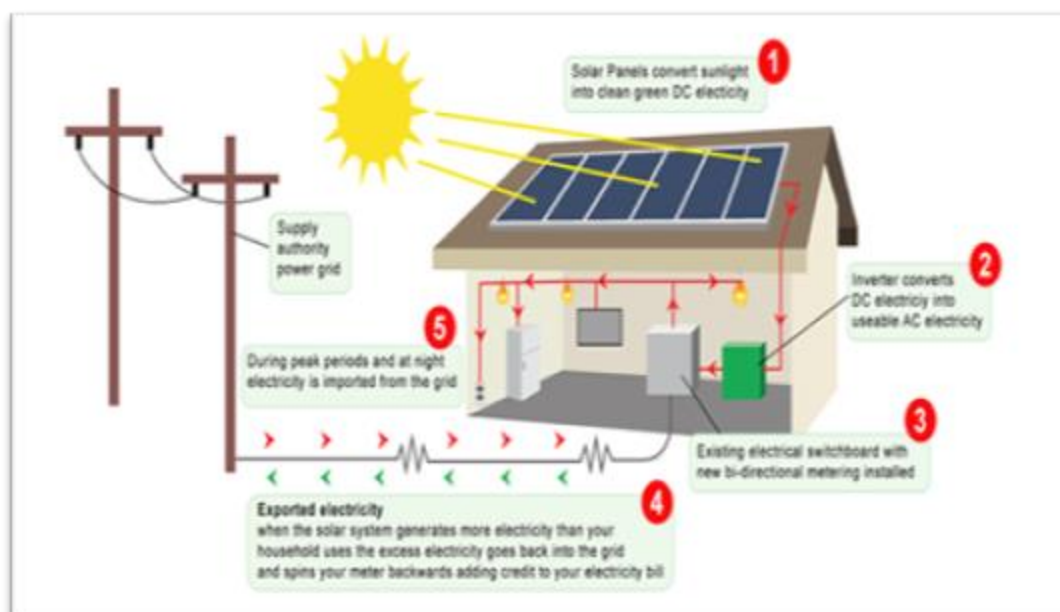


e-TENDER DOCUMENT FOR

Rate Contract for Grid Connected Rooftop Solar Power Plants for the Design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance for 25 years of 25 kWp to 500 kWp Grid Interactive Rooftop Solar Power Plants in various Government Buildings/Offices in the State of Uttar Pradesh in RESCO Model
Tender No.- 02/UPNEDA/SPV/GCRT/RESCO/2018



Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)

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

Vibhuti Khand, Gomti Nagar, Lucknow, U. P.

Tel. No. 91-0522-2720652, Tele Fax: 0522-2720779, 2720829

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

TABLE OF CONTENTS	
PART-A	
TOPIC	PAGE-NO.
PART-1	
e-tender Notice	3
Definations	4
Covering Letter	7
Checklist of Annexure	8
Particulars of e-tender	10
General Particulars of Bidder	11
Declaration by Bidder	12
PART-2 Instructions to Bidders	
Section -1 The e-tender document	13
Section-2 Eligibility condition	16
Section-3 Preparation of e-tender	23
Section-4 UPLOADING of e-tender	25
Section -5 e-tender opening and evaluation	26
Section -6 Procedure for Finalizations of BID	27
PART-3	29
General conditions of contract	
PART-4	37
Scope of work & Technical specification	
PART-5	55
Warranty And Maintenance	
Format for Qualification Requirement	56
PART-6	57
Technical Bid	
PART-B	58
Financial Bid	

**Short Term
e-tender Notice**

02/UPNEDA/SPV/GCRT/RESCO/2018

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 Contract for Grid Connected Rooftop Solar Power Plants for the Design, manufacture, supply, erection, testing and Commissioning including warranty, operation & maintenance for 25 years of 25 KWp to 500 KWp Grid Interactive Rooftop Solar Power Plants in various Government Buildings/Offices in the State of Uttar Pradesh under OPEX (RESCO) Model. The rates will be applicable to all the technically qualified firms who wish to provide their services on the lowest quoted prices which are received under this offer. The selected firms will have the opportunity to execute the projects for which the sites can be identified by the firms or on the sites allocated by UPNEDA under the Grid Interactive Roof top Solar Power Plants in accordance with technical specification and various other requirements as per latest directions / guidelines of MNRE. The tender document is available at e-Procurement website <http://etender.up.nic.in>. Interested bidders may view, download the e-Bid document and submit their e-Bid online up to the date and time mentioned in the table below:

(b)	e-Bid submission end date & Time	9-08-2018 up to 06.30 PM
(c)	Online technical e-Bid Opening date & time	10-08-18 at 11.30 PM
(d)	Online financial e-Bid Opening date & time (Only of technically qualified bidders)	14--08-2018 at 12.30 PM
(e)	Venue of opening of technical & financial e-Bids	UPNEDA Head Office, Vibhuti Khand, Gomti Nagar, Lucknow-226010

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 U.P. Electronics Corporation Ltd. (UPLC), 10, Ashok Marg, Lucknow (UP) for their Registration. The bidders need to submit the proof/cost of e-Bid document fees and EMD as stated in the above table 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 blank 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. Aggregate capacity 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

2. DEFINITIONS

The words and expressions beginning with capital letters and defined in the E-BID DOCUMENT shall, unless repugnant to the context, have the meaning ascribed thereto herein. In absence of availability of definitions in the foregoing references, the capitalized terms shall be interpreted in accordance with the Electricity Act 2003, the CERC (Terms and Conditions of Tariff) Regulations 2012, the UP Supply Code or any other relevant electricity law, rule or regulation prevalent in India, as amended or re-enacted from time to time, in that order. The following terms are defined for use in the E-BID DOCUMENT:

“Appropriate Commission” shall mean the Uttar Pradesh Electricity Regulatory Commission 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;

“Bidder” shall mean a Bidding Company complying with the provisions of Companies Act, 1956;

“Bidding Company” shall refer to such single company that has submitted the Bid in accordance with the provisions of the e-bid 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 RFS.

“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 Format 1;

“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;

“EPC” shall mean engineering, procurement and construction of a plant or facility with obligation to meet minimum performance standards along with requisite warranties for the plant or facility;

“Financial Bid” shall mean the e-Bid, containing the Bidder’s Quoted Capital Cost for different Category 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 1000 KW 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” Owner of the project” shall mean legal owner of all equipment’s of the project. Owner of the project should enter into a PPA with the consumer (s) of power for supply of solar power for at least 25 years from the date of Commissioning of 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

“Rs. or ₹” shall mean Indian rupees;

“Solar Company” shall mean the Selected Bidder who submits the Security deposit /Performance Guarantee and implements the rooftop solar photovoltaic power generation plant in accordance with the scope of work as elaborated in this tender.

“Statutory Auditor” shall mean the auditor of a company appointed under the provisions of the Companies Act, 1956 or under the provisions of any other applicable governing law;

“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. $PR = (\text{Measured output in kW} / \text{Installed Plant capacity in kW}) * (1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2)$.

“RESCO” shall mean Renewable Energy Service Companies

“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;

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

“Wp” shall mean Watt Peak.

“1MWp for the purpose of conversion in kWp shall be considered as 1000kWp

“O&M” shall mean Operation & Maintenance of 25 years for RESCO model of Rooftop Solar PV system.

“Levellized Tariff” shall mean the tariff offered by the Bidder for 25 years for the Scope of work as per RFS document subject to the maximum levellized tariff of 25 years of as per bid.

“RESCO model” shall mean where the bidders intend to take a rooftop owned by some other entity on mutually agreed terms and conditions including lease agreement from the roof top owner(s) and enters into the PPA with rooftop owner for supply of Solar power for 25 years at a tariff as per bid from the date of Commissioning of project.

“PPA” shall mean Power Purchase Agreement to be executed between successful bidder / project developer and the rooftop owner.

3. Covering Letter:

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

.....
.....

To:

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

Subject: - Offer in response to e-tender specification No:
02/UPNEDA/SPV/GCRT/RESCO/2018

Sir,

We hereby submit our offer in full compliance with terms & conditions of the above e-tender. A blank copy of the e-tender, duly signed on each page 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 25 years Operation, Comprehensive warranty & maintenance of Solar Grid connected Rooftop PV Power Plants including power evacuation system of more than KWp capacity in 8 months. (Supporting document in proof of capacity should be attached) . Based on eligibility and capacity to carry out work within the specified time of this bid, We are quoting as per following:

Minimum capacity of single plant for which quoted is applicable.	-----KW
capacity quoted for allocation	

Accordingly we are depositing the EMD of RS----- in the form of DD/FD/BG valid for-----months.

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 of at least 50 KWp capacity 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 \geq 500 KWp KWp 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 . d) PID teat report in case system voltage more than 500 Volt.	
	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	
5	Annexure-V	Overall Average Annual Turnover of the Company/Firm/Corporation in the last three financial years (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	
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 Guaranteed 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/CGRST/RESCO/2018
2	Particulars of the work	Rate Contract for Grid Connected Rooftop Solar Power Plants under empanelment scheme for the Design, manufacture, supply, erection, testing and Commissioning including warranty, operation & maintenance for 25 years of 25kWp to 500 kWp Grid Interactive Rooftop Solar Power Plants in various Government Buildings/Offices in the State of Uttar Pradesh in RESCO Model.
3	Period of Agreement and work	▪ 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

- 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.
- 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>.
- 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.
- 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.
- 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.
- ~~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.~~

7. (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/GCSRT/RESCO/2018)

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 12 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 25 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 8 months and..... KWp in a year 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 Bid 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 the Invitation for e-tender by -----
- 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://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/Empaneled 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, 2014 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” 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 25MW Grid Connected Rooftop Solar PV System under Achievement Linked Incentive Scheme for Government sector in RESCO models.

Under RESCO Mode, the entire system is owned by the developer. Responsibility of O & M for the system lifetime (25 years) is also with the developer. Rooftop owners may consume the electricity generated, Excess generation may be exported to the grid under net metering facility. The rooftop owner has to pay a pre-decided tariff on a monthly basis for energy generated from the solar power plant.

Eligible Beneficiaries:

(i)	Government Buildings	Buildings of both Central & State Government Local Government covering all Government Offices.
(ii)	Government Institutions	Government Institutions, Public Sector Undertakings, all buildings owned by Government directly or by any Government owned societies, companies, corporations, Institutions or Organizations, Government educational/ health institutions

The Incentive Structure applicable is tabulated below:

Sl.No	Achievement vis-à-vis Target Allocation	Incentives for General Category States
1	80% and above within the sanctioned period	INR 16,250/- per KW
2	Below 80% and upto 50% within the sanctioned period	INR 9750/- per KW
3	Below 50% / Delayed commissioning up to 6 months beyond the sanctioned period	INR 6,500/- per kW

The successful bidders will be provided Incentive of maximum INR16,250/-per KWp or as per new achievement Linked incentive declared by MNRE for current year 2018-19, if completed within time schedule.

UPNEDA hereby invites interested companies to participate in the bidding process for the selection of Successful Bidder(s) for installation of “Grid connected solar rooftop power plants of 25MW under RESCO mode in various District of Uttar Pradesh.

The bidding is in levelized tariff. In this part, successful bidders will be provided Incentive of maximum INR16,250/-per KWp if completed within time schedule otherwise it will be reduced as per above table. Bidders will be required to furnish year on year tariff for 25 years starting from the date of commissioning of the Project. Tariff stream quoted by the bidder shall then be levelized with a discounting rate of 11%. Capacity will be allocated based on the lowest levelized tariff for 25 years quoted by the bidder.

The size of each project shall be minimum 25 KWp or as offered by the bidder and above. One project may however comprise of several rooftop units in one city/town. Each rooftop unit can separately connect with the grid and may have separate meters.

Mode of Execution of Programme:

The basis of evaluation of the bids shall be the cost/rate quoted in the Price Schedule. To further clarify, installation and commissioning cost and taxes etc. shall be inclusive to the cost of supply of complete system including 25 years comprehensive maintenance for comparison and evaluation. Proposers are required to quote rate / cost on firm basis and no price variation on any account shall be considered.

The selected manufacturers/authorized suppliers may also identify beneficiaries to supply, install, commission systems and provide maintenance services for 25 years with free replacement warranty on spare parts against manufacturing defects for five years. They shall also be required to set up their operation, repair and maintenance centers for providing effective repair/maintenance services to the beneficiaries / users.

The Programme shall be carried out as given here under:-

- (i) The contractor shall be allowed to install the systems conforming to the specifications /mentioned in this document after authorization by UPNEDA.
- (ii) For this UPNEDA shall give specific targets / limits to each selected manufacturers and fix tariff for sale of systems to the user (beneficiaries).
- iii) The work covers Design, supply, installation, commissioning and comprehensive maintenance for TWENTY FIVE years.
- (iv) UPNEDA reserves the right to allot any area(s) / districts to any approved supplier firm if any among the all approved suppliers.

BID INFORMATION SHEET

Document Description	<ul style="list-style-type: none"> ▪ The bidding process under this Rooftop scheme is for 25 MWp of RESCO Model. ▪ Minimum bid capacity shall be -1MW and maximum-12.5 MW
Broad Scope	<ul style="list-style-type: none"> ▪ Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning of the grid connected rooftop solar PV project including Operation and Maintenance (O&M) of the project for a period of 25 years after commissioning of project. ▪ Total timeline for the above Scope of Work up to Commissioning of all projects is 8 Months only.
Tender Fee	Rs.29,500/- (Rs. Twenty nine thousand and five hundred only) including GST. The tender fee is to be furnished through Demand Draft (DD) drawn in favor of “Director UPNEDA”, payable at Lucknow.
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.

Eligibility:

General eligibility	Technical Eligibility	Financial Eligibility	EMD
<p>The Bidder should be a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment there to and engaged in the business of Solar Power/</p>	<p>1.The bidder should have minimum three years' experience of successful installation of solar power plant projects including grid interactive.</p> <p>2. The Bidder should have designed, supplied, installed & commissioned at least one Grid connected Solar PV Power Project having a capacity of not less than 50 kW which should have been commissioned at least six months prior to Techno-Commercial Bid Opening date. The list of project commissioned at least 6 months prior to Techno-Commercial Bid Opening date, indicating whether the project is grid connected, along with a copy of the Commissioning certificate and Work order / Contract/ Agreement from the Client/Owner shall be submitted</p> <p>3.The bidder should have cumulative experience of executing > = 500 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/owner of the plant towards the satisfactory installation and functioning of the power plants to be furnished by the bidder.)</p>	<p>The bidder has financial capability to take up the proposed work to be supported by Audited balance sheet for three years from 2014-15, 2015-16, 2016-17 or 2017-18 (in case of 2017-18, provisional balance sheet along with CA certificate should be attached) and (a) The Minimum Average Annual Turnover (MAAT) of the bidder in the last three financial years should be INR 2 Crores per MW (Indian Rupees Two Crores per MW). This must be the individual company's turnover and not that of any group of Companies.</p> <p>c. The bidder should have positive net worth</p>	<p>(Rs. 6 Lakhs per MW) X Bid Capacity quoted in MWp</p>

JOINT VENTURE CRITERIA

In case a bid is submitted by a Joint Venture (JV) of two firms as partners, they must meet the following requirements:

- i) The lead Partner shall meet, not less than 51% of the financial eligibility criteria.

- ii) All the partners of the JV shall collectively meet 100% of Technical Experience criteria
- iii) The net worth of each Partner of JV should be positive.
- iv) However, all the partners shall jointly meet the 100% financial eligibility criteria.

Note: (i) A Joint Venture (JV), if incorporated as a Company, is required to submit Bid Security in the name of Joint Venture only. In case of Consortium or a JV has not formed a Registered Company, the Bid Security shall be submitted in the name of the Lead Partner.

- (ii) JV is also required to submit form of Power of Attorney and Form of undertaking by the JV partners .
- (iii) JV is also required to declare scope of work to be executed by each partner of JV.

Strict adherence to the formats wherever specified, is required. 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 date of issue of Letter of Allocation(s) on bidder’s request. 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 formula applicable to calculate the Earnest Money amount will be:

EMD amount = As mentioned in above table

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 denominated in Indian Rupees and shall:

- i. At the Bidder’s option, be in the form of either a demand draft, or a bank guarantee .
- ii. The Successful Bidder shall sign and stamp the Letter of allocation and return the signed & stamped duplicate copy of the same to UPNEDA within 7 days from the date of its issue.

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 the RFS 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”.

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:

$$\text{PBG amount} = (\text{Rs. 16.25 Lakh}) \times \text{Allocated Capacity in MWp.}$$

THE PBG is exempted for Micro and small firm setup and registered in U P . The certificate issued by district industries office for having MSE setup is mandatory to avail the exemption of EMDD and PBG.

The Performance Security shall be denominated in Indian Rupees and shall be in one of the forms: A demand draft, or a bank guarantee.

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

If the Successful Bidder is not able to commission the projects to the satisfaction of Consumer/UPNEDA, PBG amount, pro-rata to the capacity not commissioned by the Successful Bidder. However, Hundred percent (100%) PBG amount furnished for the Sanctioned Capacity, if the Successful Bidder fails to Commission the Projects(s) to the satisfaction of UPNEDA, for the already identified locations, which are notified by UPNEDA for which Allocation letter/Sanction letter has been issued.

In all the above cases corresponding unidentified/non-commissioned capacity shall stand cancelled.

The Performance Security shall be valid for a minimum period of 24 Months from the date of issue of allocation letter (s) and shall be renewed/ extended till the completion of one year of O&M period. The Performance security shall be released after 1 year of successful operation of plant and with the compliance of entire obligations in the contract from the date of commissioning.

The bidder shall be responsible for Operation and Maintenance of the Roof top Solar PV system for a period of 25 years, during which UPNEDA will monitor the project for effective performance in line with conditions specified elsewhere in the bid document.

The rooftop SPV power plant must get electrical safety inspection certificate for the system more than 10 KW capacities.

Intimation to the concerned DISCOM : All the bidders shall intimate the concerned DISCOMs regarding implementation of grid connected roof top solar PV projects as per the given format in Annexure-M and submit the copy of same to UPNEDA for the purpose of release of Incentive.

The Incentive for the project executed under this scheme shall be provided by the MNRE only and no other incentive can be claimed by the bidder/rooftop owner from other Agencies including State Government / Ministries under Central Government.

This is a ZERO Deviation Bidding Process. Bidder is to ensure compliance of all provisions of the Bid 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.

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 in the form of Bank Guarantee valid for a period of 24 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, Public sector Bank, Private Sector scheduled Bank of RBI. Bank Guarantee shall be in favor 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. 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.

3.9 PROJECT COST /LEVELLIZED TARIFF

- 3.9.1 The Levellized tariff shall include all the costs related to Scope of Work. Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid

Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 25 years goods and services including spares required if any during O&M period. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.

- 3.9.2 The levelized tariff shall remain firm and fixed and shall be binding on the Successful Bidder. No escalation will be granted on any reason whatsoever.
- 3.9.3 The levelized tariff shall be inclusive of all duties and taxes, insurance etc .The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable
- 3.9.4 Solar Energy Corporation (SECI) has discovered the levelized tariff of Rs. 3.91 per Kwhr during 2017-18 for Uttar Pradesh; hence the current tariff should be quoted lower than Rs.3.91/-
- 3.9.5 The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 25 years.

(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.
- c) The lowest rate (i.e. L-1) shall be the rate be awarded the contract.

6.2 Finalization of Empanelment:

- a) The lowest rate (i.e. L-1) for each category received (and in turn approved by the competent authority) would be the “Approved Rate”.
- b) “Approved Lowest Rate” for each category would be offered to those lowest bidders for such category (i.e. to L-2, L3 and so on) having price not more than 15% of lowest approved rates (L1) will be empaneled.
- c) L1, The lowest bidder will be declared as the successful bidder. The 50% of the capacity or the bidder’s quoted capacity whichever is lower shall be allocated to the L1 successful bidder. All the bidders shall have to match the price of L1 Bidder No firm will be awarded more than 50% of for each firm category. In case in any bidder/Firm category the number of firm will be less than 2 in such case L1 will get at least 10% more allocation than others.
- d) For further allocation, (after allocating the capacity to the L1 bidder) UPNEDA shall arrange the bids in the ascending order i.e. L2, L3, L4 ___ and so on (L2 being the second lowest quote) and start allocating the balance capacity (subject to matching of price of L1 by the bidder) in the ascending order as mentioned above. UPNEDA shall allocate the capacity until the tender capacity is fulfilled. Also, no bidder will be allocated more than 20% of total capacity irrespective of its proposed capacity except L1.
- e) In MSME category the maximum allocation will be 6.5% of total capacity and one firm will not get more than 20% of it.
- f) 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 at the time of awarding the contract to increase or decrease the quantity of goods and locations of supply without any change in price or other terms and conditions.

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

6.6 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.

6.7 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.

6.8 AWARD OF WORK CONTRACT

Before capacity allocation as approved supplier, an agreement shall be signed between UPNEDA and the tenderer. The denial of the lowest bidder to undertake the whole work shall be treated as breach of contract and UPNEDA may forfeit EMD/ Security amount submitted by him.

6.9 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 notice 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 payment of Security Deposit, the name of successful bidder(s) with price 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 7 days of receipt of Installation & Commissioning report by firm. 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 after rectification /replacement shall be borne by the bidder.

Signature of Bidder
with seal

PART 3: GENERAL CONDITIONS OF CONTRACT

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. All the allocated work shall be completed on turkey basis within 8 months on Build own, operate and Maintain basis as RESCO and supply of Solar Power at the provided tariff to consumers in the State of Uttar Pradesh, .from the date of allocation of capacity. However “UPNEDA” may in case of urgency ask the bidder to complete the work earlier, with the mutual consent of the contractor/ bidder. 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 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 2months 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 subject to the completion period as provided in the clause 1.3.
- 1.6 The contractor/ bidder, (i.e. the successful bidder), may operate in the State of Uttar Pradesh through a single authorized dealer for execution of the orders placed on authorized dealer. It will be the sole responsibility of the contractor/ bidder, to execute orders placed as per time schedule, and to ensure quality parameters, specifications and other requirements provided in the e-tender document and as per agreement.
- 1.7 The interest of the work and the programme, agreement executed between the contractor/bidder and the “UPNEDA” may be extended to a mutually agreed period, if the need so arises. It shall be sole responsibility of the contractor/ bidder to get verified the quality & quantity of the supplied material at the site of delivery.

2 LIQUIDATED DAMAGES (For work order placed by UPNEDA)

2.1 If the Bidder fails to commission the sanctioned project within specified time i.e. 8 months from the date of agreement/allocation, incentive shall be disbursed in line with provisions of the bid documents. If project get delayed by more than 06 (Six) months from scheduled commissioning date, no incentive shall be disbursed. However, further period of 03 (three) months shall be allowed to Bidder for completion of entire unexecuted allocated capacity and penalty/LD on per day basis calculated for the Performance Security on a three months period would be levied. After 6 months the project will get cancelled and the total PBG would be forfeited.

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/ bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to event of force majeure circumstances.

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 fright 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 what so ever shall arises between "UPNEDA" and the contractor/ bidder, in the connection with the agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of existence of such question, dispute or difference and the same shall be referred to the sole arbitration of the Principal Secretary/Secretary of the Uttar Pradesh or a person nominated by him not below the rank of Secretary. This reference shall be governed by the Indian Arbitration and Conciliation Act 1996, and the rules made there under. The award in such arbitration shall be final and binding on both

- the parties. Work under the agreement shall be continuing during the arbitration proceedings unless the “UPNEDA” or the arbitrator directs otherwise
- 9 “UPNEDA” may at any time by notice in writing to the contractor/ bidder either stops the work all together or reduces or cut it down. If the work is stopped all together, the contractor/bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. Such expenses shall be assessed by “UPNEDA”, whose decision shall be final and bidding on the contractor/ bidder. If the work is cut down the contractor/ bidder will not be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.

10 INSPECTION AND TESTS

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

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 twenty five (25) years from the date of Commissioning of the plant.
- 11.4 Any defect noticed in the power plant during the period of twenty five (25) 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 Beneficiaries/ 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 Beneficiaries/ 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 The contractor/ bidder shall furnish to the Primary Beneficiary and UPNEDA ,I 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.
- 11.12 The Plant shall be deemed to be commissioned after 120 hours of continuous generation of electricity.

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 WHARF AGE, ETC

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

16. INSURANCE

- a. The Bidder shall be responsible and take an Insurance Policy for transit-cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The bidder shall also take appropriate insurance during O&M period.
- b. The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party/material/equipment/properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder

- c. In case of any loss or damage or pilferage or theft or fire accident or combination of the said incidents etc. under the coverage of insurance, the Contractor shall lodge the claim as per rules of insurance. Any FIR required to be lodged to local Police Station shall be the responsibility of the Contractor.
- d. The Contractor shall arrange to supply/rectify/recover the materials even if the claim is unsettled for timely completion of the Project. The final financial settlement with the insurance company shall be rested upon the Contractor.
- e. Insurance as applicable during operation of Project for covering risk against any mishap to its workmen. The UPNEDA/Consumer will not be responsible for any such loss or mishap. All other insurance like, Contractor All Risk, Erection All Risk, insurance against theft and acts of GOD, as required for the construction and O&M of the plant and to indemnify the UPNEDA/consumers equipment/ material and resources shall be borne by the contractor. Fire insurance is to be arranged by the Contractor up to the twenty five years of O&M of the Contract.

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 and GST 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 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
- All the consent, clearance and approvals
- Plant charging/ Commissioning certificate
- Agreement / memorandum signed with distribution licensee for Interconnection with the distribution system
- Agreement / PPA signed with Beneficiaries
- Photograph of site before installation and after installation

25. PAYMENTS:

3. The eligible Central Financial Assistance (CFA) of MNRE shall be claimed as per MNRE guidelines or the CFA proposals shall be processed. UPNEDA may release the eligible CFA to beneficiary based on MNRE guidelines on sanction by MNRE and availability of funds as follows:-

Sl. No	Achievement vis-à-vis Target Allocation	Incentives for General Category States
1	80% and above within the sanctioned period	INR 16,250/- per KW
2	Below 80% and upto 50% within the sanctioned period	INR 9750/- per KW
3	Below 50% / Delayed commissioning up to 6 months beyond the sanctioned period	INR 6,500/- per kW

- i) The INR 11,375/- per KWp (70% of the amount INR 16250/- as mentioned in above table at sl no 1) incentive shall be disbursed after successful commissioning and acceptance of project and balance INR 4875/- (30% of the amount INR 16250/-) incentive after completion of first year of successful O&M, if project is commissioned in 8 month.
- ii) Similarly, incentive amount shall be disbursed in above ratio for delay beyond 3 month of 8 month initial scheduled time as per amount mentioned at serial no2 of above table.
- iii) Similarly, incentive amount shall be disbursed in above ratio for delay beyond 6 month as per amount mentioned at serial no3 of above table

In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of "UPNEDA" shall be final.

26. PLANT PERFORMANCE EVALUATION :

UPNEDA may monitor the performance of the grid connected SPV Power Plants. 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. The bidder should send the periodic plant output details to consumer/UPNEDA for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions. This can also be monitored by remote monitoring facilities provided with the system; firm should provide the login and password to both UPNEDA/consumer.

27. PROJECT INSPECTION.

- Project(s) shall be got inspected by the bidder from the list of empanelled experts/UPNEDA 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.
- UPNEDA reserves the right to do sample inspection checks for the projects commissioned by the Bidder.
- UPNEDA may also depute a technical person(s) from its list of empanelled experts for inspection, Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturer's facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required.

28. OPERATION OF THE SYSTEM DURING WEEKENDS AND GENERAL HOLIDAYS AND CALCULATION OF CUF:

- 1 During grid failure, the SPV system stops generating. Any instances of grid failure will need to be mentioned in the monthly report. Then the period will be excluded in calculation of CUF.

2 The contractor/ bidder shall furnish to UPNEDA all documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, report Individual copies of the approval of the Electrical Inspectorate or concerned officer of the respective distribution licensee for interconnection of plant with the distribution system.

3 The Plant shall be deemed to be commissioned after 120 hours of continuous generation of electricity

29. COMPLIANCE WITH LABOUR REGULATIONS

During continuance of the Contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State Government or Central Government or local authority and any other labour law (including rules), regulations, byelaws that may be passed or notification that may be issued under any labour law in future either by the State Government or the Central Government or the local authority

30. STATUTORY RESPONSIBILITY

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)

b). 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,

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

i. Electrical System approval (Chief Electrical Inspector)

ii. All equipment, accessories, materials, civil construction & erection works should comply with statutory requirements, IS and required and highlighted IEC standards.

iii. Statutory requirements for working at the Site like labour registration, workman compensation policy, ESIC etc. to be complied with by the vendor before deployment of resources at the Site

31. PAYMENTS for Energy supply:

Sale of Power Successful Bidder will sign a PPA as per annexure -A with User Authority for sale of Solar Power for 25 years. A copy of the same will be provided to UPNEDA.

32. Any other condition which is not mentioned in this document but if needed during execution of program shall be as per MNRE model bid document and guide lines for this scheme.

(Signature of Bidder)
with seal

PART -4 : SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

4.1 SCOPE OF WORK

The scope of work for the bidder include Identification of buildings/ rooftop of buildings for 25 years, Obtaining No Objection Certificate (NOC)” from Distribution Company (DISCOM) for grid connectivity, complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project including operation and maintenance (O&M) of the project for a period of twenty Five years after commissioning.

- a. Wiring up to Distribution Board from the SPV Rooftop system will be in the scope of the successful bidder(s).
- b. Performance testing of the complete system.
- c. The firm will submit 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, PPA with consumer and bill of material to UPNEDA rooftop website for release of CFA of MNRE subsidy.
- d. A leaflet containing the details of operation and the service centers shall be provided to each purchaser.

4.2 TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below as per MNRE guidelines. Any shortcomings will lead to cancelation of subsidy as decided by UPNEDA and the RESCO agreement will be terminated. Competent Authority’s decision will be final and binding on the bidder.

A Grid Tied Solar Rooftop Photovoltaic (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 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.

- Solar PV modules consisting of required number of Crystalline PV cells.
- 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 SOLAR PHOTOVOLTAIC MODULES:

Solar PV modules should be of the crystalline silicon type, manufactured in India. Detailed specifications of the solar PV modules are given below

Type	Crystalline silicon
Origin	Manufactured in India
Efficiency	$\geq 14\%$
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 250Wp.
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 inside the module.	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 bid. 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.

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 five (5) 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.
 - ii. The performance warrant shall be as mentioned above.

4.5 Solar PV Mounting Structure

The PV modules shall be mounted on fixed metallic structures having adequate strength and as per specifications given below which can withstand the load of the modules and high

wind velocities 150 km/hour. The array structure will be made of pre galvanized sheet steel of suitable size. The design calculation should be submitted from the chartered engineer/Govt labs. 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 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.

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 centers /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.

The maximum permissible capacity for rooftop shall be 500 KW for a single net metering point.

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 contractor.

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.

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 also be provided 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) AC three phase: Phases: **red, yellow, blue**; neutral: **black** Earth wires: **green**
- m) **Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipe sleeve.**
- n) Cable conductors shall be terminated with tinned copper end-ferrules to prevent fraying and breaking of individual wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instructions of the manufacturer, which in most cases will include the use of special connectors.
- o) Cable lugs and end –ferrules for all cable conductor and wire terminations shall be crimped with crimping pliers and end-ferrule pliers
- p) All cable ties shall be UV resistant.
- q) The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25years
- r) The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

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.

A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished

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 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 confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

4.22 DRAWINGS & MANUALS:

Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment. Approved ISI and reputed makes for equipment be used. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to UPNEDA/owners before progressing with the installation work

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. The bidder should submit the array layout drawings along with Shadow Analysis Report to UPNEDA/Owner for approval. UPNEDA reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any to consumer/UPNEDA.

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 upto 90% of 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 grid tied inverters above 20kW, self-certification by the manufacturer of the said inverter is acceptable.** UPNEDA reserves the right to ask for additional test certificates or (random) tests to establish compliance with the specified standards.

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 Primary 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 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) Building and Architectural Drawings approvals from relevant authorities/Primary Beneficiary Organisation
- 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, IS and required and highlighted IEC standards
- b) All statutory requirements for working at the Site like labour registration, workman compensation policy, ESIC etc. to be complied with by the vendor before deployment of resources at the Site.

4.34 OPERATION AND MAINTENANCE

4.34.1. The operation & maintenance of the plant would include wear, tear, overhauling, machine breakdown, insurance, replacement of defective modules, invertors, PCU's, spares, consumables & other parts for a period of five years. This shall also include operation and maintenance of the evacuation infrastructure, as well.

4.34.2. Undertake day to day checks and maintenance activities, on round the clock basis, required to be carried out, as a recommended practice by the manufacturer of the

equipment, on all the components of the power plant to minimize breakdowns and to ensure smooth and trouble free operation of the plant and to get maximum output from the panels. The supplier shall be responsible to carry out routine and preventive maintenance and replacement of each and every component / equipment of the power plant and he shall provide all labor, material, consumables etc. for routine and preventive maintenance at his own cost.

- 4.34.3. Carry out maintenance activities as a result of sudden failure/breakdown of any particular component or equipment. It shall be responsible to carry out breakdown maintenance of each and every component of the power plant and shall provide the required manpower, materials, consumables, components or equipment etc. for breakdown maintenance at his own cost irrespective of the reasons of the breakdown/failure.
- 4.34.4 Undertake major overhaul of any component or equipment of the plant necessary on account of excessive wear & tear. Such maintenance of plant and all civil structures shall normally be planned to be carried out on an annual basis. For this purpose a joint inspection by the Contractor/Bidder and concerned department shall be carried out of all the major components of the power plant, about two months in advance of the annual maintenance period, in order to ascertain as to which components of the power plant require maintenance.
- 4.34.5. Prepare and maintain records towards maintenance of the plant, electricity generation, electricity injected into the distribution system etc.
- 4.34.6. Undertake inspection of meter towards faultiness regular intervals, report to the concerned department and replace the meter with a meter of similar specification complying with the requirements of Central Electricity Authority/Uttar Pradesh Electricity Regulatory Commission/concerned Distribution Licensee at its own cost.
- 4.34.7. 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 Contractor/Bidder shall be responsible for undertaking the operation and maintenance of the plant for a term of five (5) years from the date of entering into hand-over agreement of the plant to respective Beneficiaries.
- 4.35.2 The term for operation and maintenance of the plant may be extended for another five years on mutually agreed terms and conditions and charges as quoted by the Contractor/ Bidder.

4.36 Electricity Generation

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

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. The Contractor/ Bidder(s) shall have to accordingly arrange for the specified meter and metering facilities. It shall also be responsible for the requisite testing and inspection of meters, if required at authorised testing facility. It shall also be responsible for required interactions with the distribution licensee and shall state progress to the concerned department.

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 discuss and agreed between the bidder and the respective Primary Beneficiary.
- b) If the Contractor/Bidder(s) fails to rectify the problem, the respective Primary 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 of Operation and Maintenance Contract

- The respective Primary Beneficiaries and the Contractor/ Bidder(s) shall, six (6) months in before the date of expiry of the operation and maintenance contract may negotiate to extend the contract for another term of twenty five (25) years.
- The bidder shall submit the test certificates / reports of PV modules and grid tie inverters of each capacity for the grid tied Solar Rooftop Power Plants from the notified testing agencies, as per “Section D”. For above 20kW Grid Tie Inverters, self-declaration certificates by the manufacturer shall be submitted.
- Bidders will have to make their own arrangements for the testing of their product as per the Standards given in the Tender through the notified Testing Agencies.
- Any additional make of components to be used will be allowed only with the written permission of UPNEDA. Any such change of components will be allowed provided those components have been certified by any NABL/IECQ accredited laboratories for compliance to the stipulated technical specifications.

Any bid received without the test certificates/reports will be summarily rejected for non-responsive to the tender condition.

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

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

Notes for Bidder:

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

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

<p>IEC 61215/ IS 14286</p> <p>IEC 61701</p>	<p>Design Qualification and Type Approval for Crystalline Silicon Terrestrial(PV) Modules</p> <p>Salt Mist Corrosion Testing of Photovoltaic (PV) Modules</p>
<p>IEC 61853- Part 1/ IS 16170: Part 1</p>	<p>Photovoltaic (PV) module performance testing and energy rating –: Irradiance and temperature performance measurements, and power rating</p>
<p>IEC 62716</p>	<p>Photovoltaic (PV) Modules – Ammonia (NH3) Corrosion Testing</p> <p>(As per the site condition like dairies, toilets)</p>
<p>IEC 61730-1,2</p>	<p>Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction , Part 2: Requirements for Testing</p>

Solar PV Inverters

<p>IEC 62109-1, IEC 62109-2</p>	<p>Safety of power converters for use in photovoltaic power systems –</p> <p>Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems</p> <p>Part 2: Particular requirements for</p>
---------------------------------	--

	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/maintain for a minimum of 25years from the date of commissioning and handing over of the system.
3. The Comprehensive Maintenance (within warranty period) shall be executed by the firm themselves or through the authorized dealer/ service centre of the firm in the concerned district.
4. Necessary maintenance spares for five years trouble free operation shall also be supplied with the system.
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 this 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 4 days.
6. Normal and preventive maintenance of the SPV Rooftop Power Plant systems will also be the duties of the deputed personnel during monthly 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, what-so-ever, the supplier shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component

A- FORMAT FOR MINIMUM GUARANTEED GENERATION

YEAR	Yearly Guaranteed Energy Generation											
	25Kw	30Kw	35Kw	40Kw	45Kw	50Kw	60Kw	70Kw	80Kw	90Kw	100Kw	120Kw
1 st Year												
2 nd Year												
3 rd Year												
4 th Year												
5 th Year												

YEAR	Yearly Guaranteed Energy Generation											
	150 Kw	200Kw	250Kw	300Kw	350Kw	400w	450Kw	500kw				
1 st Year												
2 nd Year												
3 rd Year												
4 th Year												
5 th Year												

Additional sheet may enclosed :

Solar Radiation of LUCKNOW for calculation of energy generation
Lucknow, Uttar Pradesh, India

Latitude : 26.85 Longitude : 80.95

Annual Average : 5.2 kWh/m²/day

Monthly Average Global Horizontal Irradiance

jan 3.49

feb 4.87

mar 6.26

apr 6.82

may 6.98

jun 6.04

jul 4.95

aug 5.13

sep 5.10

oct 5.20

nov 4.20

dec 3.33

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 :Crystalline/ multi crystalline	
	Manufacturer	
	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	
	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/CGSRT/RESCO/Rooftop/2018

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 25 years Operation, 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 under RESCO mode:-

Capacity Range:- from -----KW to -----KW

Sl. No.	Year of Operation	Tariff (INR / kWh)	Discount Factor @ 11%	Discounted Tari (INR / kWh)ff
1	2	3	4	5 = 3 * 4
2	1st Year (First Year)		1.000	
3	2nd Year (Second Year)		0.901	
4	3rd Year (Third Year)		0.812	
5	4th Year (Fourth Year)		0.731	
6	5th Year (Fifth Year)		0.659	
7	6th Year (Sixth Year)		0.593	
8	7th Year (Seventh Year)		0.535	
9	8th Year (Eighth Year)		0.482	
10	9th Year (Ninth Year)		0.434	
11	10th Year (Tenth Year)		0.391	
12	11th Year (Eleventh Year)		0.352	
13	12th Year (Twelveth Year0)		0.317	
14	13th Year (Thirteenth Year)		0.286	
15	14th Year (Forteenth Year)		0.258	
16	15th Year (Fifteenth Year)		0.232	
17	16th Year (Sixteenth Year)		0.209	
18	17th Year (Seventeenth Year)		0.188	
19	18th Year (Eighteenth Year)		0.170	
20	19th Year (Nineteenth Year)		0.153	
21	20th Year (Twentieth Year)		0.138	
22	21st Year (Twenty First Year)		0.124	
23	22nd Year (Twenty Second Year)		0.112	
24	23rd Year (Twenty Third Year)		0.101	
25	24th Year (Twenty Fourth Year)		0.091	
26	25th Year (Twenty Fifth Year)		0.082	
	Total		$X = X1+X2+X3...X25$	
Levellized Tariff for 25 years(in INR / kWh) = X/9.351				
Levellized Tariff for 25 years in Words				

<p>Note-1:- In case of discrepancy in the price bid (Excel File) and Electronic Form, the Price mentioned in the Excel File will prevail. Also It may be noted that the applicable incentive amount shall be released directly to successful bidder / developer in Indian Rupees (INR) only.</p> <p>Note -2: - The year of operation for first year shall be calculated w.e.f. date of commercial operation to 31st March of immediately succeeding financial year.</p> <p>Note -3: - The year of operation from second year up to twenty fifth year shall be calculated w.e.f. 1st April to 31st March of immediately succeeding financial year.</p>
<p>The levelized tariff shall be calculated up to three decimal places. However in case of a tie it may be expanded to break the tie</p>
<p>Tariff stream quoted by the bidder shall be levelized with a discounting rate of 11% only. document Bids not in conformity with above provisions will be rejected</p>

NOTES:

- Certified that rates quoted above are as per the requirement, specification terms & condition mentioned in the e-tender document.
- 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.

(Signature of Bidder)
With seal

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 2015-16, 2016-17, 2017-18 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

Annexure-M

INTIMATION TO DISCOM FOR IMPLEMENTATION OF GRID CONNECTED

ROOF TOP SOLAR PV PLAN TUNDER

SCHEME

To, Date:

(Designated Officer, DISCOM)

1.	Name of SPD/Implementing	
2	Name of the Consumer*	
Site Details*		
3	Address of the Rooftop Project Site:*	H No:
		Street Name:
		Village Name:
		District Name:
		State:
		Pin Code:
4	Phone / Mobile no. *	
5	Email Id:	
6	Electricity Consumer No. *	
7	Category) * (Please	Residential Commercial Industrial Educational Government
8	Installed Plant Capacity (kWp)*	

9	Connected load (kVA)*	
10	Voltage level at interconnection*	415 V 11kV above 11 kV
11	Nearest Transformer Details	Location: Capacity:
12	Details of Inverter with Anti-Islanding Protection* Phase (Φ): (Please) Galvanic Isolation (Please)	Make: Capacity: Single phase 3-Phase Inside Inverter Outside Inverter
14	Both AC and DC components of the SPV power plants Earthed*:	
15	CEIG Inspection required*	Yes No
16	If, Yes, Inspection date * (Attach copy of CEIG	
18	Bank Account details	Account No. Bank Branch
19	Date of Grid Synchronisation*	
20.	Net metering and grid connectivity (Attach acknowledgment from DISCOM,	Applied on: Fees Deposited On:

*to be provided mandatorily

It is certified that the information furnished above is true to the best of my knowledge.

FORMAT FOR BID SECURITY (EMD)

(To be submitted separately for each State and for each Model viz CAPEX/RESCO)
(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 RfS inter alia for selection of the Project for the capacity of MW [*Insert Capacity*] in response to the RfS No. _____ dated ____ issued by UPNEDA(hereinafter referred to as UPNEDA) and UPNEDA A considering such response to the RfS of[*insert the name of the Bidder*] as per the terms of the RfS, 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 RfS*] 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 RfS*]. 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.

Not with standing 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 RfS*] 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__

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 RfS inter alia for selection of the Project for the capacity of MW under Roof Top scheme in response to the RfS No _____ dated..... issued by UPNEDA(hereinafter referred to as UPNEDA) and UPNEDA considering such response to the RfS 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 RfS 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 RfS, 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 RfS]. 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 RFS. 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 RFS.

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 RFS.

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.

DECLARATION of AUTHORIZATION

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

I/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 ofto 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 the State in response to the RfS No dated issued by UPNEDA 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 undertaking is further authorized for making representations to the UPNEDA and providing information / responses to UPNEDA representing us in all matters before UPNEDA and generally dealing with CEL, Sahibabad in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned bid.

We hereby agree to ratify all acts, deeds and things done by our said undertaking pursuant to this undertaking and that all acts, deeds and things done by our aforesaid undertaking 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.

Signed by the with in named

.....(Insert the name of the executant company) Name: Company:

CONSORTIUM AGREEMENT

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

THIS Consortium Agreement ("Agreement") executed on this _____ day of _____ 2014 between M/s [insert name of Lead Member] _____ a Company

incorporated under the laws of _____ and having its Registered Office at _____ (hereinafter called the "Lead Member", which expression shall include its successors, executors and permitted assigns)

and

M/s _____ a Company incorporated under the laws of _____ and having its Registered Office at _____ (hereinafter called the "Technical Member", which expression shall include its successors, executors and permitted assigns), which expression shall include its successors, executors and permitted assigns)

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

WHEREAS the [Name of the Organisation](hereinafter called [NAME OF THE ORGANISATION] or [NAME OF THE ORGANISATION]) ,a section ____ Company incorporated under the Company's Act, 1956 has invited response to RFS No.

_____ dated _____ for Design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance for a period of 5 years under CAPEX and 25 years under RESCO of Roof Top Solar PV power system in selected States in India.

WHEREAS the RFS documents stipulates that the Lead Member may enter into a Technical Consortium Agreement with another Company / Corporate entity to fulfill the Technical Eligibility Criteria as stipulated in the RFS document. The Members of the Bidding Consortium will have to submit a legally enforceable Consortium Agreement in a format enclosed with the RFS document.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

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

1. We, the Members of the Consortium and Members to the Agreement do hereby unequivocally agree that (M/s _____), shall act as the Lead Member as defined in the RFS for self and agent for and on behalf of Technical Member _____.
2. The Lead Member is hereby authorized by the Technical Member of the Consortium to bind the Consortium and receive instructions for and on their behalf.
3. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all of their respective obligations. Each Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.
4. Subject to the terms of this Agreement, the Technical member shall be responsible for providing technical knowledge for "Design, Manufacture, Supply, Erection, Testing and Commissioning including Warranty, Operation

& Maintenance for a defined period as per RFS of Roof Top Solar PV power system in selected Cities/States in India to the lead member.

5. In case of any breach of any commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.
6. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at Lucknow alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
7. It is hereby further agreed that in case of being shortlisted, the Members do hereby agree that they shall abide by the terms & conditions of the RFS document.
8. It is further expressly agreed that this Agreement shall be irrevocable and shall form an integral part of the RFS submitted to [NAME OF THE ORGANISATION] and shall remain valid till completion of the job assigned to the Contractor.
9. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to RFS.
10. It is hereby expressly understood between the Members that no Member at any given point of time, may assign or delegate its rights, duties or obligations under this agreement without the explicit permission of [NAME OF THE ORGANISATION].
11. This Agreement
 - (a) Has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
 - (b) Sets forth the entire understanding of the Members hereto with respect to the subject matter hereof; and
 - (c) May not be amended or modified except in writing signed by each of the Members and with prior written consent of [NAME OF THE ORGANISATION].

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

For M/s-----[Lead Member]

(signature, Name & Designation of the person authorized vide Board Resolution Dated [●])

Witnesses:

1) Signature-----

2) Signature -----

Name:

Name:

Address:

Address:

For M/s-----[Technical Member]

(signature, Name & Designation of the person authorized vide Board Resolution Dated [●])

Witnesses:

MODEL POWER PURCHASE AGREEMENT (PPA)

BETWEEN

CONTRACTOR AND GOVT. ORGANIZATION, PSU

AND OFFICES
FOR

DESIGN, MANUFACTURE, SUPPLY, ERECTION, TESTING AND COMMISSIONING INCLUDING WARRANTY, OPERATION & MAINTENANCE OF GRID CONNECTED ROOF-TOP SOLAR PHOTOVOLTAIC AND SMALL SOLAR POWER PLANTS IN RESCO MODEL

This Power Purchase Agreement (PPA) is executed on ___ (date), ___(month),___ (year) at <location>between _____ Authorized representative of Purchaser<i.e. Government Organization, PSU and Offices>(detail address), (hereinafter referred to as "Purchaser")ANDM/s (Name of Power Producer) (CIN No. _____), a company incorporated under the Companies Act, 1956/2013 having its registered office at _____(detail address) (hereinafter referred to as "Power Producer" which expression shall, unless repugnant to the meaning or context hereof, be deemed to include its successors and assigns). The Purchaser and Power Producer are each individually referred to as a "Party" and collectively as the "Parties".

WHEREAS:

- A. The Power Producer has been notified as successful bidder by <Name of Expert PSU> for "Design, Manufacture, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance of ___ kWp Rooftop Solar PV System at (building name)" (Project) and as per competitive bidding under RFS No _____ dated _____
- B. The Power Producer is engaged in the business of design, supply, erection, testing, commissioning, operating and maintenance power plants, including grid connected rooftop power projects.
- C. The Power Producer has agreed to install and operate a solar photovoltaic power plant of ___kWp capacity at the Premises after due inspection of the Premises as defined hereinafter and supply the entire Solar Power of the Project to Purchaser on the terms and conditions contained in this Agreement.
- D. The Purchaser has agreed to purchase the entire Solar Power of the Project on the terms and conditions contained in this Agreement.

NOW THEREFORE in consideration of the mutual promises, conditions and covenants set forth herein, the Parties hereby agree as below:

1. Definitions and Interpretation 1.1 Definitions

In addition to other capitalized terms specifically defined elsewhere in the Agreement or unless the context otherwise requires the following words and phrases shall be defined as follows:

- (a) "Actual Monthly Production" means the amount of energy recorded by the Main Metering System during each calendar month of the Term, pursuant to Section 5.2;
- (b) "Affiliate" means with respect to any specified Person, any other Person, directly or indirectly controlling, controlled by or under common control with such specified Person)
- (c) "Agreement" means this Power Purchase Agreement executed hereof, including the schedules, amendments, modifications and supplements made in writing by the Parties from time to time.
- (d) "Applicable Law" me

- (e) ans, with respect to any Person, any constitutional provision, law, statute, rule, regulation, ordinance, treaty, order, decree, judgment, decision, certificate, holding, injunction, registration, license, franchise, permit, authorization, guideline, Governmental Approval, consent or requirement or any Governmental Authority in India having jurisdiction over such Person or its property, enforceable by law or in equity, including the interpretation and administration thereof 1:4 such Governmental Authority.
- (f) "Assignment" has the meaning set forth in Section 14.1:
- (g) "Business Day" means any day other than Sunday or any other day on which banks in < name of the State> are required or authorized by Applicable Law to be closed for business:
- (h) "Commercial Operation Date" has the meaning set forth in Section 4. 3(b)
- (i) "Consents, Clearances and Permits" shall mean all authorization, 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 setting up of the generation facilities and / or supply of power:
- (j) "Deemed Generation" has the meaning set forth in Section 5.3 (c)
- (k) "Delivery Point" shall be the single point, at a location mutually agreed by the Parties, in line with applicable regulation/ rules where Solar Power is delivered by the Power Producer from the System to the Purchaser.
- (l) "Dispute" has the meaning set forth in Section 17.7 (b);
- (m) "Disruption Period" has the meaning set forth in Section 5.3 (c)
- (n) "Distribution Utility" means the local electric distribution owner and operator providing electric distribution and interconnection services to Purchaser at the Premises;
- (o) "Due Date" has the meaning set forth in Section 7.4;
- (p) "Effective Date" has the meaning set forth in Section 2;
- (q) "Estimated Remaining Payments" means as of any date, the estimated remaining Solar Power Payments to be made through the end of the applicable Term, as reasonably determined by the Power Producer in accordance with Section 7.1;
- (r) "Expiration Date" means the date on which the Agreement terminates by reason of expiration of the Term.
- (s) "Force Majeure Event" has the meaning set forth in Section 11.1
- (t) "Governmental Approval" means any approval, consent, franchise, permit, certificate, resolution, concession, license or authorization issued by or on behalf of any applicable Governmental Authority for the purpose of setting up of the Project and / or for sale and purchase of Solar Power of the Project pursuant to the Agreement.

- (u) "Governmental Authority" means any central, state, regional, district, town, city or municipal government, whether domestic or foreign, or any department, agency, bureau, or other administrative, regulatory or judicial body of any such government.
- (v) "Indemnified Persons" means the Purchaser Indemnified Parties or the Power Producer-indemnified Parties, as the context requires.
- (w) "Insolvency Event" means with respect to a Party, that either
 - i. Such party has (A) applied for or consented to the appointment of or the taking of possession by a receiver, custodian, trustee, administrator, liquidator on the likes of itself or of all or a substantial part of its assets or business; (B) been unable to pay its debts as such-debts become due; (C) made a general assignment for the benefit of its creditors, (D) commenced a voluntary proceeding under any insolvency or bankruptcy law;
 - (E) filed a petition seeking to take advantage of any other law relating to the bankruptcy, insolvency, reorganization, winding up or composition or readjustment of debts; or (F) taken any corporate or other action for the purpose of effecting any of the foregoing; or
 - ii. It is clarified that a dissolution or liquidation will not be an Insolvency Event if such dissolution or liquidation is for the purpose of a merger, consolidation or reorganization, and the resulting company retains credit worthiness similar to the dissolved or liquidated entity and expressly assumes all obligations of the dissolved and liquidated entity under this Agreement and is in a position to the perform them.
- (x) "Installation Work" means the construction and installation of the System and the Start-up, testing and acceptance (but not the operation and maintenance) thereof; all performed by or for the Power Producer at the Premises.
- (y) "Invoice Date" has the meaning set forth in Section 7.2.
- (z) "Losses" means all losses, liabilities, claims, demands, suits, causes of action, judgments, awards, damages, cleanup and remedial obligations, interest, fines, fees, penalties, costs and expenses (including all attorneys' fees and other costs and expenses incurred in defending any such claims or other matters or in asserting or enforcing and indemnity' obligation)
- (aa) "Main Metering System" means all meter(s) and metering devices owned by the Power Producer and installed at the Delivery point for measuring and recorded the delivery and receipt of energy.
- (aa) "Metering Date" means the first Business day of each calendar month

subsequent to the month in which the Solar Power is generated by the Power Producer. The billable units shall be equal to the difference between the meter reading on the Metering Date and the meter reading on the previous month's Metering Date.
- (bb) "Party" or Parties" has the meaning set forth in the preamble to this Agreement.

- (cc) "Performance Ratio" (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured. $PR = (\text{Measured output in kW} / \text{Installed plant capacity in kW} * 1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2)$
- (dd) "Person" means an individual, partnership, corporation, Limited Liability Company, business trust, Joint Stock Company, trust, unincorporated association, joint venture, firm, or other entity, or a Governmental Authority.
- (ee) "Power Producer Default" has the meaning set forth in Section 12.1
- (a).
- (ff) "Power Producer Indemnified" has the meaning set forth in Section 16.2.
- (gg) "Premises" means the premises described in Schedule 1 to this Agreement. For the avoidance of doubt, the Premises include, the entirety of any and underlying real property located at the address described in Schedule 1 to this Agreement.
- (hh) "Purchase Date" means the date on which title to the System transfers to the Purchaser pursuant to the Purchaser exercising its purchase option under Section 3.2.
- (ii) "Purchase Price" means the fee payable by Power Purchaser to the Power Producer under the circumstances described in Section 3.2
- (jj) "Purchaser Default" has the meaning set forth in Section 12.2 (a).
- (kk) "Purchaser Indemnified Parties" has the meaning set forth in Section 16.1
- (ll) "Representative" has the meaning set forth in Section 15.1.
- (mm) "Scheduled Complete Date" has the meaning set forth in Section 4.1(g)
- (nn) "Selectee" means, a new company (i) proposed by the Lenders read with Schedule III hereof and approved by the Purchaser (ii) or proposed by the Purchaser in accordance with Schedule III hereof and approved by the Lenders, for substituting the Power Producer for the residual period of the Agreement by amendment of the Agreement or by execution of a fresh power purchase agreement in accordance with the terms and conditions contained in the said Schedule.
- (oo) "Solar Power" means the supply of electrical energy output from the System.
- (pp) "Solar Power Payment" has the meaning set forth in Section 7.1.
- (qq) "System" includes the integrated assembly of photovoltaic panels, mounting, assemblies, inverters, converters, metering, lighting fixtures, transformers, ballasts, disconnects, combiners, switches, wiring devices and wiring, and all other material comprising the Installation Work.
- (rr) "System Operations" means the Power Producer's operation; maintenance and repair of the System performed in accordance the requirement herein.

(ss) "Tariff" means the price per kWh set forth in Schedule II hereto.

(tt) "Term" has the meaning set forth in Section 3.1:

1.2 Interpretation

(a) Unless otherwise stated, all references made, in this Agreement to "Sections", "Clauses" and "Schedules" shall refer respectively to Sections, clauses and Schedules of this Agreement. The Schedules to this Agreement form an integral part of this Agreement and shall have effect as though they were expressly set out in the body of this Agreement.

(b) In the Agreement, unless the context otherwise requires (i) words imparting singular connotation shall include plural and vice versa: (ii) the words "include", "includes", and "including" mean include, includes and including "without limitation" and (iii) the words "hereof", "hereto", "herein" and "hereunder" and words of similar import refer to the Agreement as a whole and not to any particular provision of the Agreement.

2. Effective Date

This Agreement shall be effective on the day that falls one Business Day after the date of signing of this Agreement.

3. Terms and Termination

3.1 Term

The term of the Agreement shall commence on the Effective Date and shall continue for twenty five (25) years from the Commercial Operations Date (the "Term"), unless and until terminated earlier pursuant to the provisions of the Agreement. After the Term, the ownership of the System shall be transferred to the Purchaser free of cost.

3.2 Purchase Option/ Purchase Obligation

So long as a Purchaser default shall not have occurred and be continuing, Purchaser has -the option to purchase the System by paying the Power Producer the Purchase price as per Schedule III to this Agreement. To exercise its purchase option, the Purchaser shall not less than Ninety (90) days prior to the proposed Purchase Date, provide written notice to the Power, Producer of Purchaser's intent to exercise .its option to purchase the System on such purchase date: In the event Purchaser confirms its intention to exercise the purchase option in writing to the Power Producer, (i) Purchaser shall pay the applicable purchase price to the Power Producer on the Purchase Date, and such payment shall be made in accordance with any written instructions delivered to Purchaser by the Power Producer for payments under the Agreement, and (ii) the Parties shall promptly execute all documents necessary to (A) cause title to the System to pass to Purchaser on the Purchase Date, free and clear of all liens and (B) assign all vendor warranties for the System to Purchaser. Upon execution of the documents and payment of the applicable purchase price in each case as described in the preceding sentence, the agreement shall terminate automatically and the Purchaser shall become the owner of the System. Upon such termination, the Power Producer shall offer' its operations and maintenance ("O&M") services to the Purchaser and the Parties may enter into an O&M agreement in this regard. The terms and conditions of the O&M agreement will be negotiated in good faith between the Parties.

3.3 Conditions of the Agreement prior to installation In the event that any of the following events or circumstances occur prior to the Commercial Operation Date, the Power Producer may terminate the Agreement, in which case neither Party shall have any liability to the other except for any such liabilities that may have accrued prior to such termination.

- (a) There has been a, material adverse change in the rights of Purchaser to occupy the Premises or the Power Producer to install the System at the Premises.
- (b) The Power Producer has determined that there are easements, Capacity Cost Recovery (CCRs) or other liens or encumbrances that would materially impair or prevent the installation, operation, maintenance or removal of the System. If any dispute arises before commercial operation date, the same shall be resolved under clause, 17.7 (c)

4 Construction, Installation, Testing and Commissioning of the System. 4.1 Installation Work

- a) The Power Producer will cause the Project to be designed, manufactured, supplied, engineered, erected, tested and commissioned, operated & maintained and constructed substantially in accordance with RFS No _____ dated: _____ and the sanction letter issued by <NAME OF EXPERT PSU>. The Power Producer shall provide to the Purchaser a bill of materials listing the major equipment constituting the System. Such bill of
- b) The Power Producer shall have access as reasonably permitted by the Purchaser to perform the Installation Work at the Premises in a manner that minimizes inconvenience to and interference with the use of the Premises to the extent commercially practical.
- c) It is agreed between the Parties that the Power Producer shall commission the System with a capacity of ___kWp. Power Producer may construct a System of smaller size if it receives only part approval of government subsidies or for any other material commercial reason, as mutually agreed between the Parties in writing, In the event a System of smaller capacity is eventually agreed to be installed, the clauses pertaining to Purchase Price as set out under this Agreement shall be adjusted proportionately as per mutual agreement between the Parties in writing.
- d) The Power Producer shall provide and lay the dedicated electrical cables for transmission of Solar Power from the System up to the Delivery Point. Transmission or distribution of Solar Power beyond this point will be the responsibility of the Purchaser. The Delivery Point shall be where the Main Metering System is located.
- e) Unless otherwise agreed between the Parties, the Power Producer shall not do
- (a) chipping of rooftop; or (b) water proofing of roof to be disturbed ;(c) Carry out any other modification of the Premises without the written consent of the Purchaser.
- f) The Power Producer shall maintain general cleanliness of area around the Project during construction and operation period of the Project. In case any damages is caused to the equipment / facilities owned by the Purchaser due to the Power Producer, the same shall be made good rectified by the Power Producer at their cost.

- g) The Power Producer shall, within fifteen (15) working days of the Effective Date, submit to the Purchaser shop drawings of the Project for approval ("Shop Drawings"). The drawings will have to be approved from the Power Purchaser within 3 working days from the submission of the drawings. If the Purchaser has any objection/'recommendation in the Shop Drawings, he shall communicate the same to Power Producer within a period of ten (10) working days of the date of submission of the Shop Drawings. Any delay will extend the Effective Date and such approval shall not be unreasonably withheld. Subject to any punch-list items which shall be agreed by the Purchaser as not being material to completion of the Project, the Power Producer agrees that it shall achieve the completion of the Project/ Commissioning of the Project within the scheduled completion period from the Effective Date ("Scheduled Completion Date"). Purchaser shall ensure that sufficient load is available at the Delivery Point to ensure synchronization and drawl of power from System.
- h) If the Power Producer is unable to commence supply of Solar Power to the Purchaser by the Scheduled Completion Date, other than for the reasons specified in Article 11 and 12.2 (Force Majeure or Purchaser Default), the Power Producer or its contractor shall pay to <NAME OF EXPERT PSU> genuine pre-estimated liquidated damages for the delay in such commencement of supply of Solar Power as per the clause of the <NAME OF EXPERT PSU> RFS appended as Schedule VI format as per respective RFS document to this Agreement.
- i) The Purchaser shall ensure that all arrangements and infrastructure for receiving Solar Power beyond the Delivery Point are ready on or prior to the Commercial Operation Date and is maintained in such state in accordance with applicable laws through the Term of the Agreement.
- j) Power Producer shall fulfill all obligations undertaken by it under this Agreement.

4.2 Approvals and Permits

Each of the Parties shall assist the other Party in obtaining all necessary Government Approvals, third party approvals and permits including but not limited to those listed in Schedule V hereto and any waivers, approvals or releases required pursuant to any applicable CCR.

4.3 System Acceptance Testing

- (a) The Power Producer shall give 10 days advance notice to conduct the testing of the Project and shall conduct testing of the Project in the presence of Purchaser's designated representative.
- (b) If the results of such testing indicate that the System is capable of generating electric energy (at full rated KWp) for 5 continuous hours using such instruments and meters as have been installed for such purposes, then the Power Producer shall send' a Written notice to Purchaser to that effect, and the date of successful conducting such tests and injection of. Power at Delivery Point shall be the "Commercial Operation Date"

5 System Operations

5.1 The Power Producer as Owner and Operator

The System will be legally and beneficially owned by the Power Producer and will be operated and maintained and, as necessary, repaired by the Power Producer at its sole cost and expense. Replacement of spare parts if any shall be responsibility of Power Producer for the complete period of Agreement. If any repair or

maintenance costs incurred by the Power Producer as a result of Purchaser's breach of its obligations, shall be reimbursed in full by Purchaser.

Power Producer shall not be responsible for any work done by others on any part of the System/Project authorized by the Purchaser and not authorized in advance by the Power Producer in writing. Power Producer shall not be responsible for any loss, damage, cost or expense arising out of or resulting from improper operation or maintenance of the System by Purchaser or anyone instructed to do such work by Purchaser. In the event of a problem with the System, as a result of the Purchaser actions for which Power Producer is not responsible as provided in this Agreement, Purchaser may choose and pay Power Producer for diagnosing and correcting the problem at Power Producer or Power Producer's contractors standard rates.

5.2 Metering

- (a) The Power producer shall install the Main Metering System with due certification for the measurement of electrical energy produced by the System.
- (b) The meter will be read by Power Producer's personnel on the Metering date. The authorized representative of the Purchaser shall be present at the time of meter reading. Both the Parties shall sign a joint meter reading report. However, in case the Joint meter reading report is not signed in the first three business days of any month due to non-availability of the Purchaser's authorized representative, the report signed by the Power Producer shall be considered as Joint Meter Reading Report. The Parties agree that such Joint meter reading Report shall be final and binding on the Parties.
- (c) The Main Metering System at the Delivery Point and any additional meters required by Applicable Law shall be tested, maintained and owned by the Power Producer.
- (d) The Power Producer shall connect the Solar output to the existing system of the Purchaser as per the requirements and guidelines of the state DISCOM
- (e) The Purchaser may, at its own discretion, install a check meter, at its cost, to verify the measurements of the Main Metering System.
- (f) The title to the Solar Power supplied by the Power Producer shall pass to the Purchaser at the Delivery Point.
- (g) Power Producer shall be responsible for transformer etc. "if required" & metering as per respective clause of RFS (reference to be quoted).

5.3 System Disruptions

- (a) Availability of premises: Purchaser will provide full access of the site to Power Producer for installation, operation and maintenance of solar power plant during the period of Agreement. Power Purchaser will also provide restricted access of the Premises to Power Producer for operation and maintenance of solar power plant.
- (b) Purchaser will not provide/construct any structure within its Premises or around its premises which shades the solar panels effecting the generation of the energy during the Agreement period.
- (c) Roof Repair and other System Disruptions In the event that (a) the Purchaser repairs the Premises' roof for any reason not directly related to damage, if any, caused by the System, and such repair required the partial or

complete temporary disassembly or movement of the System, or (b) any act or omission of Purchaser or Purchaser's employees, Affiliates, agents or subcontractors (collectively, a "Purchaser Act") result in a disruption or outage in System production, and such events attributable to Purchaser (except Force majeure, then, in either case) Purchaser shall (i) pay the Power Producer for all work required by the Power Producer to disassemble or move the System and re-assemble the system after completion of the repair work and (ii) continue to make all payments for the Solar Power during such period of System disruption (the "Disruption Period"). For the purpose of calculating Solar Power Payments and lost revenue for such Disruption Period, Solar Power shall be deemed to have been produced at the average rate. Over the preceding 12 (Twelve) months, or, if the disruption occurs within the first 12 months of operation, the average over such period of operation (deemed generation). Power producer shall inform about the 'disruption or outage in System production, for reasons attributable to purchaser in 'writing with date and time of such occurrences, and Purchaser's liability shall start from the date of intimation for above of disruption or outage in system production, on account of Purchaser.

6 Delivery of Solar Power

6.1 Purchaser Requirement:

Purchaser agrees to purchase one hundred percent (100%) of the Solar Power generated by the System and made available by the Power Producer to Purchaser at the Delivery Point during each relevant month of the Term. In the event that the Purchaser is unable to off take 100% of the electricity generated, when it is generated, then Deemed Generation will apply only in case following conditions:

- a) In the event Power Producer is generating power more than the available load, and the Purchaser is not able to export or record the excess units generated due to faults in the equipment's of the Purchaser e.g., Net meter Cables, Equipment's etc., which may stop the feeding / record of the Solar Power generated.
- b) In the event that the Purchaser fails to ensure adequate space for solar equipment to ensure that other structures do not partially or wholly shade any part of the Solar Power Plant and if such shading occurs, the Power Producer may apply for Deemed Generation furnishing the calculation for loss in generation due to such shading supported by the relevant data, which shall be approved by Purchaser within one month of submission failing which the Power Producer shall claim provisional deemed generation till the issue is finally settled.

6.2 Estimated Annual Production

The annual estimate of Solar Power with respect to the System for any given year as determined pursuant to this Section shall be the "Estimated Annual Production". The Estimated Annual Production for each year of the Initial Term is set forth in Schedule IV hereof.

6.3 Suspension of Delivery

Power Producer shall be entitled to suspend delivery of electricity from the System to the Delivery Point for the purpose of maintaining and repairing the System upon giving one week's advance written notice to the Purchaser except in the case 'of emergency repairs. Such suspension of Service shall not constitute a breach of this Agreement provided that the Power Producer shall use commercially reasonable efforts to minimize any

'interruption in service to the Purchaser. However, any preventive maintenance shall be done only during the period when plant is not generating.

7 Tariff and Payments

7.1 Consideration Purchaser shall pay to the Power Producer a monthly payment (the "Solar Power Payment") for the Solar Power generated by the System as per the Metering clause 5.2 (b) above during each calendar month of the Term equal to the actual Monthly Production as recorded in Joint Meter Reading Report for the System for the relevant month multiplied by the Tariff irrespective of (i) whether any or all units of Solar Power has been drawn, consumed or utilized by Purchaser and / or (ii) whether any Solar Power has been injected, whether inadvertently or otherwise, into the grid of the Distribution Utility. The Power Producer will bill the Purchaser for each KWh metered as above at the Delivery Point, at the Tariff prevailing at that point of time. As detailed in Schedule - II, the Tariff will be equal to Rs. ____/kWh levelized tariff as per <NAME OF EXPERT PSU> allocations. The 'year' Considered shall be the financial year which April 1st to 31st March of every year as per <NAME OF EXPERT PSU>Schedule II provides a detailed year on year tariff schedule.

7.2 Invoice

The Power Producer shall invoice Purchaser on the first day of each month (each, an "Invoice Date") commencing on the first Invoice Date to occur after the Commercial Operation Date, for the Solar Power Payment in respect of the immediately preceding month. The last invoice shall -include production only through the Expiration Date of this Agreement.

7.3 The invoice to the purchaser shall include.

- (a) The Solar Power calculations for the relevant billing period.
- (b) Supporting data, documents and calculations in accordance with this Agreement.

7.4 Time of payment

Purchaser shall pay all amounts due hereunder within 30 days after the date of the receipt of the invoice via email or post ("Due Date").

7.5 Method of Payment

Purchaser shall make all payments under the Agreement by cheque / demand draft/ electronic funds transfer only in immediately available funds to the' account designated by the Power Producer from time to time.. All payments made hereunder shall be non-refundable, subject to the applicable tax deduction at source, and be made free and clear of any other tax, levy, assessment; duties or other charges and not subject to reduction, set-off, or adjustment of any kind. Further, if any taxes and duties are leviable currently or in future, such taxes and duties shall be paid by the Purchaser over and above the solar electricity tariff mentioned in this agreement. Such taxes and duties could include, but not restricted to Electricity Duty, Tax on Sale of Electricity (TOSE). If the Purchaser deducts any tax at source, the Purchaser will issue a tax credit certificates as per law.

7.6 Late Payment Surcharge/ Early Payment Discount

In case payment of any invoice is delayed by the Purchaser beyond its Due Date, a late payment surcharge shall be payable by Purchaser to the Power Producer at the rate of 1.25% per month ("Late Payment Surcharge") calculated on the amount of outstanding payment, calculated on a day to day basis for each day of the delay, compounded on monthly rates. Late Payment Surcharge shall be claimed by the Power Producer, through its subsequent invoice.

7.7 Disputed Payments

In the event that the Purchaser disputes an invoice, it shall give notice of such a dispute within 15 days of receiving the invoice setting out details of the disputed amount. The Purchaser shall pay by the Due Date 100% of any undisputed amount and in case the invoice is disputed, the Purchaser shall pay an amount based on average consumption of last three consecutive undisputed invoices. Amount so recovered shall be subject to final adjustment on resolution of the dispute. Thereafter, the Parties shall discuss and try to resolve the disputed amount within a week of receipt of such notice of dispute. If the Parties resolve the dispute, an appropriate adjustment shall be made in the next invoice. If the dispute has not been resolved by the date of the next invoice the dispute shall be referred to a committee of one member from each of Purchaser and Power Producer, If the dispute is still-not resolved by the next following invoice it shall be 'referred to Arbitration as provided in the present Agreement.

7.8 Change in Law:

- (a) For the Purpose of this section 7.8, the term "Change in Law" shall mean the occurrence of any of the following events after the Effective date, resulting into any additional recurring / non-recurring expenditure by the Power Producer or any income to the Power Producer. The enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law: or
- (i) A change in the interpretation of any Law by any Governmental Authority having the legal power to interpret or apply such Law, or any competent court; or
 - (ii) The imposition of a requirement, for obtaining any Government Approvals which was not required earlier; or
 - (iii) a change in the terms and conditions prescribed for obtaining any Government Approvals or the inclusion of any new terms or conditions for Obtaining such Government Approvals; or
 - (iv) any introduction of any tax made applicable for supply of power by the Power Producer as per the terms of this Agreement. Any benefit due to change in tax on the sale of solar energy shall be passed on to Purchaser.
 - (v) Any benefit arising due to change in above para (i) to (iv) shall be passed on to the Purchaser. But not include any change in any withholding tax on income or dividends distributed to the shareholders of the Power Producer.
- (b) Application and Principles for computing impact of Change in Law:
While determining the consequence of Change in Law under this Article 7.8, the Parties shall have due regard to the Principle that the purpose of compensating the Party affected by such change in Law, is to restore through monthly bill payment, to the extent contemplated in this Article 7.8, the affected Party to the same economic position as if such Change in Law has not occurred and such impact shall be mutually decided in writing.
- (c) Solar Power Payment Adjustment Payment on account of Change in Law Subject to provisions mentioned above, the adjustment in Solar Power Payment shall be effective from:
- (i) The date of adoption, promulgation, amendment, re-enactment or repeal of the Law or Change in Law; or

- (ii) The date of order/ judgment of the competent court; of tribunal or Governmental Authority, if the Change in law is on account of a change in interpretation of Law.

8 General Covenants

8.1 Power Producer's Covenants

The Power Producer covenants and agrees to the following:

- (a) Notice of Damage or Emergency: The Power Producer shall (a) promptly notify Purchaser if it becomes aware of any damage to or loss of the use of the System or that could reasonably be expected to adversely affect the System, (b) immediately notify Purchaser once it becomes aware of any event or circumstance that poses an imminent risk to human health, the environment, the System or the Premises.
- (b) System Condition: The Power Producer shall take all actions reasonably necessary to ensure that the System is capable of providing Solar Power at a commercially reasonable continuous rate: Subject to there being no Purchaser Default, the Power Producer shall provide 24 x 7 offsite / offsite monitoring and maintenance of the System throughout the period of this agreement at no additional cost.
- (c) The System shall meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the daily normalized irradiance levels of the location during the O&M period. PR shall be minimum of 75% at the time of inspection for initial Project acceptance.
- (d) Governmental Approvals : While providing the Installation work, solar Power and System Operations, the Power Producer shall obtain and maintain and secure all Governmental Approval required to be obtained and maintained and secured by the Power Producer and to enable the Power Producer to perform such obligations
- (e) The interconnection of the rooftop solar system with the network of the distribution licensee shall be made as per the technical standards for connectivity of distributed generated resources regulation's .as may be notified by the competent authority. The interconnection of the rooftop solar system shall be as per the contracted load and / or respective voltage level applicable to the Purchaser as per the provisions of the guidelines issued by the competent authority.
- (f) Health and Safety: The Power Producer shall take all necessary and reasonable safety precautions with respect to providing the installation Work, Solar Power, and System Operations that shall comply with all Applicable Law pertaining-to the health and safety of persons and real and personal property.

8.2 Power Producer's Representatives

During the subsistence of this Agreement, the Power Producer undertakes to respond to all questions, concerns and complaints of the Purchaser regarding the System in a prompt and efficient manner. The Power Producer designates the following individual as its representative pertaining to performance of this Agreement till the Commercial Operation Date:

Name: _____

Telephone: _____

Email: _____

The Power Producer designates the following individuals as its representative and primary point of contact pertaining to performance of this Agreement following the Commercial Operation Date till termination:

Name: _____

Telephone: _____

Email: _____

8.3 Purchaser's Covenants

Purchaser covenants and agrees to the following:

- (a) Notice of Damage or Emergency: Purchaser shall (a) promptly notify the Power Producer if it becomes aware of any damage to or loss of the use of the System or that could reasonably be expected to adversely affect the System;
- (b) immediately notify the- Power Producer once it becomes aware of any event or circumstance that poses an imminent risk to human health, the environment, the System or the Premises.
- (b) Liens: Purchaser shall not directly or indirectly cause, create, incur, assume or suffer to exist any Liens on or with respect to the System or any interest therein. If Purchaser breaches its obligations under this Clause, it shall immediately notify the Power Producer in writing, and shall promptly cause such Lien to be discharged and released of record without any cost to the Power Producer, and shall indemnify the Power Producer against all costs and expenses (including reasonable attorneys fees and court costs) incurred in discharging and releasing such Lien.
- (c) Consents and Approvals: Purchaser shall ensure that any authorizations required of Purchaser under this Agreement, including those required for installation of System at the Premises and to drawl consume Solar Power are provided in a timely manner. The Purchaser shall cooperate with the Power Producer to obtain such approvals, permits, rebates or other 'financial incentives.
- (d) Access to Premises Grant of License: Purchaser hereby grants to the Power Producer a license co-terminus with the Term, containing all the rights necessary for the Power Producer to use portions of the Premises for the installation, operation and maintenance of the System pursuant to the terms of this Agreement, including ingress and egress rights to the Premises for the Power Producer and its employees and authorized representatives and access to electrical panels and conduits to interconnect or disconnect the System with the Premises electrical wiring with the consent and approval of the Purchaser's authorized representative identified by the Purchaser. Photo IDs will be provided by the Power Producer. Power Purchaser will assist in availing permissions to the site.
- (e) Security: The building which has enhanced security of Solar Power System Purchaser will keep the premises locked. In spite of these measures, if any damages to the System takes place due to theft or vandalism then the same shall be claimed or reimbursed through insurances by Power producer. In case of theft and vandalism acts, the Purchaser will assist the Power Producer in procedures of filing FIRs, insurance claims and any other related activities. Whenever, the damages to the System occurs (except due to negligence of Power Producer) then the same shall be jointly assessed by both the Parties and a severity level will be decided, which will further decide the duration offered to the Power Producer to correct the damage, and the Power Producer shall he paid the amount on the basis of 'Deemed generation' for such a period. Power Producer shall be entitled to any insurance proceeds received for damages in this clause. Purchaser will not conduct activities on, in or about the Premises that have a reasonable likelihood of causing damage, impairment or otherwise adversely affecting the System. If System is damaged due to any such activity or through any other agency contracted by the Purchaser directly or indirectly, such damage will be borne by the Purchaser.
- (f) Regardless of whether Purchaser is owner of the Premises or leases the Premises from a land lord, Purchaser hereby covenants that (a) the Power Producer shall have access to the Premises and System during the Term of this Agreement, and (b) neither Purchaser nor Purchaser's land lord will interfeerer or handle any of the Power Producer's equipment or the System without written authorization from the Power Producer.

- (g) Temporary storage space during installation : Purchaser shall provide sufficient space at the Premises for the temporary storage and. staging of tools, materials and equipment and for the parking of construction crew vehicles and temporary Construction, trailers and facilities reasonably necessary during the Installation Work, System Operations and access for rigging and material handling.
- (h) Sunlight Easements: Purchaser will take all reasonable actions as necessary to prevent other building, structures or flora from overshadowing or otherwise blocking access of 'sunlight to the System, including but not limited to-such actions as may be reasonably necessary to obtain a solar access easement for such purpose.
- (i) Evacuation — Purchaser shall off take 100% of the Solar Power generated from the Delivery Point, and pay all invoices raised by the Power Producer under this Agreement by the 'Due Date and pay interest on delayed payments,
- (ii) if any, as per this Agreement.
- (j) Water - Power Purchaser at zero cost shall arrange Raw Water at a given point as per the requirements of the Power Producer, for periodic cleaning of the solar panels (____ liters - twice a month).
- (k) Auxiliary Power — The Purchaser shall provide sufficient auxiliary power to the Power Producer for the maintenance and operation of its system, if available and possible, at the rate Purchaser is paying to the DISCOM.
- (l) Relocation - If one or more of the Solar Power Plant panels needs to be temporarily moved or its generation suspended, for any other reason requested by the Power Purchaser, the Power Purchaser will be responsible for pre-agreed costs on actuals only, arising from moving, disassembling and re -installing/ commissioning the Solar Power Plant, as agreed between the Parties. The Power Producer will be responsible for providing detailed documentary proof of the actual pre-agreed costs borne for such relocation/disassembling. Within 30 days of these satisfactory documents being provided by the Power Producer, the Purchaser shall reimburse these pre-agreed expenses in full, and delayed payment beyond the date mentioned above will attract Late Payment charges as described in Clause 7.6. During any interruption in generation during such relocation, the Purchaser will continue to be billed as per Deemed Generation, during the period of interruption, for the affected Solar Power Plant(s).

9 Representations & Warranties

- 9.1 Representations and Warranties Relating to Agreement Validity In addition to any other representations and warranties contained in the Agreement, each Party represent and warrants to the other that:
- (a) It is duly organized and validly existing and in good standing in the jurisdiction of its incorporation;
 - (b) It has the full right and authority to enter into, execute, deliver, and perform its obligations under the Agreement.
 - (c) It has taken all requisite corporate or other action to approve the execution, delivery, and performance of the Agreement;
 - (d) The Agreement constitutes its legal, valid and binding obligation enforceable against such Party in accordance with its terms;
 - (e) There is not litigation, action, proceeding or investigation pending or, to the best of its knowledge, threatened before any court or other Governmental Authority by, against, affecting or involving any of it's business or assets that could reasonably be expected to adversely affect its ability to carry out the transactions contemplated herein; and
 - (f) Its execution and performance of the Agreement and the transactions contemplated hereby do not constitute a breach of any term or provision of, or a default under (i) any contract or agreement to which it or any of its Affiliates is a party or by which it or any of its Affiliates or its or their property is bound, (ii) its organizational documents, or (iii) any Applicable Laws.

10 Taxes and Governmental Fees

10.1 Purchaser obligations

Purchaser shall pay for any taxes, fees or charges imposed or authorized by any Governmental Authority in future (as on date no such taxes/fees/charges are being levied) on sale of the Solar Power to Purchaser pursuant to clause 7. The Power Producer shall notify Purchaser in writing with a detailed statement of such amounts, which shall be invoiced by the Power Producer in the monthly bills and payable by Purchaser. Purchaser shall timely report, make filings for, and pay any and all sales, use, income or other taxes, and any other amounts assessed against it due to its purchase of the Solar Power. This Section 10.1 excludes taxes specified in Section 10.2.

10.2 Power Producer Obligations

The Power Producer shall be responsible for all income taxes and any and all franchise fees or similar fees assessed against it due to its ownership of the System. The Power Producer shall not be obligated for any taxes payable by or assessed against Purchaser based on or related to Purchaser's overall income or revenues.

11 Force Majeure

11.1 Definition

"Force Majeure Event" means any act or event that prevents the affected Party from performing its obligation in accordance with the Agreement, if such act or event is beyond the reasonable control of the affected Party and such Party had been unable to overcome such act or event with the exercise of due diligence (including the expenditure of reasonable sums). Subject to the foregoing conditions, "Force Majeure Event" shall include without limitation the following acts or events: (i) natural phenomena, such as storms, hurricanes, floods, lightning, volcanic eruptions and earthquakes; (ii) explosions or fires arising from lighting or other causes unrelated to the acts or omissions of the Party seeking to be excused from performance; (iii) acts of war or public disorders, civil disturbances, riots, insurrection, sabotage, epidemic, terrorist acts, or rebellion. A Force Majeure Event shall not be based on the economic hardship of either Party. In case of any damage because of force majeure event, the System shall be repaired / commissioned at its own cost by the Power Producer.

11.2 Excused Performance: Except as otherwise specifically provided in the Agreement, neither Party shall be considered in breach of the Agreement or liable for any delay or failure to comply with the Agreement, if and to the extent that such delay or failure is attributable to the occurrence of a Force Majeure Event; provided that the Party claiming relief under this Section 11 shall immediately (i) notify the other Party in writing of the existence of the Force Majeure Event, (ii) exercise all reasonable efforts necessary to minimize delay caused by such Force Majeure Event, (iii) notify the other Party in writing of the cessation or termination of said Force Majeure Event and (iv) provided, however, that Purchaser shall not be excused from making any payments and paying any unpaid amounts due in respect of Solar Power delivered to Purchaser prior to the Force Majeure Event performance interruption.

11.3 Termination as a Consequence of Force Majeure Event

If a Force Majeure Event shall have occurred that has affected the Power Producer's performance of its obligations hereunder and that has continued for a continuous period of one hundred eighty (180) days, then Purchaser shall be entitled to terminate the Agreement and if such Force Majeure Event continues for further ninety (90) days period, the Agreement shall automatically terminate. Upon such termination for a Force Majeure Event, neither Party shall have any liability to the other (other than any such liabilities that have accrued prior to such termination).

12 Default

12.1 Power Producer Defaults and Power Purchaser Remedies

- (a) Power Producer Defaults: The following events shall be defaults with respect to the Power Producer (each, a "Power Producer Default").
 - (i) An Insolvency Event shall have occurred with respect to the Power Producer;
 - (ii) Failure to achieve Commissioning of the System within the period as per RFS document; and
 - (iii) The Power Producer breaches any material term of the Agreement and
 - (A) if such breach can be cured within sixty (60) days after Purchaser's written notice of such breach and the Power Producer fails to cure the same; or (B) the Power Producer fails to commence and pursue a cure within such sixty (60) days period if a longer cure period is needed.
- (b) Purchaser's Remedies:
 - (i) If a Power Producer Default described in Section 12.1 (a) has occurred and is continuing, in addition to other remedies expressly provided herein, and subject to Section 13, Purchaser shall have a right to deliver a notice of its intention to terminate this Agreement ("Purchaser Preliminary Default Notice"), which shall specify in reasonable detail, the circumstances giving rise to the issue of such notice.
 - (ii) Upon the occurrence and continuation of Power Producer Default and the failure by the Power Producer to cure such default within the applicable cure period specified in this Article; the Purchaser shall be at liberty avail the services of any other firm / successful bidder.
 - (iii) Following the issue of Purchaser Preliminary Default Notice, it shall be the responsibility of the Parties to discuss as to what steps shall be taken with a view to mitigate the consequences of the relevant Power Producer's Default having regard to all the circumstances: If the Power Producer Default is not cured within a period of sixty (60) days of the issue of Purchaser Preliminary Default Notice or any other such period mutually agreed upon by the Parties, the Purchaser shall have the right to terminate this Agreement by issuing a Purchaser Termination Notice.
 - (iv) Upon the delivery of the Purchaser Termination Notice, this Agreement shall stand terminated. The Power Producer shall have the liability to make payment within sixty (60) days from the date of Purchaser Termination Notice towards compensation to Purchaser equivalent to the difference between the Tariff and the grid rate notified by the relevant Government Authority for that point in time multiplied by the estimated Solar Power generated for a period of two years following the termination, considered on normative capacity utilization factor.
 - (v) if the Power Producer fails to remove the System from the Premises within one month from the date of termination, the Purchaser shall be entitled to dispose of the System in any manner it deems fit.
 - (vi) The Power Purchaser may exercise any other remedy it may have at law or equity or under the Agreement.

12.2 Power Purchaser Defaults and Power Producer's Remedies

- (a) Purchaser Default : The following events shall be defaults with respect to Purchaser (each, a "Purchaser Default")
 - (i) An Insolvency Event shall have occurred with respect to Purchaser;
 - (ii) Purchaser breaches any material term of the Agreement if (A) such breach can be cured within sixty (60) days after the Power Producer's notice of such breach and Purchaser fails to so Cure, or (B) Purchaser fails to commence and pursue said cure within such sixty (60) day period if a longer cure period is needed; and
 - (iii) Purchaser fails to pay the Power Producer any undisputed amount or, if the amount is disputed, an amount based on average consumption of last three consecutive undisputed invoices to the Power Producer under Section 7.7 of this Agreement within sixty (60) days from the receipt of notice from the Power Producer of such past due amount

- (b) Power Producer's Remedies: If a Purchaser Default described in Sections 12.2 (a) has occurred and is continuing, in addition to other remedies expressly provided herein, and subject to Section 13, the Power Producer shall be entitled to terminate this Agreement by serving a fifteen (15) days' notice and upon such termination, (A) the Power Producer shall be entitled to receive from Purchaser the Purchase Price. The Purchase Price payable shall be the Purchase Price Specified in Schedule III that falls on such date. Upon the payment of the Purchase Price, the Power Producer shall cause the title of the System to transfer to the Purchaser and (b) the Power Producer may exercise any other remedy it may have at law or equity or under the Agreement.

13 Limitations of Liability

- 13.1 Except as expressly provided herein, neither Party shall be liable to the other Party or its Indemnified Persons for any special, punitive, exemplary, indirect, or consequential damages, losses or damages for lost revenue or lost profits, whether foreseeable or not, arising out of, or in connection with the Agreement.
- 13.2 Subject to the provisions of the Agreement, the Power Producer shall be solely responsible for the manner in which its obligations under this Agreement are to be performed. All employees and representatives of the Power Producer, or contractors engaged by the Power producer in connection with Power Producer and shall not be deemed to be employees, representatives, contractors of the Purchaser Nothing contained in the Agreement or in any agreement or contract executed by the Power Producer shall be construed to create any contractual relationship between any such employees, representatives or contractors and the Purchaser.
- 13.3 Notwithstanding any liability, or obligation that may arise under this Agreement, any loss, damage, liability, payment, obligation or expense which is insured or not or for which the Purchaser can claim compensation under any insurance policy, shall not be charged to or payable by the Purchaser

14 Assignment & Novation

- 14.1 Assignment: Notwithstanding anything contained herein, the Power Producer has the right to assign all or any of its rights under this Agreement (including rights over any assets hereunder), to any third party including, though not restricted to any lender, equipment lessor or other party ("Assignment"), with the consent of the Power Purchaser. The Power Purchaser shall not unreasonably withhold such consent. In the event of such assignment, the Purchaser will be able to hold the Power Producer as well as the party to whom the benefits under this contract are assigned, to be jointly and severally responsible for performing the obligations under this contract. Further, in the event of assignment, the Purchaser agrees to make the payments due to the Power Producer under this agreement, directly to the assignee, upon receipt of such notice by the Power Producer. If the Power Producer were to sell the Solar Power Plant, then the new buyer(s) would need to abide by this Agreement. Further, the Power Producer reserves the right to assign whole or part of the assets to lenders/ leasing companies. Purchaser may assign its

rights under this Agreement, without the prior consent of Power Producer, to an Affiliate or any successor in interest to Purchaser, whether by way of merger, reorganization or sale of assets (including any sale of a line of business). This Agreement shall insure to the benefit of and be binding upon Purchaser and its successors or assigns. However, any such actions as intended by the Power Producer under Article 14.1 and Article 14.2 shall be binding on Power Purchaser ,if there are zero material inconsistencies present in the contract provisions during the time of assignment/novation, else, it shall be construed as default in contract and appropriate actions shall be taken as deemed fit.

14.2 Novation: The Parties agree and acknowledge that the Power Producer may intend to novate the Agreement to a party, and has the right to transfer any or all of its rights and obligations under this Agreement to a party or any other third party ("New Party"), with the consent of the Power Purchaser. The Power Purchaser shall not unreasonably withhold such consent. Upon Novation, the New Party shall automatically and without any further action be entitled to all the same rights and assume the same obligations, under this Agreement, as if it were originally a party to this Agreement. Further, the Purchaser hereby agrees and undertakes that, promptly upon receiving a request from the Power Producer, the Purchaser shall execute such further writings, deeds and/or agreements and take all such further actions as may be necessary for effecting or implementing the transfer of any or all of the Power Producer's rights and/or obligations under this Agreement to the New Party. If the parties agree to do Novation then separate Novation agreement shall be executed.

14.3 Notices

Unless otherwise provided in the Agreement, all notices and communications concerning the Agreement shall be in writing and addressed to the Parties at the addresses set forth below:

Power Producer's address and contact details:

Purchasers address and contact details:

14.4 Notice

Unless otherwise provided herein, any notice provided for in the Agreement shall be hand delivered, sent by registered post, or by courier delivery, or transmitted by facsimile and shall be deemed delivered to the addressee or its office when received at the address for notice specified above when hand delivered or sent by courier delivery, upon posting if sent by registered post and upon confirmation of sending when sent by facsimile on the next Business Day.

15. Confidentiality

15.1 Confidentiality obligation

(a) If the Power Producer provides confidential information, including business plans, strategies, financial information, proprietary, patented,

licensed, copy righted or trademarked information, and / or technical information regarding the , design, operation and maintenance of the System ("Confidential Information") to Purchaser or, if in the course of performing under the Agreement or negotiating the Agreement Purchaser learns Confidential Information regarding the facilities or plans of the Power Producer, Purchaser shall

(a) protect the Confidential information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, and (b) refrain from using such Confidential Information, except in the negotiation and performance of the Agreement. Notwithstanding the above, Purchaser may provide such Confidential Information to its officers, directors, manager, employees and Affiliates (collectively "Representatives"), in each case whose access is reasonably necessary for purposes of the Agreement. Each such recipient of confidential information shall be informed by Purchaser of its confidential nature and shall be directed to treat such information confidentially and shall agree to abide by these provisions. Purchaser shall be liable for any breach of this provision by any entity to whom it improperly discloses Confidential Information. All Confidential Information shall remain the property of the Power Producer and shall be returned to. It after Purchaser's need for it has expired or upon the request of the Power Producer.

- c) If the Purchaser provides confidential information, including business plans, strategies, financial information, proprietary, patented, licensed, copy righted or trademarked information, ("Confidential Information") to the Power Producer or, if in the course of performing under the Agreement or negotiating the Agreement the Power Producer learns Confidential Information regarding the facilities Or plans of the Purchaser, the Power Producer shall (a) protect the Confidential Information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, and (b) refrain from using such Confidential Information, except in the negotiation and performance of the Agreement. Notwithstanding the above, the Power Producer may provide such Confidential Information to its officers, directors, managers, employees and Affiliates (collectively, "Representatives"), in each case whose access is reasonably necessary for purposes of the Agreement. Each such recipient of Confidential. Information shall be informed by the Power Producer of its confidential nature and shall be directed to treat such information confidentially and shall agree to abide by these provisions. The Power Producer shall be liable for any breach, of this provision by any entity to whom it improperly discloses Confidential Information. All Confidential Information shall remain the property of the Purchaser and shall be returned to it after the Power Produce's need for it has expired or upon the request of the Purchaser.

15.2 Permitted Disclosures

Notwithstanding any other provision contained herein, neither Party shall be required to hold confidential any information that;

- (a) Becomes publicity available other than through the receiving Party.
- (b) Is required to be disclosed under Applicable Law or pursuant to a validity issued notice or required filling, but a receiving Party subject to any such requirement shall promptly notify the disclosing Party of such requirement
- (c) Is independently developed by the receiving Party ; or
- (d) Becomes available to the receiving Party without restriction from a third party under no obligation of confidentiality..

16 Indemnity

16.1 Power Producer's Indemnity

Subject to Section 13, the Power Producer agrees that it shall indemnify and hold harmless Purchaser and its members, officers, employees, students, casual laborers, persons permitted' to run any business or service, such as canteens, stores, photocopy units, banks, post office, courier service, hospital and to any lawful visitors (collectively, the "Purchaser Indemnified Parties") from and against any and all Losses incurred by the Purchaser Indemnified Parties to the extent arising from or out of the following any claim for or arising out of any injury to Or death of any Person or Loss or damage to Property of any Person to the extent arising out of the Power Producer's negligence or willful misconduct. The Power Producer shall not, however, be required to reimburse or indemnify any Purchaser Indemnified Party for any Loss to the extent such Loss is due to the negligence or willful misconduct of any Purchaser indemnified Party.

16.2 Purchaser's Indemnity

Subject to Section 13, Purchaser agrees that it shall indemnify, defend and hold harmless the Power Producer, its permitted successors and assigns and their respective directors, officers, employees, contractors, sub-contractors, and agents (collectively, the "Power Producer indemnified Parties") from and against any and all Losses incurred by the Power Producer Indemnified Parties to the extent arising from or out of any claim for or arising out of any injury to or death or any Person or loss or damage to property of any Person to the extent arising out of Purchaser's negligence or willful misconduct. Purchaser shall not, however, be required to reimburse or indemnify any Power Producer Indemnified Party for any Loss to the extent such Loss is due to the negligence or willful misconduct of any Power Producer Indemnified

Party.

17. Miscellaneous 17.1 Amendments

This Agreement may only be amended, modified or, supplemented by an instrument in writing executed by duly authorized representatives of the Power Producer and Purchaser.

17.2 Goodwill and Publicity

Neither Party shall use any name, trade name, service mark or trademark of the other Party in any promotional or advertising material without the prior written consent of such other Party. The Parties shall coordinate and cooperate with each other when making public announcements related to the execution and existence of this Agreement, and each Party shall have the right to promptly review, comment upon and approve any publicity materials, press releases and other public statements by the other Party that refer to, or that describe any aspect of, this Agreement; provided that no such publicity releases or other public statements (except for filings or other statements or releases as may be required by applicable law) shall be made by either Party without the prior written consent of the other Party. Without limiting the generality of the foregoing and whether or not the consent of the other Party is required or obtained, all public statements must accurately reflect the rights and obligations of the Parties under this Agreement.

17.3 Industry Standards

Except as otherwise set forth herein, for the purpose of the Agreement, the normal standards of performance within the solar photovoltaic power generation Industry in the relevant market shall be the measure of whether a Party's performance is reasonable and timely. Unless expressly defined herein, words having well-known technical or trade meanings shall be so construed.

17.4 Cumulative Remedies

Except as set forth to the contrary herein, any right or remedy of the Power Producer or Purchaser shall be cumulative and without prejudice to any other right or remedy.

17.5 No Waiver

The failure of the Power Producer or Purchaser to enforce any of the provisions of the Agreement, or the waiver thereof, shall not be construed as a general waiver or relinquishment on its part of any such provision in any other instance or of any other provision in any instance.

17.6 Survival

The obligations under Section 8:1 (d) (Power Producer Covenant), Sections 8.3(d), (e), (f) and (g) (Purchaser Covenants), Section 10 (Taxes and Governmental Fees), Section 13 (Limitation of Liability) Section 12.2 (Notices), Section 15 (Confidentiality), or pursuant to other provisions of this Agreement that, by their nature and context, are intended to survive. Termination of this Agreement shall survive the expiration or termination of this Agreement for any reason.

17.7 Governing Law & Jurisdiction

(a) This Agreement shall be governed by and construed in accordance with the laws of India. The Parties agree that the courts in Lucknow shall have jurisdiction over any action or proceeding arising under the Agreement.

(b) In the event of any Dispute, difference of opinion or dispute or claim arising out of or relating to this Agreement or breach, termination or the

invalidity thereof, shall firstly be attempted to be resolved by conciliation. Any Dispute that cannot be settled through conciliation procedure shall be referred to arbitration in accordance with the procedure given below. The Parties agree to comply with the awards resulting from arbitration and waive their rights to any form of appeal insofar as such waiver can validly be made. Cost of conciliation shall be equally shared by both the parties.

(c) Arbitration Procedure: Settlement of Dispute :

If any dispute of any kind whatsoever arises between Purchaser and Power Producer in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

If the parties fail to resolve, such a dispute or difference by mutual consent, within 45 days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given. Any dispute in respect of which a notice of intention to commence arbitration has been given in accordance with Sub Clause _____, shall be finally settled by arbitration.

In case the Contractor (Power Producer) is a Public Sector Enterprise or a Government Department:

In case the Contractor is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise,

Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusive. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.

In All Other Cases

In all other cases, any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.

The Purchaser and the Power Producer shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within Thirty (30) days after the later of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for third arbitrator which shall be the President, Institution of Engineers.

If one party fails to appoint its arbitrator within thirty (30) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in Clause _____ (Governing Law) and a substitute shall be appointed in the same manner as the original arbitrator.

Arbitration proceedings shall be conducted with The Arbitration and Conciliation Act, 1996. The venue or arbitration shall be New Lucknow.

The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.

The arbitrator(s) shall give reasoned award.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the agreement unless they otherwise agree.

Cost of arbitration shall be equally shared between the Power Producer and Purchaser.

17.8 Severability

If any term, covenant or condition in the Agreement shall, to any extent, be invalid or unenforceable in any respect under Applicable Law, the remainder of the Agreement shall not be affected thereby, and each term, covenant or condition of the Agreement shall be valid and enforceable to the fullest extent permitted by Applicable Law and if appropriate, such invalid or unenforceable provision shall be modified or replaced to give effect to the underlying intent of the Parties and to the intended economic benefits of the Parties.

17.9 Successors and Assigns

This Agreement and the rights and obligations under the Agreement shall be binding upon and shall inure to the benefit of the Power Producer and Purchaser and their respective successors and permitted assigns.

17.10 Counterparts

This Agreement may be executed in one or more counterparts, all of which taken together shall constitute one and the same instrument.

17.11 Independent Service Provider

This Agreement is on a principal to principal basis between the parties hereto. Nothing contained in this Agreement shall be construed or deemed to create any association, partnership or joint venture or employer-employee relationship or principal-agent relationship in any manner whatsoever between the Parties.

17.12 Non-Exclusive Agreement

This Agreement is on a non-exclusive basis. The Purchaser is free to engage any other service provider's or may entrust services similar to those provided by the Power Producer under this Agreement to any other person/s, provided the Power Producer's rights under this Agreement are not affected in any manner.

17.13 Entire Agreement

This Agreement constitutes the entire agreement between the Parties hereto with respect of the subject matter of this Agreement and supersedes all prior agreements and undertakings; written or oral, with respect to the subject matter hereof except as otherwise expressly provided herein. The Schedules annexed to this Agreement also Page 61 of 93 form a part of this Agreement.

17.14 Insurance

The Power Producer shall maintain at its own costs, throughout the tenure of this Agreement and any extensions thereof all mandatory insurance coverage for adequate amount including but not restricted to comprehensive general liability insurance including theft and vandalism, covering the System and accidental losses, bodily harm, injury, death of all individuals employed/ assigned by the Power Producer to perform the services required under this Agreement.

17.15 Annual accounts reconciliation shall be conducted annually between the Power Producer and Purchaser.

17.16 Entire Agreement

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter of this Agreement and supersedes all prior agreements and undertakings, written or oral, with respect to the subject matter hereof except as otherwise expressly provided herein. The Schedules annexed to this Agreement also form a part of this Agreement.

IN WITNESS WHEREOF the Parties have caused the Agreement to be duly executed through their duly authorized representatives as of the date set forth above.

FOR & ON BEHALF OF
POWER
THE PRESIDENT OF INDIA

PRODUCER

Signature:

Name:

Designation:

FOR & ON BEHALF OF

Signature:

Name:

Designation:

WITNESSES

1) Signature:

Name:

Designation:

2) Signature:

Name:

WITNESSES

1) Signature:

Name:

Designation:

2) Signature

Name

Designation:

Designation

SCHEDULE-I

Description of the Premises:

Premises Overview

Segment

Type of Roof

Hours of Operation

Security

Capacity and Area Requirement

Capacity _____ kWp

Module Area _____ sqmtr (PV System)

Number of Building _____

Roofs

Capacity _____

Distribution

SCHEDULE II

FEES

Following are the details of the tariff agreed between the parties.

Purchase shall pay power producer for solar power at the rate equal to INR ___/kWh which is the levelized tariff as per <NAME OF EXPERT PSU> allocation. Year wise tariff is as follows;

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Year 7

Year 8

Year 9

Year 10

Year 11

Year 12

Year 13

Year 14

Year 15

Year 16

Year 17

Year 18

Year 19

Year 20

Year 21

Year 22

Year 23

Year 24

Year 25

The fees and payment details are provided in detail under clause 7 of this agreement.

SCHEDULE III

The following is the purchase value of the system over a period of 25 years.

This may be applicable under the following conditions.

1. The Power Purchaser terminates the PPA before the 25 years PPA Tenure
2. The Power Purchaser wishes to own the Project before the Tenure of the PPA.
3. The Solar Project is relocated or shifted owing to demolition of the Building, damage to the building, change of city plans or any other mason.

The Price reference taken for calculating the total cost of the system is as per RFS rates for the state of _____ has used the CERC guidelines for arriving at the Project cost.

Year of Term (End ofYear)	Calendar Year	Purchase Price in Crores (Rs)
----------------------------------	---------------	--------------------------------

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15
16
17
18
19
20
21
22
23
24
25

Page 68 of 93

SCHEDULE IV

Project : _____kWp Solar On-Grid Power Project ____

Location : New Lucknow

Design Criteria

Expected Yearly Energy Generation Sheet

End of Year	Yearly Degradation	Global incident in coll. Plane (GlobInc)	Energy injected into grid (E_Grid)
'MWh' (Modules & System)'kWh/Sq.mtr' Yearly		'MWh' Yearly 'A'	

Client : Degradation consider in PV system generation data

1. 1.0%
2. 1.0%
3. 1.0%
4. 1.0%
5. 1.0%
6. 1.0%
7. 1.0%
8. 1.0%
9. 1.0%
10. 1.0%
11. 1.0%
12. 1.0%
13. 1.0%
14. 1.0%
15. 1.0%
16. 1.0%
17. 1.0%
18. 1.0%
19. 1.0%
20. 1.0%
21. 1.0%
22. 1.0%
23. 1.0%

24 1.0%

25 1.0%

SCHEDULE V

Government approvals

1. To be obtained by the power producer

All approvals including approvals/consents required under local regulations, building codes and approvals required from the distribution utility etc. relating to installation and operation of the system (including the government incentives/subsidies available for the project) and generation and supply of solar power from the Project.

2. To be obtained by Power Purchaser

Any authorizations required of purchaser, including those required for installation of system at the premises. Permissions and coordination with DISCOM or any related organization for NET METERING. Power Purchaser will apply for net metering and bear the cost of net meter only.

REMAINDER OF THE PAGE IS INTENTIONALLY LEFT BLANK

Purchase Price for kWp system @ Rs. ____/- Watt.

Year Salvage Value (Rs.)

1st year

2nd year

3rd year

4th year

5th year

6th year

7th year

8th year

9th year

10th year

11th year

12th year

13th year

14th year

15th year

16th year

Page 72 of 93

12th year

13th year

14th year

15th year

16th year

17th year

18th year

19th year

20th year

21th year

23rd year

24th year

25th year

ANNEXURE-I

BANK DETAILS

NAME OF THE BENEFICIARY:

PRINCIPAL PLACE OF BUSINESS&ADDRESS:

NAME OF THE BANK:

BANK ADDRESS:

BANK ACCOUNT NO:

TYPE OF BANK ACCOUNT - SB/CA/CC:

IFSC/NEFT/RTGS CODE:

MICR CODE:

PAN CARD NO:

PHONE NO./FAX NO. WITH STD CODE:

EMAIL ID OF CONTACT PERSON: