

# **e-Tender Document**

FOR

Design, Supply, Installation, Commissioning with 5 years  
Comprehensive Warranty & Maintenance of  
Solar Street Lighting System (White-LED based)  
with Li-Fe-PO4 Battery  
in  
Various Districts of Uttar Pradesh

**TENDER NO: UPNEDA/SSL (W-LED)/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. 91-0522-2720829, 2720652, TeleFax: 0522-2720779

Website:<http://neda.up.nic.in> e-mail: [compneda@rediffmail.com](mailto:compneda@rediffmail.com)

## e-Tender Notice

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

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

Vibhuti Khand, Gomti Nagar, Lucknow U P

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

Website: [www.upneda.org.in](http://www.upneda.org.in) E-Mail: [compneda@rediffmail.com](mailto:compneda@rediffmail.com), [ho\\_has@rediffmail.com](mailto:ho_has@rediffmail.com)

UPNEDA invites Online Bids from Prospective Bidders through e-tendering for the Design, supply, installation, commissioning and 5 years comprehensive warranty & maintenance of following item at various sites in various districts of Uttar Pradesh. Details as per given below:-

Item	e-Tender No.	Quantity Required	Fee of e-Tender document	Earnest Money
Solar Street Lighting System (W-LED based) with Li-Fe-PO4 battery design, supply, installation, commissioning and 5 years comprehensive warranty & maintenance in various sites of various districts of Uttar Pradesh.	UPNEDA/SSL (W-LED) /2018	Approx. 33000 nos.	Rs.29,500.00 (including GST)	82.50 lakh

The tender document is available at e-Procurement website <http://etender.up.nic.in> and UPNEDA website [www.upneda.org.in](http://www.upneda.org.in) from 21-07-2018. Interested bidders may view, download the e-Bid document, seek clarification and submit their e-Bid online up to the date and time mentioned in the table below:

(a)	Availability of tender document on website	21-07-2018 from 06.30 PM at e-Procurement web site <a href="http://etender.up.nic.in">http://etender.up.nic.in</a> and UPNEDA website <a href="http://www.upneda.org.in">www.upneda.org.in</a>
(b)	Pre Bid Conference	26-07-2018 ; 11.30 AM at UPNEDA Head Office, Vibhuti Khand, Gomti Nagar, Lucknow-226010
(c)	e-Bid submission end date & Time	23-08-2018 upto 06.55 PM
(d)	Online technical e-Bid opening date & time	24-08-2018 at 11.30 AM
(e)	Online financial e-Bid opening date & time (Only of technically qualified bidders)	28-08-2013 at 03.00 PM
(f)	Venue of opening of technical & financial e-Bids	UPNEDA Head Office, Vibhuti Khand, Gomti Nagar, Lucknow-226010

The bidders need to submit the proof/cost of e-Bid document fees and EMD as stated in the 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. Numbers of the system mentioned as above, may increase or decrease. Director, Uttar Pradesh New and Renewable Energy Development Agency, (UPNEDA) reserves the right to reject any or all tenders without assigning any reason thereof. The decision of Director UPNEDA will be final and binding.

Director  
UPNEDA

## 2. Covering Letter:

FROM:-

(Full name and address of the Bidder)

.....  
.....

To:

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

Subject: -Offer in response to e-tender specification No: UPNEDA/SSL (W-LED)/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 to supply, install and carry out 5 years comprehensive warranty maintenance of more than ..... Solar Street Lighting Systems (W-LED) in 4 months. (Supporting document in proof of capacity should be attached)

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

(Signature of Bidder)  
With Seal

### 3. Check list of Annexures

(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) Annexure-I (b)	Details of Tender document fees ( Demand Draft no, date, amount and bank name) Details of Earnest money (bank guarantee no. and date, (valid for four months)	
2.	Annexure-II	The bidder is a Manufacturing Company/Firm/ Corporation Registered in India of SPV cells/Solar PV Modules / Battery /PV system electronics/DC LED lights (conforming to relevant National / International Standards) <b>OR</b> A PV System Integrator having experience in installation, commissioning with 05 years comprehensive maintenance services - At least 10000 Solar Photovoltaic LED Lighting Systems should have been installed / commissioned under MNRE JNSM scheme/SNA's/PSU. (A copy of the order and certificate indicating its successful execution to be enclosed)	
3.	Annexure-III  III(a) III(b) III(c)  III(d)  III(e)  III(f)	Following Test Certificates & Reports for components specified in technical bid (Test Certificates should have been issued on or <b>after 01 April 2016</b> ) <b>i. SPV Modules</b> a) IEC 61215 edition II/ IS 14286 for Crystalline Modules from MNRE/NABL accredited test lab. b) IEC 61730 Part 1 & 2 from MNRE /NABL accredited test lab c) STC Performance Report –I V curve from MNRE/NABL accredited test lab <b>ii. Batteries</b> –MNRE /NABL /IEC authorised test labs report for relevant IEC 62133-2012 or BIS recognized lab (as applicable) <b>iii. Luminaries/Balance of System</b> a) LED – LM-80-08 , Luminaire- LM-79-08 b) Luminaries and charge controller housing- IP 65 c) The design calculation based on LM 79 reports in support of uniformity and Emin/Emax	
4.	Annexure-IV	<b>Charge controller including BMS</b> : The test report of Charge controller and BMS meeting the tender requirement should be submitted from any of the NABL/MNRE Accredited Testing Lab.	
5.	Annexure-V	Test Certificate for the complete Solar Street Lighting System (W-LED) from a MNRE authorized testing center. (Test Certificate should have been issued on or after 1 April 2016.)	
6.	Annexure-VI	A copy of valid GSTIN registration certificate	

7.	Annexure-VII	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)	
8.	Annexure-VIII	A summarized sheet of <b>cumulative financial experience</b> of last three years of <b>PV systems/power plants</b> certified by registered CA	
9.	Annexure-IX	Duly file technical bid Part-6	
10 .	Annexure-X	Bidder should not have been Debar/ blacklisted by any of the State/ Central Government or organizations of the State/Central Government	
11.	Annexure-XI	Authorization letter of the Bidder, for the person representing his firm, that he is authorized to discuss and with specific mention of this e-tender.	
12.	Annexure-XII	An undertaking that the service centers will be opened in allotted districts and list will be submitted before installation of systems.	

\* 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.

\* No extra paper should be submitted in E- Tender as well as with hard copy.

\* if any paper certificate/document is not clear in scanned uploaded the tender document may be rejected.(scanning of paper are not less than 150 dpi in black and white.)

\* Hard copy of tender document should be page numbered and in proper binding and all annexures and their flag along with tender fees and EMD should be in proper order and also uploaded in relevant files of e-tender.

(Signature of Bidder)  
With Seal

#### 4. Particulars of e-tender

1.	e-tender no.	<b>UPNEDA/SSL(W-LED) /2018</b>
2.	Particulars of the work	Design, Supply, installation, commissioning of Solar Street Lighting System W-LED based <b>with Li-Fe-PO4 battery</b> with 05 years warranty and comprehensive maintenance at the identified sites of various district in Uttar Pradesh by UP New And Renewable Development Agency (UPNEDA)
3.	Period of work	Within 4 months from the date of award of work.
4.	Period of validity of bid rates for acceptance	3 months from opening of financial bid
5.	Venue of opening of technical & financial e-bids.	UPNEDA, Head Office, Vibhuti Khand, Gomti Nagar, Lucknow, Uttar Pradesh.

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

(Signature of Bidder)  
With Seal

## 5. 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	Supply capacity in 04 Months	
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)	
15	Details of Bank name and account number etc for RTGS	

( Signature of Bidder)  
with Seal

**6. DECLARATION BY THE BIDDER**  
(REGARDING e-tender NO. UPNEDA/SSL (W-LED)/2018)

I/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 and carryout 5 years comprehensive warranty maintenance of more than ..... Solar Street Lighting Systems (W-LED) in a year.

(Signature of Bidder)  
with SEAL



## **PART-2 : INSTRUCTION TO BIDDERS**

### **SECTION 1: THE TENDER DOCUMENT**

#### **1.1 CONTENT OF e-tender DOCUMENT**

1.1.1 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 | Eligibility condition             |
| Section-3  | Preparation of e-tender           |
| Section-4  | Submission of e-tender            |
| Section -5 | e-tender opening and evaluation   |
| Section-6  | 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:

A prospective Bidder requiring any clarification of the e-tender Documents may contact UPNEDA in writing or by Fax at the UPNEDA's mailing address indicated in the Invitation for e-tender.

The bidders or their authorized representative (s) is/are invited to attend **pre-bid meeting to be held on 26th July, 2018 at 11.30 AM at UPNEDA HO, Lucknow.**

All bidders are requested to remain updated with the websites. 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.

### **Enquiries/clarifications may be sought by the Bidder from:**

Director,  
Uttar Pradesh New & Renewable Energy Development Agency,  
Vibhuti Khand, Gomti Nagar, Lucknow  
Phone: 0522-2720652  
Fax: 0522-2720779, 2720829  
Email: compneda@rediffmail.com  
Website: <http://neda.up.nic.in>

## 1.4 AMENDMENT OF e-tender DOCUMENTS

At any time prior to the submission of the e-tender the UPNEDA may for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the e-tender documents by amendments. Such document shall be made available on websites: <http://neda.up.nic.in> and <http://etender.up.nic.in>. All are requested to remain updated with the website. No separate reply/ intimation will be given elsewhere.

Therefore all concerned are required to remain updated with the website.

(Signature of Bidder)  
with SEAL

## SECTION 2: ELIGIBILITY CONDITIONS

### Eligibility Conditions for Bidders

#### 1. Minimum Eligibility Conditions:

##### 1.1 The Bidder should be

The bidder is a Manufacturing Company/Firm/ Corporation Registered in India of SPV cells/Solar PV Modules / Battery /PV system electronics/DC LED lights (conforming to relevant National / International Standards)

**OR**

A PV System Integrator having experience in installation, commissioning with 05 years comprehensive maintenance services - At least 10000 Solar Photovoltaic LED Lighting Systems should have been installed / commissioned under MNRE JNSM scheme/SNA's/PSU.

**(A copy of the order and certificate indicating its successful execution to be enclosed)**

**1.2** Test Certificate for the Complete Solar Street Lighting System (W-LED) from a MNRE authorized testing center. (Test Certificate should have been issued on or after **1 April 2016.**)

##### 1.3. SPV Modules

a) IEC 61215 edition II/ IS 14286 for Crystalline Modules from MNRE/NABL accredited test lab.

b) IEC 61730 Part 1 & 2 from MNRE /NABL accredited test lab

c) STC Performance Report –I V curve from MNRE/NABL accredited test lab

ii. **Batteries** –MNRE /NABL /IEC authorised test labs report for relevant IEC 62133-2012 or BIS recognized lab (as applicable)

##### iii. **Luminaries/Balance of System**

a) LED – LM-80-08 , Luminaire- LM-79-08

b) Luminaries and charge controller housing- IP 65

c) The design calculation based on LM 79 reports in support of uniformity and Emin/Emax

**1.4** The bidder should have Three years (**i.e. 2015-16, 2016-17 and 2017-18**) experience in executing contract of Solar Photovoltaic Systems/Power Plants with 05 years annual maintenance contract (Installed and commissioned). (A copy of the orders and certificates indicating its successful execution to be enclosed)

**1.5 Cumulative Financial Experience\*** of the Bidder in executing contracts of **Solar Photovoltaic Systems/Power plants with 05 years AMC (Installed & Commissioned) should be at least 25% of the tender value.**

**1.6** The Bidder should have valid GSTIN registration certificate. A copy of which should be enclosed.

**1.7** Overall Average Annual Turnover of the individual Company/Firm/Corporation in the last three financial years **i.e. 2015-16, 2016-17 and 2017-18 (Audited)** should be at least **Rs 25.00 Crores (Twenty Five Crores Only)** (This must only be the individual Company/Firm's turnover and not that of any group of Companies). (A summarized sheet of average turnover, certified by registered CA should be compulsorily enclosed)

(Signature of Bidder)  
with SEAL

## **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) Documentary evidence establishing that the bidder is eligible to Tender and is qualified to perform the contract if its tender is accepted. Check list of Annexure as provided in e-tender document
- (e) 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.
- (f) 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
- (g) Duly filled technical bid format Part-6.

### **3.3 BID PRICE**

- 3.3.1 The Bidder shall indicate prices on the appropriate financial bid schedule.

#### **3.3.2 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 or GST as applicable will be deducted from the payments 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 equivalent to 10% of total value of the contract in the form of Bank Guarantee valid for a period of 18 months from the date of execution of agreement. The bank guarantee may be issued by a nationalized bank. Bank Guarantee shall be in favour of "Director, UPNEDA". The aforesaid Bank Guarantee shall be furnished prior to the execution of agreement. The performance Bank Guarantee shall be released after completion of installation and commissioning of all systems. **The performance security is exempted for Micro and Small Industry setup and registered in Uttar Pradesh. The DIC and MSME certificates in this regard should be submitted.**

### 3.6 PERIOD OF VALIDITY OF e-tender

3.6.1 Validity of the bid 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 1% (one percent) of tendered value i.e. **Rs. 82.50 lakh ( Eighty Two Lakh Fifty Thousand Only)** in the form of Bank guarantee issued by a nationalized bank. The bank guarantee shall be valid for a period of 4 (Four) months from the opening of technical bid. **The earnest money is exempted for Micro and Small Industry setup and registered in Uttar Pradesh. The DIC and MSME certificates in this regard should be submitted with tender document.**

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 10% 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/firm 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 document shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to bid and bidder to the contract. The letter of authorization shall be submitted along with power-of-attorney. All the pages of the bid shall be initialed by the person or persons signing the e-tender.
- 3.8.4 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder in which case such corrections shall be initialed by the person or persons signing the e-tender.

(Signature of Bidder)  
with SEAL

## SECTION: 4: UPLOADING OF e-tender

- 4.1 Uploading of e-tender: The bid shall be uploaded online as per guidelines of U P Electronics Corporation Ltd. (UPLC), 10, Ashok Marg, Lucknow (UP).
- 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**) with original demand draft as tender fees and original bank guarantee as EMD 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.

### 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

6.0 The Procedure for Finalization of BID would be as follows:

6.1 Finalization of BID:

- First the Technical bids shall be opened and evaluated.
- Then the price bid of technically qualified bidders shall be opened.
- The lowest rate (L-1) will be the approved rates.

6.2 Finalization of Empanelment:

- The lowest rate (i.e. L-1) received (and in turn approved by the competent authority) would be the "Approved Rate".
- "Approved Lowest Rate" would be offered to those lowest bidders (i.e. to L-2, L3 and so on) having price not more than 15% of lowest approved rates (L1) if they agree to work at L-1 approved rate will be empanelled .
- Maximum 20 % of the total quantity purchased in three years has to be distributed equally amongst successful micro and small industries/ firms bidders. Therefore 6.5% of the total order quantity for this year shall be awarded amongst the micro and small industries qualified firm/firms at the lowest approved rate subject to their consent at to work on lowest rate and their capacity. If MSME category bidder will be lowest one (L1) then L1 will be awarded 60% of 6.5% of MSME work order. The remaining 40% of 6.5% of MSME quantity shall be awarded among others qualified MSME firms.
- The bidder other than MSME will be awarded in remaining of 93.5% of total bid quantity. The lowest bidder other than MSME firms qualified and agreed on approved rate L1 shall be awarded 60% of 93.5% or as per its capacity given in the bid, whichever is lower and remaining 40% of 93.5% shall be awarded in other empanelled bidders.
- If other than MSME category bidder will be L1 then L1 will be awarded 60% of 93.5% of work order. The remaining quantity shall be awarded among others qualified other than MSME firm.
- UPNEDA will assign districts to the short listed contractor/ bidders /suppliers as and when districts are ready to take supplies. UPNEDA will place orders on the contractor/ bidder. UPNEDA may stagger supplies in a district depending on readiness of each village.
- Training of the users and entrepreneurs/ operators will be arranged by the contractor/ bidder at their own cost.
- After work order is placed for work, should be executed within the time schedule stipulated in work order. In case of delay (for any reason other than due to Force Majeure conditions or any extension thereof granted to him by UPNEDA) a penalty to 1.0% of the price of the unperformed services for first 04 weeks, 2.0% for next 5 to 8 weeks and 3.0 % for 9 to 10 weeks subject to maximum 18% shall be deducted on unperformed services. If maximum penalty 18% reaches UPNEDA may consider termination of the contract. UPNEDA may assess the progress of work and take decision where the work order is to be cancelled and debar/blacklist the firm or continue to give extension with penalty.

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 AWARDING THE CONTRACT :

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.

Signature of Bidder  
with seal

### PART 3 : GENERAL CONDITIONS OF CONTRACT

- 1.0 In the deed of contract unless the context otherwise requires:-
- 1.1 UPNEDA shall short list the successful bidder (s) on "Rate Contract" basis after verifying their capacity. The Project shall be executed by UPNEDA. The successful bidder (s) shall have to sign the Contract with Uttar Pradesh New and Renewable Energy Development Agency, U.P. (UPNEDA).

#### 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 on turn-key basis. The work shall be completed within 04 (four) months from the date of placement of work order. 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 2 months on the same terms and conditions as contained in this agreement.
- 1.5 The agreement shall be deemed to be extended till the date of completion of last work order subject to the completion period as provided in the clause 1.3.
- 1.6 In the interest of the work and the programme, agreement executed between the contractor/ bidder and the "UPNEDA" may be extended to a mutually agreed period, if 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. No subcontract or dealership is allowed for execution of work.

## 2 LIQUIDATED DAMAGES

2.1 If the contractor/ bidder fails to perform the services within the time periods specified in the contract (In case of delay for any reason other than due to Force Majeure conditions or any extension thereof granted to him by UPNEDA) the "UPNEDA" shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damage, a sum equivalent to 1.0% of the price of the unperformed services for each week till 04 weeks; 2.0% for next 5 to 8 weeks and 3.0 % for 9 to 10 weeks subject to maximum 18% shall be deducted on unperformed services. If maximum penalty 18% reaches UPNEDA may consider termination of the contract. If maximum penalty 18% reaches UPNEDA may asses the progress of work and take decision where the work order is to be cancelled and debar/blacklist the firm or continue to give extension with penalty. In the case of violation of contract, UPNEDA may confiscate pending payments/ dues of the contractor/ bidder assigning specific reasons and shall also have the power to debar/ blacklist the contractor/ bidder in similar circumstances. UPNEDA may also invoke performance/security bank guarantee of 10%.

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

## 4 FORCE MAJEURE

4.1 Notwithstanding the provisions of clauses contained in this deed; the contractor/ bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfil 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 reduce or cut it down. If the work is stopped all together, the contractor/bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. Such expenses shall be assessed by “UPNEDA”, whose decision shall be final and 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.

#### 10.3 INSPECTION AT WORKS.

10.3.1 The “UPNEDA”, his duly authorized representative shall have at all reasonable times access to the contractor/ bidders premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the works during its manufacture.

10.3.2 The contractor/ bidder shall give the “UPNEDA”, 15 day's written notice of any material being ready for testing. It shall be mandatory that such notice should reach “UPNEDA” within 30 days of placement of work order. Such tests shall be on the contractor/ bidder's accounts/ expenses except for the expenses of the inspector. “UPNEDA” reserves the full rights, to waive off inspection of material.

10.3.3 The contractor/ bidder are required to get the entire lot of the ordered material inspected at one time, before the supply of the materials. In case the contractor/ bidder fails to get the entire lot inspected at one time, the total expenses of the further inspection will be borne by the supplier/contractor/ bidder.

10.3.4 UPNEDA will bear the inspector cost at only one manufacturing plant. If a component is produced in more than one location, then the cost of positioning the inspection in the second and subsequent plants would be borne by the successful Bidder at their cost.

10.3.5 The inspection by “UPNEDA” and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the contractor/ bidder in respect of the agreed quality assurance programme forming a part of the contract.

## 11. WARRANTY

11.1 The contractor/ bidder shall warrant as per standards for quality that anything to be furnished shall be new, free from all defects and faults in material, workmanship and manufacture, shall be of the highest grade and consistent with established and generally accepted standards for material of the type ordered, shall be in full conformity with the specifications, drawing or samples, if any and shall if operable, operate properly. Nothing in clause 10 above shall in any way release the contractor/ bidder from any guarantee or other obligations under this contract.

11.2 Performance of Equipment: In addition to the warranty as already provided, the contractor/bidder shall guarantee satisfactory performance of the equipment and shall be responsible for the period or up to the date specified in clause 11.3 hereof after the equipment has been accepted by the “UPNEDA” to the extent for any defects that may develop such defects shall be removed at his own cost when called upon to do so by the “UPNEDA”

11.3 The Warranty period shall be 25 Years for the PV modules and 5 years for complete system including battery from the date of commissioning and handing over of the system. The contractor/ bidder shall rectify defects developed in the system within Warranty period promptly. In case the defects are not rectified within a week of the receipt of the complaint by the contractor/ bidder “UPNEDA” shall have full liberty to restore the system in working condition. The expenditure so incurred by “UPNEDA” shall be deducted from the contractor/ bidder pending claims, security/performance guarantee deposit or in other law full manner.

11.4 Since the maintenance of the system may also be taken up by the contractor/ bidder after expiry of 05 years of warranty period if the end user/ "UPNEDA" so desires, the contractor/bidder shall take up annual maintenance of the installed system.

11.5 The contractor/ bidder shall maintain the system under annual maintenance contract with the end user.

12. Notice statement and other communication send by “UPNEDA” through registered post or fax or Email to the contractor/ bidder at his specified addresses shall be deemed to have been delivered to the contractor/ bidder.

13. Any work which is not covered under this contract but is essential required for the completion of job (To the satisfaction of UPNEDA) shall be carried out by the contractor as extra item or which payment shall be made separately at the rates decided by UPNEDA.

14. The work shall be carried out by the contractor/ bidder as per design and drawings approved by “UPNEDA”, wherever, necessary, the contractor/ bidder shall submit relevant designs and drawings for approval of “UPNEDA”, well in advance. Work carried out without

UPNEDA's approval shall not be accepted and the "UPNEDA" shall have right to get it removed and to recover the cost so incurred from the contractor/ bidder.

15. The contractor/ bidder shall provide one copy system manual containing instruction manual/ routine maintenance manual and maintenance record of the systems with each unit supplied or installed, this shall be both in English and Hindi language. (The draft of pass book shall be approved by UPNEDA)

The following minimum details must be provided with manual:

- (a) About the complete photovoltaic system including PV modules, battery and electronics
  - (b) Do's and Don'ts
  - (c) Clear instructions on regular maintenance and trouble shooting of the system
  - (d) Name & address of the contact person in case of non-functioning of the system.
  - (e) About LED lighting
16. The contractor/ bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of "UPNEDA". **The contractor will also submit a soft and hard copy of photograph of system with UID number (issued by UPNEDA) written on Pole/box with handing over certificate. The photograph/ details of the systems is also to be uploaded on "RESIMS" software of UPNEDA by the contractor/ bidder as directed by UPNEDA.**
  17. 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.

#### 18. PACKING FORWARDING

- 18.1 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.
- 18.2 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.

#### 19. 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.

## 20. INSURANCE

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

## 21. 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.

## 22. 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”.

## 23. 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”.

## 24. 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.

## 25. NOTICE

25.1 Any notice given by one party to the other pursuant to the contract shall be sent in writing or by fax and confirmed in writing to the address specified for that purpose in the special condition of contract.

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

## 26. TAXES DUTIES AND INSURANCE:

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



27. OTHERS:

- 27.1 All the LED's use in luminary should have same characteristics.
- 27.2 I-V curve of the each module technical details such as Voc, Isc, FF, module and cell efficiency and Pmax etc shall be supplied along-with each consignment and copy should be sent to "UPNEDA" HQ for records.
- 27.3 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.
- 27.4 The Contractor/ bidder shall continue to provide spare parts after the expiry of warranty period at the users cost. If the contractor/ bidder fail to continue to supply spare parts and services to users "UPNEDA" shall take appropriate action against the Contractor/ bidder.
- 27.5 After successful supply/commissioning of the system and training, the system will be handed over to the beneficiary institutes /Panchayat etc designated by the UPNEDA.
- 27.6 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.
- 27.7 The contractor will supply, install a sample system (non-returnable & as quoted for the tender) at UPNEDA's Head Quarters/ Research and Training Centre at Chihat Lucknow for technical performance, Evaluation, testing etc.

**28. PAYMENTS and Value of Goods and Services:**

The payments shall be made as per the following terms and conditions:

- i) 70% of the ordered value will be treated as supply of material and shall be paid after the supply of complete system at site and duly certified by the concerned district officer of UPNEDA as per the technical specification and terms and conditions specified in the contract.
- ii.) 15% of the ordered value will be treated as installation cost and shall be paid after establishing of service centre, installation and commissioning of complete system with **sign board** as prescribed by UPNEDA along with the summary of Joint Commissioning & handing over certificate, indicating bill of material and successful commissioning duly countersigned by the designated officer and end user.
- iii) The balance 15% payment shall be billed as AMC charges on annual basis kept as security deposit and to be released @ 3% at the end of each year for 5 years, on satisfactory performance and timely submission of quarterly performance report. In case of advance of AMC, this can be released immediately after installation and commissioning of the system against bank guarantee of balance amount of 15% payment valid for a period of 66 months.
29. In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of "UPNEDA" shall be final.

(Signature of Bidder)  
with seal

## PART -4

### SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

#### SCOPE OF WORK

The scope of work includes design, supply, installation, commissioning of Solar Street Lighting Systems (LED based) including 05 years comprehensive warranty maintenance in various villages/ hamlets, institutions, individuals etc of various districts of Uttar Pradesh as directed by UPNEDA at sites identified by UPNEDA as per the conditions in this document and following specifications.

The scope of work also include **mandatory opening of Service Center in their name in concerned district through which servicing and maintenance may also be provided as stipulated quarterly in a year and with in 72 hours time as per Part 5 of this document.**

#### GENERAL TECHNICAL SPECIFICATION:

A Solar Street Light (LED based) consist of white LED luminary of maximum 12 Watt ( LED + Driver) as per configuration along with solar PV modules and Li-Fe-PO4 battery of given capacity, necessary control electronics-inter connecting wires / cables, module mounting structures etc. to operate the load for dusk to dawn. The broad performance specifications of a White Light Emitting Diode (W-LED) light source based solar street lighting system are given below.

#### BROAD PERFORMANCE PARAMETERS

PV Module	<b>Only indigenous modules shall be used in the project.</b> SPV module 75 Wp at $16.4 \pm 0.2$ Volt under STC. Module Voc minimum of 21 V.
Battery	Lithium Ferro Phosphate (Li-Fe-PO4 or LFP) 12.8 Volt, 40 Ah, at STC
Light Source	<ul style="list-style-type: none"><li>• White Light Emitting Diode (W-LED) 12 Watt( LED +Driver)</li><li>• Using LEDs which emits ultraviolet light will not be permitted</li></ul>
Light Out put	White colour (colour temperature 5500-6500 K). Lumen efficacy of LED-min 130 lumens/Watt @350 mA. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred.
Mounting of light, Controller and Battery pack	Approx., 4 meter above the ground, Mounted at band pipe.
Average duty cycle	Dusk to dawn

#### MINIMUM TECHNICAL REQUIREMENTS / STANDARDS

##### 1. DUTY CYCLE

- i. The LED solar street lighting system should be designed to operate for dusk to dawn

## 2. SPV MODULES:

- i. **Only indigenous modules of IEC Tested shall only be used in the project.** Crystalline high power/efficiency cells shall be used in the solar photovoltaic module. The power output of the module shall not be less than 75 Wp at  $16.4 \pm 0.2$  Volt under standard test conditions (STC). The module efficiency should not be less than 14%.
- ii. The open circuit voltage of the PV modules under STC should be at least 21.0 Volts.
- iii. PV module must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
- iv. The terminal box on the module shall be designed for long life out door operation in harsh environment should have a provision for opening for replacing the cable, if required.
- v. The offered module shall be in accordance with the requirements of MNRE.
- vi. Latest edition of IEC 61215 edition II / IS 14286 for Crystalline and shall be certified by MNRE/NABL authorized test center. The bidder shall submit appropriate certificates.
- vii. PV modules must quality to IEC 61730 Part 1- requirements for construction & Part 2 – requirements for testing, for safety qualification.
- viii. Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided and if required, blocking diode(s) may also be provided.
- ix. IDENTIFICATION AND TRACEABILITY

Each PV module must use a identification tag which must contain the following information:

- (i) Name of the manufacturer with logo
- (ii) Month and year of the manufacture
- (iii) Unique Serial No
- (iv) Model No of the module with voltage and rated wattage
- (viii) Made in India

## 2. **Lithium-Ferro-Phosphate (Li-Fe-Po4) Battery :**

The Battery pack should be got tested as per IEC 62133-2012 or BIS latest standard from BIS recognized labs or MNRE accredited test center, (Certificate Enclosed). The cell capacity should be 10AH/40AH.

1. Capacity of the battery shall not be less than 12.8 V (nominal), 40 Ah at STC.
2. The battery cycle life should be 2000 cycle at 100% discharge.
3. The battery pack with BMS (Battery Management System) should be integrated with the system in such way that it is theft proof and not removable from system. It should be installed with combination of module structure/luminaire. The height of battery pack will be approximate, 4 meters above the ground. The system must withstand wind velocity of 150 km/hr. The battery pack should be capable of high rate of heat dissipations.

4. The battery should operate between temperature range of 0 degree C to 55 degree C

The other feature of the battery should be:

Sr. No.	Description	Specifications
1	Battery Configuration	12.8V- 40AH; LifePO4
2	Working Temperature Range (both for charging & discharging)	0-55 deg C
3	Storage Temperature Range	@ 0-20 Deg- 6 months
4	Cycle Life (Full charge to full discharge @ 25 deg C before capacity of battery falls below 75%)	more than 2000 Cycles
5	Battery Warranty	5 years
6	Capacity of Individual Cells	3.2V and should 10AH or 40 AH
7	Type of Cell	Prismatic
8	Nominal Capacity	40AH
9	Nominal Voltage	12.8V
10	Voltage Range	10.5V - 14.6V
11	Total Energy	512 WHr
12	Rated Charging current	10 Amps
13	Maximum Charging current	20 Amps
14	Maximum Discharging Current	10 Amps
15	Discharge Cut off Voltage	10.5V
16	Over Charge Cut off Voltage	14.6V+/- 0.2V
17	Charging Time	Around 5 Hours

### 3. ELECTRONICS/CHARGE CONTROLLER :

- i. MPPT Charge controller to maximize energy drawn from the solar PV array. The MPPT Charger should be microcontroller based. The charge controller should have:

#### Solar Charge Controller

Sr No.	Description	Specification
1	Charge controller Type	MPPT-Maximum Power point Tracking EN 50530 : Performance evaluation of maximum power point tracking (MPPT)
2	Charge controller Rating @ Related Voltage	20 Amps
3	Module Rating	75 Wp with positive tolerance
		36 Cell configuration
		Voc-approx. 21 Volts
		Vmp-approx. 17Volts
4	Load current Max @rated Voltage	5 Amps
5	Ideal current consumption (self-consumption)	< 30 mAmps
6	Maximum Efficiency	>90%
7	Battery Voltage Setting	Charging 14v +/-0.20 Volts
		Battery Low load disconnect 10.5 Volts
		Load Reconnects-12.60V+/-0.20Volts
		Default setting shall be Solar Charging
		Low Battery Cutt of - 11.1 V+/- 2%
8	LED indication with LCD display	LED- Green with Slow blinking – Charging under Process-
		Red- System Fault
9	Protection	Over Charge / Deep Discharge
		Over load – Auto Shutdown and restart
		Solar & Battery reverse protection
		Fuse protection of Mains
		Reverse current from battery at night
10	Health Monitoring System	The charge controller should be provided a monitoring system enable it to monitor the status battery, Luminiare and modules with mobile app.

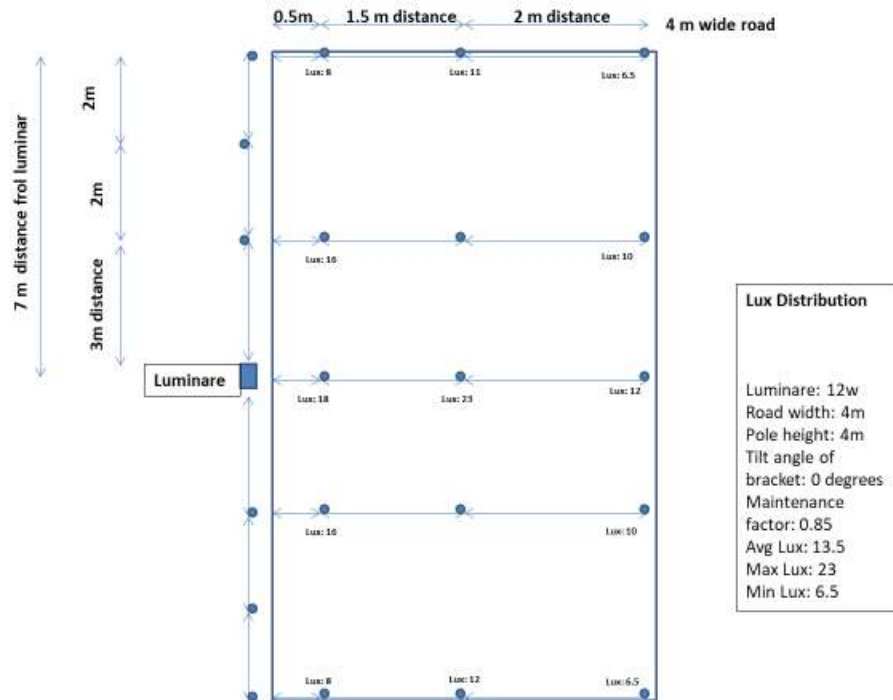
- Electronics should operate at 12.8V and the efficiency of DC-DC converter should be at least 90 %.
- Full Protection against polarity reversal of PV array and battery, Over Current, Short Circuit, Deep Discharge, Input Surge Voltage, open circuit, accidental short circuit and night time leakage of current from battery to Module.

The Lithium iron phosphate battery needs a very good “Battery Management System” BMS to ensure the proper charging and discharging of each cell of battery with proper protection of battery when temperature is reaching beyond battery permissible limits. This battery also needs constant current and constants voltage charging methodology related to upper voltage limit

of batter. BMS primary focus are therefore on the safety and the protection of the battery ,to Minimize the risk of sudden failure and to maximize the life cycle of the battery . The secondary function of the BMS is to perform battery diagnostics, such as state of the charge (SOC) estimation, state of health (SOH) estimation and state of power (SOP) estimation. Hence a very good battery management system to be incorporated.

#### **4. LIGHT SOURCE:**

- i. The light source will be of white LED type The color temperature of white LEDs used in the system should be in the range of 5500 degree K – 6500 degree K. Use of LEDs which emits ultraviolet light will not be permitted.
- ii. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred. The light output from the white LED light source should be almost constant.
- iii. **The lamps, DC-DC driver and battery management system (BMS) should be housed in aluminum die-casted casing suitable for outdoor use and shall comply with IP 65.** The temperature of heat sink should not increase more than 30 degree C above ambient temperature even after 48 hrs of continuous operation. This condition should be complied for the dusk to dawn operation of the lamps while battery operating at any voltage between the load disconnect and charge regulation set point.
- iv. High power LED of minimum 1 (one) watt each capacity capable to withstand maximum 1 amp driving current having optical lens angle greater than 120 degree shall be used. The LED of Having LM 79 and LM 80 test report shall only be used.
- v. The LED efficacy should be 130 lumen / watt, the lumens output of luminaire should not be less than 1500 lumens.
- vi. The lumen depreciation of LED shall not be more than 30% even after 50,000 burning hours.
- vii. Power consumption of the LED Luminaire / Lighting unit shall not be more than 12 W (including LED and Driver power loss).
- viii. The luminary should have Suitable UV Stabilized polycarbonate reflector.
- ix. Luminaries, reflectors and LED's should be engineered in such a way to give the specified lumens out put distributed uniformly.
- x. The luminary should be designed, manufactured and tested as per LM-79-08 or latest standard by the MNRE/NABAL accredited lab for such.
- xi. The luminary should be tested for its 50000 hours operating life as per LM-79 test methodology or other instrumental/BIS Standard. The test report should be from MNRE/ NABL accredited lab.
- xii. The PCB used in luminaries should have lead free-auto soldering and replaceable card type.
- xiii. The firm should have in house test facilities for testing of the luminary.
- ivx. The system supplied should have minimum 5% spare parts except Panel and Batteries to be kept at service center. Service Center should mandatory be opened before commissioning of systems and at least till warrantee period.
- xv. The lux level over a 4 meter wide road should not be less than 5% at the point mentioned below in the lux level distribution chart.



**Lux Distribution**

Luminaire: 12w  
 Road width: 4m  
 Pole height: 4m  
 Tilt angle of bracket: 0 degrees  
 Maintenance factor: 0.85  
 Avg Lux: 13.5  
 Max Lux: 23  
 Min Lux: 6.5

**Lighting parameters -**

Uniformity of light (min / avg) –0.45  
 Uniformity of light (min / max) –0.25

**Lux Distribution**

Luminaire: 12w  
 Road width: 4m  
 Pole height: 4m  
 Tilt angle of bracket: 0 degrees  
 Maintenance factor: 0.85  
 Avg Lux: 13.0  
 Max Lux: 23  
 Min Lux: 6.0

xvi. Other Parameters :

- LED DC current regulation – better than 3 %
  - Input – 12.8 V DC
  - Driver Type- DC-DC ( as per IEC 62384)
  - CRI > 70 % Typical
  - Lighting quality- Free from glare, flickering and UV
  - Ambient temp 0 to– upto 55 deg
  - Total electronics efficiency > =90 %
- xvii. The connecting wires used inside the luminaries, shall be low smoke halogen free, fire retardant e-beam cable and fuse protection shall be provided at input side.
- xviii. Auto resettable reverse polarity protection shall be provided.
- xiv. LED lighting unit shall comply with LM 79-08 and LM 80-08 Standards and copy of test

certificate from Authorized lab should be submitted.

- xv. The make, model number, country of origin and technical characteristics of white LEDs used in the lighting system must be furnished.
- xvi. **In order make the system performance better and longer life a suitable micro controller dimmer must be provided to dim the light about 50% between 12 PM to 4 AM in night.**
- xvii. Lux level available from the light source mounted at a height of 4 meter, Across the road width of 4 meter and along the road for 7 meter distance both side from pole with interval of 1 meter shall be submitted. The luminaries must have street light distribution polar curve with more than 36 degree of spread and more than 44 degree of throw. It must have a bat wing distribution pattern & must provide uniform lighting in road application as per IS 1944 road lighting standard. The bidder should submit the polar curve of luminaries along with technical bid.
  - Electronics should operate at 12.8V and the efficiency of DC-DC converter should be at least 90 %.
  - Fuses should be provided to protect against short circuit conditions.
  - A blocking diode should be provided as part of the electronics, to prevent reverse flow of current through the PV module, in case such a diode is not provided with the PV module.
  - Full protection against open circuit, accidental short circuit and reverse polarity should be provided.
  - Charge controller shall have automatic dusk-dawn circuit based on spv module as sensor for switching on/off the street light without manual intervention
  - The self consumption of the charge controller shall not be more than 20 mA at rated voltage and rated current.
  - Adequate protection shall also be incorporated under no-load conditions (i.e. when the system is ON & the load (LED Lamp is removed)
  - The system should be provided with 2 LED indicators: a green light to indicate charging in progress and a red LED to indicate deep discharge condition of the battery. The green LED should glow only when the battery is actually being charged.
  - All capacitors shall be rated for max. temp of 105° C.
  - Resistances shall preferably be made of metal film of adequate rating.
  - Devices shall have adequate thermal margin at amb. temp. of 55° C
  - Fiber glass epoxy of grade FR 4 or superior shall be used for PCB boards.

### Technical Requirement/Standards

Item / System	Applicable BIS /Equivalent IEC Standard Or MNRE Specifications	
	Standard Description	Standard Number
Solar PV Systems	Crystalline Silicon Terrestrial PV Modules	IEC 61215 / IS14286 Test Certificates / Reports from



Charge Controller/MPPT and Protections		IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard. If IEC certificates are not available for 75 Wp capacity, qualification certificate from IEC / NABL accredited laboratory as per relevant standard for any of the higher wattage regular module shall be furnished. Further, the manufacturer should certify that the supplied module is also manufactured using same material design and process similar to that of certified PV module  IEC 62093 Equivalent BIS Std.
Storage Batteries	General Requirements & Methods of Testing LifePO4 Capacity Test, Charge/Discharge Efficiency Self-Discharge	As per IEC
Cables	General Test and Measuring Method  PVC insulated cables for working voltage up to and including 1100 V  UV resistant for outdoor installation	IEC 60189  IS 694/ IS 1554  IS/IEC 69947
Junction Boxes /Enclosures for drivers/Charge Controllers/Luminaries	General Requirements	IEC 62208  IP 65
LED	Lamps Luminary	LM -80-08 LM 79-08

## 6. MECHANICAL HARDWARE

- (i) A metallic frame structure (hot dip galvanized with 35\*35\*5 mm angle) to be fixed on the pole to hold the SPV module(s). The frame structure should be fixed at 30 degree from horizontal facing true south.

(ii) The pole should be hot dip galvanized (120 microns) GI pipe of 3 mm thickness with min 75 mm diameter of 5 meter length. The pole should have the provision to hold the weather proof lamp housing individually as per case. SPV panel shall be mounted on pole. The mounting structure shall be fixed in the center of GI tubular pole made flat at fixing end, square angle adjusting plate of 115 mm size 5 mm thick shall be provided. So that SPV panel can be fixed at inclination of 30 degree from horizontal.

(a) The metallic arm for holding the light assembly should be set at a suitable angle to maximize uniform illumination of desired level over the specified area (4 meter wide road). The arm length of luminary holder from pole should be 0.6 meter for its easy approachability for repairing and replacement.

(b) Two 10 mm steal bar of 300 mm length should be inserted at the interval of 25 mm from bottom of the pole.

iii) ELECTRIC CABLE

The electric cable used shall be twin core PVC insulated water and UV resistance copper cable of minimum size 1.5 mm. Cable shall meet IS 1554 / 694 Part 1:1988 & shall be of 650 V/ 1.1 kV

7. OTHER FEATURES

A toll free number (i.e. 1800 180 0005) of IVRS of UPNEDA and 14 digit UID number of minimum thickness 5mm and height of letter should be at least 25mm (issued/provided by UPNEDA) is to be embossed / punch/ nut-bolted strip on pole between 1-1.5 meter above from ground level by contractor/ bidder, which in case of non-working/ operational problems etc of system will be dialed by the beneficiary etc to lodge a complaint in respect of system problems. The suitable sign board of 500 mm x 300 mm size power coated, MS Sheet assigned by UPNEDA should be installed on pole under different schemes as per the requirement. The IVRS will divert the complaint to Contractor/ bidder through e-mail, SMS etc. The contractor/ bidder will have to rectify the same to make/ restore the system to working position within 72 hours in the warrantee period of 5 years, failing which the system may be get rectified on contractor/ bidder cost and the cost will be recovered by contractor/ bidders pending claims what so ever and appropriate action as per non compliance etc of agreement will be considered / taken.

8. INSTALLATION OF SYSTEM:

The system should be properly installed at site. The SPV module mounting structure along with pole should be properly grouted depending upon the location and requirement of the site. The grouting should be such that it must withstand the maximum wind speed /storm. The pole should be grouted with CC mixture of 1:2:4 of dia 300 mm having depth of 900 mm and 200 mm above ground level with 200 mm dia. Adequate space should be provided behind the PV module/array for allowing un-obstructed air flow for passive cooling. Cables of appropriate size should be used to keep electrical losses to a bare minimum. All wiring should be in a proper conduit or capping case. Wire should not be

hanging loose. Any minor items which are not specifically included in the scope of supply but required for proper installation and efficient operation of the SPV systems, is to be provided by the manufacturer as per standards.

9. AUTHORIZED TESTING LABORATORIES/ CENTERS

Test certificates of complete solar street lighting system should be from MNRE Accredited test Labs. Reports for components should be from any of the NABL/ IEC Accredited Testing Laboratories or MNRE approved test centers. The list of MNRE approved test centers will be reviewed and updated from time to time.

10. WARRANTY

The mechanical structures, electrical works including power conditioners /charge controllers/ maximum power point tracker units/DC circuit drivers/distribution boards/digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/ PV lighting systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

11. TRACEABILITY OF THE PRODUCT TO BE SUPPLIED

In order to prevent the misuse of the product such as unauthorized sale or diversion to the open market, the following incorporation shall be made in the product.

- a) Engraving (or) Screen printing of UPNEDA at a suitable place on the main components viz., SPV Panel, LED Lighting Units to be used in the installation of the solar street lighting systems.
- b) The system unique ID number as provided by UPNEDA shall be **permanently embossed / punch on a metallic strip nut-bolted / riveted to or directly embossed/punch on pole of the system. The UID number painting or marking will not be allowed.**
- c) **sign board** as prescribed by UPNEDA should be fixed on pole.

(Signature of Bidder)  
**with seal**

## **PART -5**

### **WARRANTY AND MAINTENANCE**

- The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 10 years and 80% at the end of 25 years).
- The mechanical structures, electrical / system electronics components including battery and overall workmanship of the Solar Lighting Systems must be warranted for a minimum of 5 years from the date of commissioning and handing over of the system.
- The Comprehensive Maintenance (within warranty period) shall be executed by the firm themselves. Service centres (opened till warranty period) of the firm in the concerned district is mandatory.
- It is mandatory for the contractor/ bidder to open an authorized service centre (before the commissioning of system and at least till warranty period) in the concerned district before the supply/installation of the system. The copy of details of service center should be provided to UPNEDA district and Head office. Any change of address of service center, the change should be intimated to UPNEDA within 03 days.
- Necessary maintenance spares for five years trouble free operation shall also be supplied with the system.
- The contractor/ bidder shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become dysfunctional within one month of issue of any such complaint by the purchaser.
- 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 3 days.
- A separate Service & Maintenance passbook shall be maintained with each system as per the format provided by UPNEDA. The deputed personnel shall be in a position to check and test all the components regularly, so that preventive actions, if any, could be taken well in advance to save any equipment from damage. Any abnormal behaviour of any component shall be brought to the notice of UPNEDA for appropriate action.
- Normal and preventive maintenance of the SPV street lighting systems such as cleaning of module surface, tightening of all electrical connections also the duties of the deputed personnel during quarterly maintenance visits.
- During operation and maintenance period of the SPV street lighting systems, if there is any loss or damage of any component due to mismanagement/mis 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

(Signature of Bidder)

**PART- 6**  
e-tender No: UPNEDA/SSL (W-LED)/2018  
**Technical BID**

	Description	To be furnished by the Tenderer
<b>A.</b>	<b>Solar PV Module</b>	
1.	Type of Module	
2.	Make	
3.	Availability of RFID tag	
4.	Max power at STC Pmax (W)	
5.	Max power voltage Vmp(V)	
6.	Max power current Imp(A)	
7.	Open circuit voltage Voc (V)	
8.	Short circuit current Isc (A)	
9.	Load current at 16.4 Volt Iload	
10.	Module Efficiency	
11.	No of cells per module	
12.	bypass diodes	
13.	Solar module frame material	
14.	Module Dimension	
15.	Module Weight	
16.	Fill factor	
<b>B.</b>	<b>Battery (Li-Fe-PO4)</b>	
1.	Make	
2.	Type	
3.	Capacity of Battery	
4.	Self Discharge	
5.	DOD	
6.	Design Cycle Life of battery	
7.	Charge efficiency	

8.	Size & Weight of Battery pack	
<b>C.</b>	<b>Electronics</b>	
1.	Make	
2.	Charger Type	
3.	PV Charging Efficiency	
4.	Idle current consumption	
5.	Operating voltage	
6.	Temperature compensated set points	
7.	Details of Indicators provided	
8.	Details of Protections provided Battery Over charge set value	
	Deep discharge set value	
	Short Circuit	
	Open Circuit	
	Reverse polarity	
	Blocking Diode	
	Others	
<b>D.</b>	<b>LED Lighting Unit</b>	
1.	Make and material of housing	
2.	Power consumption of LED lighting unit	
3.	No of LEDs	
4.	Wattage of each LED	
5.	Driver Consumption	
6.	Make and origin of LED	
7.	Lumens output	
8.	LED DC Current Regulation	
9.	Input Voltage	
10.	Beam Angle	
11.	CRI	
12.	LED Efficacy	
13.	Luminaire Efficiency	
14.	Automatic ON/OFF Timings	

15.	Other features ( IP 65 )	
<b>E.</b>	<b>Module Mounting frame</b>	
1.	Material used	
2.	Whether Protection against corrosion provided	
3.	Angle of inclination to horizontal	
<b>F.</b>	<b>Pole</b>	
1.	Material used	
2.	Height (Mtr.)	
3.	Thickness	
4.	Weight of pole	
5.	Diameter	
6.	Whether pole is Galvanized	
<b>G.</b>	<b>Battery PACK housing</b>	
1.	Material	
2.	Dimension	
3.	Whether Protection	
4.	locking arrangement	
<b>H.</b>	<b>Connecting cables / wire</b>	
1.	Material and size	
2.	Details of Switches (Nos.)	
	Any other Details	

(Signature of Bidder)  
with seal

## PART B (Financial Bid)

e-Tender No: UPNEDA/SSL (W-LED) /2018

### FINANCIAL BID

Name of the Firm: -----

Design, Supply, Installation, Commissioning and 5 years Warranty with Comprehensive Maintenance of Complete Solar Street Lighting (White-LED based) with Li-Fe-PO4 Battery System at identified sites of various districts of Uttar Pradesh as per Technical specifications, Terms and Conditions of the e-tender document.

S.N.	Item	Unit Rate (in Rs.)
1.	Design, Supply, Installation, Commissioning and 5 years Warranty with Comprehensive Maintenance of Complete Solar Street Lighting system (White-LED based) with Li-Fe-PO4 Battery at identified sites of various districts and various sites of Uttar Pradesh, FOR sites as per Technical specifications, Terms and Conditions of the e-tender document inclusive of all taxes & duties, storage, transportation up to site, GST, insurance etc. what so ever and any other job required to properly execute the complete work, under the light of bid/agreement and its validity	
Total Amount (In Figures and Words)		

#### NOTES:

1. Certified that rates quoted above are as per the requirement, specification terms & condition mentioned in the e-tender document.
2. The rates are inclusive of all taxes & duties, GST, storage, transportation up to site, insurance etc., and any other job required to properly execute the complete work.

(Signature of Bidder)  
With seal

To be uploaded in Part II.  
Other document / condition, terms if enclosed will liable to be rejection of bid.



**ANNEXURE-A**  
Model Bank Guarantee Format for Furnishing EMD

Whereas .....(hereinafter called the “tenderer”) has submitted their offer dated ..... for the supply of .....(hereinafter called the “tender”) against the purchaser’s tender enquiry No.....---KNOW ALL MEN by these presents that WE..... of..... having our registered office at..... are bound unto..... (hereinafter called the “Purchaser) in the sum of..... for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this..... day of .....20..... THE CONDITIONS OF THIS OBLIGATION ARE:

- (1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity
- (3) Fails to furnish the Performance Security for the due performance of the contract.
- (4) Fails or refuses to accept/execute the contract.

WE undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 (forty five) days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

.....  
(Signature of the authorised officer of the Bank)

.....  
Name and designation of the officer

.....  
Seal, name and address of the Bank / Branch

Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)  
**JOINT COMMISSIONING AND HANDING OVER CERTIFICATE /WARRANTEE CARD:**  
 (To be submitted in 3 copies )

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

Sr. No.	Items	Details
1	Name of system	
2	Agreement Number and date	
3	Work Order Number Date	
4	UID number (14 digit)	
5	Name of beneficiary (near by) with mobile number.	
6	District	
7	Block	
8	Village/Gram Panchayat	
9	Exact location of installation (land mark)	
10	Date of installation	
11	Warrantee expire on	
12	Name & Address of the Manufacturer/ Supplier of the system	
13	SPV Modules Installed Sr. No Make Model	
14	Battery (Li-Fe-Po4) Sr. No Make Model	
15	Training for operation & maintenance of the systems	Provided/Not Provided
16	Technical literature, operation & maintenance manual in English & Hindi	Provided/Not Provided

(Signature)  
 Authorized Signatory of  
 firm  
 (with seal)

(Signature)  
 Sr./Project Officer/Incharge -Project  
 UPNEDA  
 (With seal)

System unique identification code (UID) 14 digit provided by UPNEDA \_\_\_\_\_

(In case of complaint dial toll free number 1800 180 0005 for complaint lodging.)

यदि कोई शिकायत है तो मुफ्त नंबर 1800 180 0005 पर कॉल करें।

The Above System is being taken over by us in new and good condition and we will ensure the safety & security and also the weekly cleaning of solar panel of the system. हमें नया और अच्छी स्थिति में यह सिस्टम सौंपा जा रहा है और हम सुरक्षा और सिक्योरिटी का आश्वासन देते हैं। हम सौर पैनल की सप्ताह में एक बार सफाई करवाएंगे।

- 1- गलत/गलत
- 2- लाभ/लाभ के बिना
- 3- यथास्थिति/यथास्थिति
- 4- एज

