



**Chhattisgarh State Renewable Energy
Development Agency (CREDA)**
(Dept. of Energy, Govt. of Chhattisgarh)

Near Energy Education Park, Village Fundhar
VIP (Air Port Road) Raipur 492015 (C.G.)
Ph.: 91-8370009931

E-mail: contact.creda@gov.in, Website: creda.co.in

TENDER DOCUMENT No. 13240/CREDA/Solar Street Light/2019 Dated: 04-11-2019

**FOR SURVEY, DESIGN, SUPPLY, INSTALLATION & COMMISSIONING OF
SOLAR STREET LIGHT SYSTEMS WITH FIVE YEARS ON SITE WARRANTEE,
COMC & INSURANCE ANYWHERE IN THE STATE OF CHHATTISGARH**

Particulars	From Date & Time	To Date & Time	Place
Date of issue of notice inviting bid	04-11-2019 05:00 pm	----	----
Period of availability of bidding document at website	04-11-2019 05:00 pm	12-12-2019 05:00 pm	http://www.creda.co.in
Pre Bid Meeting & submission of queries in writing	13-11-2019 11:30 am	13-11-2019 01:00 pm	At H.O. CREDA, RE-III, Section.
Inspection of Materials by Tender Committee as per Valid Test Report and Submission of Summary of Test Report and M.A.F.	12-12-2019 10:00 am	12-12-2019 01:30 pm	At Ground Near H.O. CREDA, VIP Road, Raipur
Submission of Technical Bid & Sample	12-12-2019 10:00 am	12-12-2019 01:30 pm	At H.O. CREDA, RE-III, Section.
Submission of e-Price Bid	13-11-2019 05:00 pm	12-12-2019 01:30 pm	http://www.cspc.co.in
Opening of Technical Bid	12-12-2019 03:00 pm	12-12-2019 05:00 pm	At H.O. CREDA, RE-III, Section.
Declaration of Eligible Tenderer	12-12-2019 05:00 pm	----	At H.O. CREDA, RE-III, Section.
Opening of e- Price Bid	13-12-2019 11:00 am	13-12-2019 05:00 pm	At H.O. CREDA, RE-III, Section.

Tender Document Cost– Rs.5,000.00 + 18% GST = Rs.5,900.00
(in words Rupees Five Thousand Nine Hundred Only)

Document can also be downloaded from our website www.creda.co.in with the cost of tender as mentioned in NIT, which shall have to be deposited along with the tender document.

CHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY**CONTENTS**

Section	Description	Page No.
	Notice Inviting Tender	3
	Check List	4
	Details of EMD and Tender Document Fee	5
1	Instruction For Tenderer	7 to 12
	Eligibility Criteria	7 to 8
	Start-Up/New Entrepreneur/Bidding Process/Submission of Documents/ Specific Amendments	8
	GST&TIN/ Bid/Analysis of Rate/Validity etc.	9 to 12
2	General Condition of Contract	13 to 20
	Definitions/Proof of Manufacturer/Contract Document/Manner	13 to 14
	Variations, Additions & Omissions/Inspection/Completion work/ Eligible SI Default Liability	14 to 15
	Force Majeure/Rejection of works/Extension of time etc.	15 to 20
3	Scope of Work	21
4	Specifications For Solar Street Light Systems	22 to 27
	e-Price Bid	28 to 32
	Annexure – I – Standard for Solar Street Light	33
	Annexure – II – Draft Agreement	34 to 37
	Schedule - I Part-A	38
	Schedule - I Part-B	39
	Schedule - II Part-C	40
	Schedule - III - Technical Deviations	41
	Schedule - IV - Past Experience	42
	Annexure - III – Completion cum Performance Certificate	43
	Annexure - IV - All Drawings	44 to 47
	Annexure – V – Benchmark Cost for Solar Street Light System	48 to 49

NOTICE INVITING TENDER

CREDA invites sealed tenders for Survey, design, supply, installation, and commissioning of Solar Street Light Systems with five years onsite warrantee, COMC and Insurance for anywhere in the State of Chhattisgarh from registered System integrators with 3 years track record in off-grid SPV systems, as per following details -

Sr.No.	Item Description	Cost of Tender Document	EMD	Essentials
1.	Design, Supply, Installation and Commissioning of Solar Street Light Systems with 05 years onsite warrantee, COMC and insurance for anywhere in the State of Chhattisgarh.	Rs 5,000.00 +18% GST = Rs.5,900.00	Rs. 5,00,000.00	As per clause no. 1A to 1F of Eligibility Criteria (Page no.7-8)
TOTAL -		5,900.00	5,00,000.00	---

Important Events and time schedule for this tender are as follows -

Particulars	From Date & Time	To Date & Time	Place
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Price Bid shall be submitted online only at <http://www.cspc.co.in>, however Technical bid will have to be submitted in hard copy at Chief Engineer (RE - III) Section, Near Energy Education Park VIP Road, Raipur. Bidders are advised to follow the instructions provided for Registration and e-Submission Process accordingly. (For any query about e-bidding please visit user manual at <http://www.cspc.co.in>.)

Demonstration of Models and Standard Materials required as per this tender specification will be shown on 12-12-2019 at Ground near H.O. CREDA, VIP Road, Raipur (C.G).

Details of this tender are mentioned at Tender Documents which can be downloaded from our website www.creda.co.in. Any amendment/corrigendum will only be uploaded on CREDA's website. The tenderer should have to deposit tender document cost along with EMD as mentioned above through demand draft/NEFT/RTGS payable to CREDA Raipur while submitting tender.

Tenderers are requested to attend Pre-Bid meeting with their suggestions/objections/ reservations if any with details so as to avoid any confusion and to ensure clarity and transparency regarding the tender.

CREDA reserves all rights to accept/reject any or all tenders in full/part without assigning any reasons.

**Chief Engineer
RE-III, H.O. CREDA
Raipur (CG)**

CHECK LIST

To ensure that your tender submitted to CREDA is complete in all respects, please go through the following checklist & tick mark for the enclosures attached with your tender -

Sl. No.	Description	Complied	Page No. / Flag
1.	Earnest Money Deposit		
2.	Tender Document Fee (proof of submission)		
3.	The original document duly signed & with stamp on each page, as a confirmation of acceptance of Terms & Conditions (T&C).		
4.	Copy of Registration: Certificate as System Integrator of CREDA in SPV Programme valid for FY 2019-20.		
5.	Copy of Approved Test Reports/Acknowledgement of Solar Street Light System in the name of Bidder.		
6.	Original Net Worth Certificate and Turnover Certificate duly signed by Chartered Accountant		
7.	Completion cum Performance Certificate of Solar Street Light System installed by the Bidder in Govt Scheme of any state or Market Mode Scheme of CREDA.		
8.	Proof of being Eligible Manufacturer of Modules/ Battery/ Controller/ Luminary/Pole etc.		
9.	Copy of certificate for last three years turnover of works done regarding SPV Projects.		
10.	Declaration of conflict of interest - by bidder about any relatives working with CREDA.		
11.	Manufacture Authorization certificates of major components of Solar Street Light Systems.		
12.	Forwarding Letter & Undertaking by the Tenderer		
13.	PAN, GSTIN, Tax clearance certificate of the Tenderer		
14.	Undertaking on indigenusness of components		
15.	Self-certificate from Tenderer on not being a debarred from Government contract or a blacklisted company.		
16.	Undertaking for the test reports (for which acknowledgement has been submitted) submission within 90 days from the date of agreement.		

Details of EMD and Tender fee attached

Sl. No.	Description
1.	Earnest Money Deposit - Earnest Money Deposit of Rs. Five Lakhs, submitted in the form of Demand Draft/ Banker's Cheque/NEFT/RTGS from any scheduled bank drawn on _____ Bank _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.
2.	Tender Document Fee - Tender Document Fee of Rs. Five Thousand Nine Hundred, submitted in the form of Demand Draft / Banker's Cheque/NEFT/RTGS from any scheduled bank drawn on _____ Bank _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.

(Sign & Seal of the Manufacturer)**The Bank details for the above mentioned payment is as below:-**

Account Holder	CREDA
Bank & Branch Name	ICICI Bank, Panchpedi Naka, Raipur
Account Number	134601000400
IFSC Code	ICIC0001346

UNDERTAKING OF THE TENDERER

I/We have read carefully and examined the notice inviting tender, schedule, General Rules and terms and conditions of the contract, special conditions, Schedule of Rates and other documents and Rules referred to in the tender document for the supply.

I/We hereby tender my rates for the execution of the work for CREDA as specified within the time stipulated in the schedule in accordance with all aspects with the specifications, designs, drawings and instructions with such conditions so far as applicable.

I/We agree to keep the tender valid for **One Hundred Eighty (180) days** from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of **Rs..... Lacs** is hereby forwarded as **Earnest Money** in the form of crossed demand draft / RTGS / NEFT payable to CREDA at Raipur (C.G.). If I/We fail to commence or complete the sanction ordered in specified time or fail to fulfil the any condition of tender document, I/We agree that the CREDA shall, without prejudice to any other right or remedy, be at liberty to forfeit the said Earnest Money absolutely. The said Earnest Money shall be retained by CREDA towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.

I/We hereby declare that I/We shall treat the tender documents, specifications and other records connected with the work as secret/confidential and shall not communicate information derived there from to any person other than a person to whom I/We have authorized to communicate the same or use the information in any manner prejudicial to the safety of CREDA/Government.

I/We shall abide to all the laws and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.

Our GST Registration No. The PAN No. under the Income Tax Act is

I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize CREDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

Dated:

Signature

Place:

Name of tenderer with seal

Witness :

Signature:

Name:

Postal Address:

.....

SECTION - 1

INSTRUCTIONS FOR TENDERERS

1. ELIGIBILITY CRITERIA :

A. TEST REPORTS:

Tenderer must have valid test report of the integrated systems in their names. They will have to provide copy of such test report of the integrated systems from Solar Energy Test Centre or any other test centre approved by Ministry of New & Renewable Energy (MNRE)/ NABL. Tenderer must also have to submit test reports of all the major components such as SPV Module, Luminary, Battery, and Controller. Therefore tenderer shall have to submit two types of the test reports one for integrated system(Solar Street Light) and other for independent test report of each major components used (module, battery, Charge controller, outdoor luminary, pole winch and wire rope).

Bidders may submit Acknowledgement of submission of materials along with make, capacity & numbers of Solar Module, Luminary, Battery and Controller, **fee receipt from MNRE/NABL approved test centres for testing (in case they don't have approved test certificates of system at the time of bid)**. Bidders shall be required to submit the approved test certificates before raising claim for payment else payment shall not be made to them.

Financial bid of those Tenderers will not be opened who have not submitted valid test report/ Acknowledgement.

Bidders shall have to submit the Test certificate against Acknowledgement within 90 days of execution of agreement otherwise EMD may be forfeited and bidder may be blacklisted / debarred by CREDA. However this time limit may be further extended / reduced by CREDA if required.

Bidder should have test certificate/Acknowledgement for system valid at the time of opening of the bid.

B. MINIMUM EXPERIENCE:

Bidders must have minimum experience in last three financial years i.e. 2016-17, 2017-18 & 2018-19 as per the details mentioned below-

S.No.	Description	For bidders of Chhattisgarh State	For bidders of Other States	For Start-ups & New Entrepreneurs
1	For all the categories in the bid document as mentioned in Specifications	20 numbers of Solar Stand Alone Street Light or 10 numbers of Solar High Mast System	40 number of Solar Stand Alone Street Light or 20 nos of Solar High Mast System	02 number of Solar Street Light

C. Experience Certificates submitted should be in attached format (as per annexure-II) **or Other Format containing similar information as in attached format (annexure-II) shall be considered only in-case of submitted in Hindi / English Language only.** Work order, L.O.I. / L.O.A etc., will not be acceptable.

D. Tenderers must have a Positive Net worth of **Rs.25 Lacs as on 31st March 2018 (which is defined as "Net value of the Assets minus (-) Net value of liabilities")**. They shall have to submit an **Original Certificate** duly signed by a qualified and registered Chartered Accountant having UDI number as a proof. Produced certificate must tally with the audited balance sheet.

E. Tenderers should have an aggregate turnover of minimum **2 crores** in last three years i.e. 2015-16, 2016-17 & 2017-18 in SPV Projects. Certified copies of the annual returns and audited balance sheet submitted to the Registrar of Companies/ Income Tax Authorities should be enclosed. For the preceding years an **Original Summarised Sheet** of turnover certified by registered CA must be enclosed.

F. Tenderer who are debarred from business by Govt. /Govt. Agency in any state would

not be eligible to participate in this bid. A self-declaration should be submitted by the bidder to this effect, failing which bid shall be rejected.

2. START-UP AND NEW ENTREPRENEUR -

- A. **START-UP-** CREDA may consider Start-up Company registered only in area of Solar PV modules/ PV System integrator, if it produces certificate of being a Start-up entities as issued by Government of India.
- B. **NEW ENTREPRENEUR-** (New Entrepreneur means System Integrator who doesn't fulfil the eligibility criteria as per clause 1D to 1E). CREDA shall consider Companies/Proprietorship firm/Partnership firm which are registered in CREDA as NEW ENTREPRENEUR.
- C. EMD of **Rs.1 Lac** in form of D.D.
- D. Start-up & New Entrepreneur tenderer must have valid test report or acknowledgement of the system in their names. They will have to provide copy of such Test reports or Acknowledgement of the system from Solar Energy Test Centre or any other test centre approved by Ministry of New and Renewable Energy (MNRE) or NABL.
- E. Start-up & New Entrepreneur are not allowed to Quote Prices.
- F. Maximum **10 %** of the total work may be reserved for start-up and new entrepreneur.
- G. Non-meeting of Financial eligibility as mentioned under "eligibility criteria" head shall not be the reason for rejection of bid. Start-up & New Entrepreneur must meet other bid criteria including technical criteria. They also have to accept Price offer by CREDA as discovered in this bid.

3. BIDDING PROCESS -

For ease of accessing the e-bidding website and registration the following is to be done by bidder -

- A. Visit <http://www.cspc.co.in>
- B. Click on e-bidding button on right hand side of the page.
- C. The user will be directed to e-bidding page where all information regarding registration is available along with helpline details.
- D. Price Bid shall be submitted online only at <http://www.cspc.co.in> however technical bid will have to be submitted in hard copy. Bid Documents (including Technical Bid and samples) must reach at Chief Engineer (RE-III) Section, Near Energy Education Park VIP Road, Raipur latest by **01.30 PM on 12.12.2019**. Tenders submitted after scheduled time and date shall not be considered.

4. SUBMISSION OF DOCUMENTS -

Documents should be submitted in prescribed manner in separate envelopes as follows-

- A. Main Envelope: Main Envelope must enclose all A, B, C & D envelopes. Bidder Name, Address and status of firms should be clearly written on main envelope. Start-up or New Entrepreneur must mention title as "Start-up" or "New Entrepreneur" as applicable on main envelope.
- B. Envelope-(A): Tender Fees and EMD.
- C. Envelope-(B): Financial Eligibility Documents: Net worth & Turnover certificate as per clause 1C & 1D.
- D. Envelope-(C): Technical Eligibility Documents: Experience certificates, Test Reports & Summary of Test Reports or Acknowledgement and Manufacturer Authorization Form as per clause 1A, 1B & 1E.
- E. Envelope-(D): Complete tender document in original duly seal & signed by authorized signatory on each & every page of the tender document.

Bid Document which doesn't follow the above format shall be disqualified.

5. SPECIFICATION AMENDMENTS -

The Specifications of Solar Street Light Systems should be as per prevailing CREDA norms, as specified in the tender. If any amendments are issued by CREDA in due course of time, in this context, then those shall be applicable under this tender.

6. GST & PAN -

Bidder shall have to submit copies of GST registration number and PAN numbers issued by the appropriate authority.

7. THE BID -

Technical Bid must be deposited in the tender box only kept in the Chief Engineer RE-III Section, CREDA, H.O., Raipur **from 10:00 am to 01:30 PM dated 12-12-2019**. Nobody is authorized to receive or grant receipt for tender delivered on behalf of CREDA. Tender received through any other means shall not be considered.

8. ANALYSIS OF RATE -

A. Bidder should quote their rates considering variation of site conditions and all other factors in price of different components and keeping the quantum and quality of work in mind.

B. If the successful bid is unbalanced in relation to the benchmark cost of MNRE as stated in Annexure-V by less than 10%, the successful bidder shall have to provide Additional Performance Security (APS) to the extent of difference of 90% of benchmark cost and rates quoted by the successful bidder for total allocable quantity in such categories in which he has submitted unbalanced bid, in the form of Demand Draft/RTGS issued by approved scheduled bank in favour of CREDA, before signing the agreement. The same shall be released along with the normal SD after 05 years of agreement. Those bidders who accept the L1 rates also required to submit Additional Performance Security for allocated work.

In case the bidder refuse to deposit Additional Performance Security (APS) then his bid will be rejected by the sanctioning authority and earnest money shall be forfeited and shall be blacklisted /debarred to participate in any tender/ activity of CREDA till further orders. In such case CREDA shall have discretionary rights to decide reasonable rates in comparison to benchmark costs which may be rates quoted by L2 if found reasonable.

If the bidder fails to complete the work or left the work incomplete, this Additional Performance Security (APS), S.D. and EMD shall be forfeited by the CREDA and the agreement shall be terminated and bidder shall be blacklisted /debarred to participate in any tender/ activity of CREDA till further orders.

The Benchmark Cost of MNRE attached as per Annexure – IV is inclusive of GST in which GST is included @5% for Supply of materials (70% of total cost) and @18% for installation and commissioning of systems (30% of total cost). However the rates quoted in this tender will be compared without GST.

9. REGISTRATION OF BIDDER -

Bidders who are not registered with CREDA, upon allocation of work shall register himself as system integrator of CREDA within 30 days of such allocation failing which work allocation shall stand cancelled without any further notice in this regard and allocation work shall be re-allocated to other parties as per tender condition.

10. VALIDITY -

Full descriptive particulars and complete specifications should accompany the offer. Offers should be kept open for acceptance for at least **180 days** from the date of opening. After finalization of this tender the approved rates shall be valid till one year from the date of award; however CREDA shall have liberty to increase or decrease this validity if needed.

11. TERMS & CONDITIONS -

A. The terms, conditions and specifications mentioned in tender document shall be binding on the tenderers and no condition or stipulation contrary to the conditions shall be acceptable. It may please be noted that the tenderers who do not accept terms and conditions stipulated in this tender documents, their offers shall be liable to be rejected out-rightly without assigning any reason whatsoever.

B. Each page of tender document & enclosures shall be signed by the tenderer and seal affixed. All the pages of the documents issued must be submitted along with the technical offer. In case of any corrections / alterations in the tender, the tenderer should attest the same; otherwise tenders may not be considered.

- C. Tenderers are also instructed to submit their tenders in properly arranged manner (with index, proper paging and with flags on important documents). Incomplete, lose, conditional or improper arranged tenders will not be accepted.

12. CREDA RESERVES THE RIGHT -

- (i) To reject or accept any or all tenders wholly or partly without assigning any reason on the grounds considered advantageous to CREDA, whether it is the lowest tender or not.
- (ii) To split the quantities against the tender further for the same items/work. No reason will be assigned by CREDA for this and will be binding on the tenderers.
- (iii) Due to large quantum of work & limitation of the time period for completion of the work CREDA may take consent from other tenderers if they agree to work on rates standardized by CREDA.
- (iv) CREDA may undergo agreement with those eligible tenderers who give consent to work on rates standardized by CREDA and may allocate work to them. Rates approved through this tender may be standardized for all eligible tenders to work in **year 2019-20** and shall be valid for one year from the date of agreement. However CREDA reserves right to curtail or extend this period.

13. COMMUNICATIONS -

- i. All the communication between Bidder and CREDA shall be in writing. Notice sent by Fax or other Electronic means shall be effective on confirmation of the transmission. Notice sent by registered post or speed post shall be effective of delivery or at expiry of normal delivery period as under taken by Postal Service.
- ii. Offers through Telegraph/Fax/Emails/Post/Courier or open offers etc. received shall be summarily rejected.

14. TENDER DOCUMENT FEE AND EARNEST MONEY DEPOSIT -

- i. Each tenderer should submit Tender Document Fee and earnest money in the form of Demand Draft/Pay Order or RTGS/NEFT as mentioned in the NIT vide no. **13240/CREDA/ SOLAR STREET LIGHT/2019** Date: **04.11.2019**, in a separate envelope as prescribed at **point no.4 of page 8**, else they will summarily be rejected and returned. Tender Document Fee & EMD submitted in any other form e.g. **Cash/Bank Guarantee/FDR /TDR etc. shall not be accepted.**
- ii. MSME unit registered as manufacturer of solar products in Chhattisgarh state and public sectors of government are exempted from EMD subjected to submission of valid document.

15. SUBMISSION / DISPLAY OF SAMPLES FOR -

Tenderers will have to provide samples of their Module, Luminary, Battery, Pole, Controller & Chemical Earthing Kit, B.O.S. etc. should be submitted for examination before **01:30 PM dated 12-12-2019** at Ground near H.O. CREDA, VIP Airport Road, Raipur. These samples shall be examined by Technical Committee of CREDA.

16. PRE-BID MEETING -

- i. A pre-bid meeting shall be organized on **13-11-2019 at 11:30 AM** at CREDA H.O. Raipur to explain the terms & conditions of the tender and to clarify doubts of the tenderers so that all doubts and confusions are resolved before the tender is submitted. Only one authorized representative of the parties who fulfils the primary eligibility conditions as mentioned in NIT and desire to purchase/download the tender document shall be allowed to participate in the said meeting. Amendments/clarifications, if any arising during pre-bid meet, shall be uploaded on **www.creda.co.in**. It is advisable for all tenderers to attend this Pre Bid Meeting.
- ii. All suggestions, doubts, confusion, request, queries etc., shall have to be presented to CREDA in writing on or before **13-11-2019 till 5:00 PM**. After that any representation in this regard shall not be considered.

- iii. The purpose of pre-bid meeting will be clarifying issues and to answer questions in any matter that can be raised at that stage. Minutes of the meeting and the responses given will be uploaded for information of bidders. Any modification of the bidding document which may become necessary as a result of pre-bid meeting shall be part of original tender document and communicated through corrigendum.

17. TECHNICAL CRITERIA -

- i. Tenderer must have valid test report of the integrated systems in their names. They will have to provide copy of such test report of the integrated systems from Solar Energy Test Centre or any other test centre approved by Ministry of New & Renewable Energy (MNRE)/ NABL. Tenderer must also have to submit test reports of all the major components such as SPV Module, Luminary, Battery, and Controller. Therefore tenderer shall have to submit two types of the test reports one for integrated system(Solar Street Light) and other for independent test report of each major components used (module, battery, Charge controller, outdoor luminary, pole winch and wire rope).

Bidders may submit Acknowledgement of submission of materials along with make, capacity & numbers of Solar Module, Luminary, Battery and Controller, **fee receipt from MNRE/NABL approved test centres for testing (in case they don't have approved test certificates of system at the time of bid)**. Bidders shall be required to submit the approved test certificates before raising claim for payment else payment shall not be made to them.

Financial bid of those Tenderers will not be opened who have not submitted valid test report/ Acknowledgement.

Bidders shall have to submit the Test certificate against Acknowledgement within 90 days of execution of agreement otherwise EMD may be forfeited and bidder may be blacklisted / debarred by CREDA. However this time limit may be further extended / reduced by CREDA if required.

Bidder should have test certificate/Acknowledgement for system valid at the time of opening of the bid.

- ii. The Bidder should have sufficient technically qualified and well-experienced manpower for execution of the project and after sales service of the systems. These details may be called by CREDA and in case there is any deficiency found the Bidder may be debarred.

18. FORFEITURE OF EARNEST MONEY DEPOSIT -

It should be clearly understood that in the event of tenderer failing to enter into the agreement in the prescribed format on their quoted rates and also fails to execute assigned works under any Scheme of CREDA, within stipulated time, if he is so communicated within the validity period of the offer, the full amount of earnest money will be forfeited and tenderer shall be debarred from future business with CREDA. CREDA's decision in this regard will be final and binding on the tenderers.

19. PRICE OF SUPPLY OF SOLAR STREET LIGHT SYSTEMS WITH INSTALLATION, COMMISSIONING AND TESTING OF SOLAR STREET LIGHT -

- I. The Price quoted for Solar Street Light System with installation, commissioning and testing, Civil works and all other required BOS etc. with 5 years system warranty, insurance and COMC. The prices shall be filled exactly as per **e-Price Bid enclosed**.
- II. GST will be paid extra as per prevailing rate during the time of billing. Any change in GST shall be become applicable during the period of contract.
- III. In this regard if there is any change in the composition ratio of goods and services by any Authority/Courts, same shall be applicable.

20. ENGINEERING DOCUMENT -

Tenderers will have to submit Engineering Documents with technical details, drawings, Specifications of components and make etc. to CREDA for approval, as and when asked by

CREDA. Works may only be started out only after approval of the Engineering Document and their samples.

21. SAMPLES -

Samples of the components shall have to be submitted to the CREDA in prescribed manner on scheduled date.

22. COMC OF SOLAR STREET LIGHT SYSTEM -

The Comprehensive Operation & Maintenance work may be entrusted to the concerned bidders on the approved lowest rate of the bid. During COMC the bidders should have spares of every component ready in their service centre or CREDA District Office so that no system should be kept non-functional for more than 07 days. Awarding the work of COM to bidders is totally at the discretion of CREDA. Also if the bidder is awarded with COM work, then they must have to submit quarterly monitoring report of the system working satisfactorily duly authenticated by SE of concerned Zonal Office of CREDA.

23. INSPECTIONS -

CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

24. TAX OBLIGATIONS -

CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

25. JURISDICTION OF THE COURT -

Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble Court of Chhattisgarh.

SECTION - 2

GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS -

In writing General Conditions of Contract, the specifications and bill of quantity, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or content inconsistent with the subject.

- CREDA shall mean the Chhattisgarh State Renewable Energy Development Agency represented through the Chief Engineer.
- Work shall mean any work entrusted to the tenderer as mentioned in the scope of work and sanction order.
- The "Engineer in charge" shall mean the Engineer or Engineers authorized by CREDA for the purpose of this contract. Inspecting Authority shall mean any Engineering person or personnel authorized by CREDA to supervise and inspect the erection of the Solar Street Light System.
- "The Eligible SI/Tenderer" shall mean the tenderer awarded with the contract or their successors and permitted assigns. Contract Price shall mean the sum named in or calculated in accordance with the provisions of the contract as the contract price. General Conditions shall mean the General conditions of Contract.
- "Specifications" shall mean the specifications annexed to these General Conditions of contract and shall include the schedules and drawings attached thereto or issued to the eligible SI from time to time, as well as all samples and pattern, if any,
- "Month" shall mean calendar month. "Writing" shall include any manuscript, typewritten, printed or other statement reproduced in any visible form whether under seal or written by hand.

2. PROOF OF MANUFACTURER -

Those bidders who are also manufacturers of an important component of Solar Street Light System such as SPV Modules, Luminary, Battery, Controller or Pole shall have to submit proof of their factory, SSI Registration and list of Machineries and Equipment's.

3. CONTRACT DOCUMENT -

The term "Contract" shall mean and include the General conditions, specifications, schedules, drawings and sanction orders etc., issued against the contract schedule of price or their final general conditions, any special conditions applying to the particular contract specification and drawings and agreement to be entered into. Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian contract Act or any other Act in vogue or by any person of common knowledge and prudence.

4. MANNER OF EXECUTION -

- A. Execution of work shall be carried out in an approved manner as outlined in the technical specifications or where not outlined, in accordance with desired Specifications laid down by CREDA, to the reasonable satisfaction of the Engineer.
- B. Successful Tenderer / Bidder here-in-after called the **SI** (System Integrator).
 - i) The eligible SI shall conduct a detailed survey of site. All necessary documents and survey details shall have to be submitted in concerned District Office of CREDA in prescribed manner.
 - ii) Engineer-in-Charge of District Office of CREDA shall examine this survey report. Engineer-in-charge may visit the site if he/she is not satisfied with survey report.
 - iii) After satisfaction Engineer-in-charge will forward the report to Executive Engineer of concerned Regional office of CREDA for approval.
 - iv) Executive Engineer of concerned Regional office of CREDA shall forward this to

concerned Chief Engineer of Head Office of CREDA.

- v) The SI shall start work within **15 days** after the date of sanction of work.
- vi) All the materials required for the installation of Solar Street Light System as per Work Order issued shall be kept at site in the custody of the SI. CREDA shall not be responsible for any loss or damage of any material during the installation.
- vii) All the electrical works should be done as per various provisions of Indian Electricity Act. The persons engaged for carrying out electrical works should have a valid **B-class** license or above issued by licensing board of Chhattisgarh.
- viii) After installation joint inspection will be done in presence of beneficiary, SI and CREDA and after successful commissioning of Solar Street Light System and its approval from CREDA a JCC will be signed and the claim will be forwarded for payments as per guidelines and procedures of CREDA.
- ix) Work order/LOI will be given to the chosen System Integrator only after execution of the agreement with CREDA.

5. **VARIATIONS, ADDITIONS & OMISSIONS -**

CREDA shall have the right to alter, amend, omit, split or otherwise vary the quantum of work, by notice in writing to the SI. The eligible SI shall carry out such variation in accordance with the rates specified in the contract so far as they may apply and where such rates are not available; those will be mutually agreed between CREDA and the eligible SI.

6. **INSPECTION -**

- A. The Engineer-in-Charge or his authorized representative(s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.
- B. Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory / godown at the cost of the eligible SI, if desired by CREDA.
- C. CREDA will undertake real time performance and quality test of randomly selected Solar Street Light System and components during the course of execution as per specifications and guidelines to ensure quality and performance of system and components.

7. **COMPLETION OF WORK -**

Time being the essence of contract, the installation of the Solar Street Light System shall be completed within the time schedule prescribed in the Work order.

8. **ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -**

CREDA may by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder -

- (a) If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the work order or within the period for which extension has been granted by CREDA to the eligible SI.
- (b) If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the Solar Street Light Systems and or for penalty as defined under this tender document until such reasonable time as may be required for the final completion of the work.

(d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this tender document until the work is completed.

9. **FORCE MAJEURE -**

The eligible SI shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Street Light Systems by the related vendors, to whom the tenderer has placed order, shall also not be treated as force majeure.

10. **REJECTION OF WORKS -**

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workmanship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. **CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Tender/ Activity of CREDA till further orders.** The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/ supplies with enforcement of penalty **as stated above.**
- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/ damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

11. **EXTENSION OF THE TIME -**

If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the system as may be reasonable but without prejudice to other terms and conditions of the contract.

12. **MAKES OF EQUIPMENTS TO BE USED IN THE WORK -**

- (I) The Solar Modules, Luminary, Battery, Controller & Other BOS shall be made in India.
- (II) The eligible SI has to ensure that equipment's as per Technical Requirements of guidelines of CREDA as complied with. The eligible SI has also to ensure that he will use only components of approved vendors of CREDA. The material/works for which CREDA/MNRE or BSI or ISI specification is not available, engineer-in-charge of the works will examine and approve the material/works, preferably of all makes on which CREDA has report of satisfactory performance. Test certificates for all major equipment's should be submitted to the engineer-in-charge of the works before installation of the same.
- (III) Successful SI upon issue of LOI must submit Manufacture Authorization Form (MAF) From manufacture of Solar Module/Luminary/Battery/Controller/Pole which it is intending to use during installation guarantee at least five year warrantee of Luminary, Battery and controller and at least 10 year warrantee on module, before installation of system. **No payment shall be made if he fails to do so.**

- (IV) SI Should submit warrantee Agreement of **at least 5 year** for major components i.e. SPV Modules, Luminary, Battery, Controller and Pole with manufacturer or distributors certified by the manufacturer before installation of systems.

13. WARRANTEE PERIOD AND POST INSTALLATION SERVICES -

- A. The work done/material supplied by the eligible SI should be warranted for satisfactory operation and against any defect in material and workmanship including Luminary, Battery, Controller and other balance of equipment's, at least for a period of **5 (five) years**, from the date of commissioning of the Solar Street Light Systems including other works as per scope of work.
- B. Warrantee on SPV Modules shall be for **10 (ten) years** from the date of commissioning of the Solar Street Light Systems must be warranted for their output peak watt capacity, which should not be less than **90%** at the end of **10 years** and not less than **80%** at the end of **25 years**.
- C. The above warrantee certificates shall be furnished to the CREDA for approval. Any defect noticed during this period should be rectified by the supplier free of cost upon written notice from CREDA provided such defects may be due to bad workmanship or bad materials used.
- D. The warrantee period shall be extended by the period during which the system remains non-operative due to reasons within control of the eligible SIs.
- E. This warrantee must be an unconditional onsite warrantee and the eligible SI will have to replace the defective material within **7 days** positively from the date of information given to him.
- F. Care should necessarily be taken to make the Solar Street Light Systems operational, once the reporting of the fault/non-operational status is done, within a week. If the Solar Street Light System is not made operational within **7 days** CREDA may rectify the same at the cost of SI and the warrantee period shall be extended for a month for the same.
- G. System Integrators shall have to establish their service stations in the allocated area and shall have to keep sufficient quantity of spares and man power to ensure proper service network for taking care of smooth functioning of Solar Street Light Systems installed by them. SI shall have to give a toll free number to register complaints.

14. TERMS OF PAYMENT -

The following terms of payment shall apply for the tender -

- A. **95%** of the cost of the Solar Street Light System as per the work order after satisfactory supply, installation, commissioning & performance test of the system at site with proper handing over. Payment will be done after receipt of Beneficiary contribution to CREDA.
- B. Balance **5%** of the cost shall be retained by CREDA as Performance Security for a period of **60 months**.
- C. GST shall be paid extra as applicable on the date of billing. Any change in GST shall also be applicable during the period of contract.

15. PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

If the eligible SI fails to complete the assigned work within the schedule time specified in the work order or any extension granted there to, CREDA will recover from the SI as penalty a sum of **One per cent (1%)** of the system price excluding GST/Tax for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed **5% (Five Per cent)** of the cost.

Review of the progress of installation of Street Light allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled Street Light System or their part of can be re-allocated to other SI as per discretion of CREDA.

16. SECURITY DEPOSIT (SD) -

- A. The Earnest Money shall be retained by CREDA upto the duration of validity of tender, after agreement is done to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.
- B. Beside this 5% of the cost shall also be retained as SD during the five years of warrantee period. No interest shall be payable on the SD.

17. INSURANCE -

- A. The eligible SI shall arrange insurance coverage for the materials and Solar Street Light System at his/ beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The eligible SI shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/Central laws. CREDA shall not bear any responsibility on this account.
- B. Eligible SI shall arrange for insurance coverage for complete Solar Street Light System during COMC period i.e. for **05 year** from the date of installation. Insurance should cover for damage and theft. In case of such incidence, SI must replace the lost/damaged part within **7 days** from the date of intimation.

18. PENALTY DUE FROM THE ELIGIBLE SI -

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit of any project under CREDA.

19. ELIGIBLE SI'S RESPONSIBILITY -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Solar Street Light System by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any case the eligible SI does not complete the work as per the sanction orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

20. RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/system/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

21. RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS -

- A. **The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work order.**
- B. The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.
- C. All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.
- D. CREDA shall have rights to deduct such claims of payments from SI in case of complaints of such violations.

22. NON-ASSIGNMENTS -

The eligible bidder shall not assign or transfer the work orders issued as per this contract or any part thereof without the prior approval of CREDA.

If eligible bidder transfer/assigned/sublet full or any part of work allocated to him without prior permission from CREDA in writing to any third party shall be liable to debar/black listed from any Tender/Activity of CREDA till further orders.

23. SUBLETS -

- A. The eligible bidder may sublet / sub contract part of the work with approval of CREDA in writing up to 25% of the allocated work. It is expressly agreed that original bidder shall be responsible and liable for all his obligations under this agreement not withstanding anything contained in the agreements with his sub contractor and no default under any such agreement shall exempt the original bidder from his obligation or all liabilities here under.
- B. After approval of the proposal of the sub contract CREDA shall issue a permission letter for the same.
- C. The original bidder shall not be allowed to sub contract the work assigned to him to more than one sub contractor. In special condition CREDA may permit more than one sub contractor.
- D. The original bidder should satisfy himself before recommending CREDA whether the sub contractor so proposed is fit for the work, process, experience, qualifications, man power and component necessary for the job proposed be entrusted to him.
- E. Whatever warranty mentioned in the Tender document shall be honoured by the original bidder. Original Bidder shall be held responsible for any defect / non functionality of any work / system or any components.
- F. CREDA will not ask to sub contractor for any rectification / replacement of work / system or any component. All liabilities regarding warranty shall be on part of original bidder.
- G. The original bidder shall be responsible of submission of JCCs to concerned district officers of CREDA with his and sub contractor signatures and seal on every document comprising JCCs. The seal of sub contractor should clearly the name of sub contractor with phrase "on behalf of original bidder". All liabilities like warranty, insurance, specification, compliance of bid conditions and government rules and regulations etc., shall be on the part of original bidder.
- H. Sub contractor will have to be registered as SI in CREDA immediate after approval.
- I. CREDA will pay to the original bidder after successful commissioning of the system.
- J. The original bidder shall have to pay within 15 days of receipt of payment from CREDA. CREDA may pay directly to the sub contractor on-behalf of original contractor after receipt of written consent / recommendation for payment from original bidder.
- K. If original bidder fails to pay any amount to sub contractor within 45 days then on receipt of information from sub contractor CREDA shall have right to deduct the same from bill or any due amount of original bidders and pay the same to sub contractor.
- L. The allocated work to sub contractor shall be part of the experience of sub contractor.
Details of the Subletting are mentioned in manual on policy and procedure for sub contract in CREDA, already uploaded in website of CREDA.

24. CERTIFICATES NOT TO AFFECT RIGHTS OF CREDA -

The issuance of any certificate by CREDA or any extension of time granted by CREDA shall not prejudice the rights of CREDA in terms of the contract nor shall they relieve the eligible SI of his obligations for due performance of the contract.

25. SETTLEMENT OF DISPUTES THROUGH ARBITRATION -

- A. Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Chief Executive Officer (CEO), CREDA provided a written appeal by the eligible SI is made to CREDA. The decision of the CEO, CREDA shall be final and binding to the all concerns.

B. Any dispute or difference including those considered as such by only of the parties arising out of or in connection with the contract shall be to the extent possible be settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.

26. **LAWS GOVERNING CONTRACT -**

The contract shall be constituted according to and subject to the Laws of India and jurisdiction of the Court of Bilaspur, Chhattisgarh.

27. **LANGUAGE AND MEASURES -**

All documents pertaining to the Contract including specifications, schedules, notice correspondences, operating and maintenance instructions, drawings or any other writings shall be written in English / Hindi language. The metric system of measurement shall be used in this contract.

28. **CORRESPONDENCE -**

A. Any notice to the eligible SI under the terms of the contract shall be served by registered mail to the registered office of the eligible SI or by hand to the authorized local representative of the eligible SI and copy by post to the eligible SI's principal place of business.

B. Any notice to CREDA shall be served to the Chief Engineer, CREDA Raipur in the same manner.

29. **SECRECY -**

The eligible SI shall treat the details of the specifications and other documents as private and confidential and they shall not be reproduced without written authorization from CREDA.

30. **AGREEMENT -**

The successful eligible SI shall have to enter into an agreement with the CREDA in the approved contract agreement form within **10 days** of the receipt of call from CREDA.

31. **DECLARATION OF CONFLICT OF INTEREST -** The contractor hereby declares that nobody connected with or in the employment of **CREDA** is not/shall not ever be admitted as partner in the contract.

32. **TENDER EVALUATION CRITERIA -**

A. Offers of only those parties, who are found qualified based on Eligibility Criteria and Techno-commercial Bid, will be taken into further consideration and financial bid of only those parties who are qualifying the criteria of Techno-commercial Bid will be opened.

B. Other things being equal, the lowest rates shall normally be preferred, but CREDA shall have rights and liberty to amend/lower the rates.

C. **Conditional tenders shall not be accepted.**

D. However CREDA shall have rights and liberty to call any /other parties to work on approved rates as and when requires in accordance with quantum of work and scheduled time limits for completion of targets.

33. **EVALUTION OF PRICE BID -**

Price bid shall be evaluated on the basis of Quoted rates. Lowest rate of Solar Street Light System shall be considered, however CREDA shall have discretionary power to amend/lower the rates.

34. ALLOCATION OF TARGETS AND AREA OF WORK –

- i.** L-1 Bidder will be given preference for allocation of work.
- ii.** Subsequently all other eligible bidders will be awarded with equal number of work; quantity may change according to number of sanctioned works. Further allocations shall be made on the basis of their performance (both past as well as present performance) subsequently. However CREDA has sole discretion to award any number of works to any eligible bidder.
- iii.** CREDA reserve rights to increase or decrease quantities to be allocated to the eligible bidders on the basis of the availability of stock with the bidder and time limits for the projects.
- iv.** CREDA has full discretion to allot the work to any eligible bidder anywhere in the State of Chhattisgarh.
- v.** Maximum 10% of the total target shall be distributed among start-up and New Entrepreneur.
- vi.** **Review of the progress of installation of Solar Street Light System allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled Street Light or their part of can be re-allocated to other SI as per discretion of CREDA.**

35. BID REJECTION -

If financial bid of a bidder has been opened on the basis of technical bid of a bidder which has been determined to be substantially responsive to the bidding document and in latter stage it is found that bidder does not meet the eligibility criteria or the technical bid is found substantially non-responsive, CREDA reserves rights to reject such bid of a bidder any time.

We (on behalf of Eligible SI/Tenderer) have read all the above stated details & accept to comply with it in total

(Name, Signature & Seal of the SI)

SECTION - 3

SCOPE OF WORK FOR SOLAR STREET LIGHT

The scope in brief will be as follows-

1. Survey of Sites, designing, supply, installation & commissioning of Solar Street Light Systems including necessary civil work for construction of RCC Foundation and Pedestal as per design and specifications approved by CREDA, on turnkey basis. Bidder shall have to take approval of the engineering documents, Bill of Materials and samples from CREDA prior to commencement of the work. Five years unconditional onsite warrantee for manufacturing defects shall be required for each of the system after successful commissioning and proper handing over.
2. The scope of work shall also includes the followings:
 - Survey of Sites, Submission of site clearance certificate where the Solar Street Light Systems are to be installed. A layout plan of the site should also be submitted clearly indicating the identified location for installation of SPV Modules, Structures and other components shall be installed. Work order shall be issued only after receipt of satisfactory reports suitable for system installation. SI shall furnish all necessary information to beneficiary for Solar Street Light System Warrantee, Do & Don'ts etc. so as to avoid further misunderstandings and disputes.
 - Detailed planning of time bound smooth execution of project.
 - Design, supply, installation & commissioning of Solar Street Light System of required capacities as per design and specifications approved by CREDA, on turnkey basis.
 - Providing User Manuals and Warrantee Cards to beneficiary / CREDA.
 - SI shall have to submit JCCs within 15 days of Installation and Commissioning of Solar Street Light System in District Office of CREDA.
 - Unconditional onsite warrantee for manufacturing defects for Five years faultless operation, assure inventory for maintenance.
 - Providing Prompt Service Facilities to customers/ beneficiaries.
 - Risk liability of all personnel associated with implementation and realization of the project.
 - Training of at least two persons nominated by user, on the various aspects of design and maintenance of the offered system after commissioning of the system.
 - The eligible SI shall maintain sufficient inventory of the spares to ensure that the system can be made functional within 7 days from the communication of breakdown of the system during currency of the warrantee period. If in case, the concerned SI fails to rectify the defects or replace the non-functional component of the system, CREDA reserves the rights to make the system functional through any other eligible SI and the cost of the same will be borne from the SD/Performance Security deposited in CREDA of the concerned SI.
The contractor shall run the system on trial basis and shall closely monitor the performance of the system before handing over the system, so that the assured annual power generation can be estimated for monitoring of the performance of the system. CREDA shall examine the data of generation and ascertain if the generation is adequate with reference to the capacity of the SPV Systems.
 - Performance Guarantee Test: Successful performance guarantee test to demonstrate the rated capacity of Solar Street Light System as per CREDA's norms shall have to be conducted by SI in presence of representatives of CREDA, if required.

SECTION – 4

SPECIFICATION FOR SOLAR STREET LIGHT SYSTEMS

WHITE-LED (W-LED) BASED SOLAR STREET LIGHT SYSTEMS

A standalone solar photovoltaic street lighting system (SLS) is an outdoor lighting unit used for illuminating a street or an open area. The Solar Street Light System consists of solar photovoltaic (SPV) module, a luminary, storage battery, control electronics, inter-connecting wires/cables, module mounting pole including hardware and battery box. The luminary is based on White Light Emitting Diode (W-LED), a solid state device which emits light when electric current passes through it. The luminary is mounted on the pole at a suitable angle to maximize illumination on the ground. Electricity generated by the PV module charges the battery during the day time which powers the luminary from dusk to dawn. The system lights at dusk and switches off at dawn automatically.

DETAILED SPECIFICATIONS

1. Type – I: Specifications.

a. For 360Wp/6M High Solar Street Light System:-

Luminary: The luminary shall deliver a system lumen > 6000 lm by consuming wattage <44W. The luminary shall be with 5000K and CRI > 70. The luminary shall have a rated life of 50,000 burning hours @ L70. The luminary shall be street light made of pressure die-cast aluminium body. The bottom cover shall be polycarbonate with IP 65 and IK 08 rating. The LED shall be SMD type.

Battery: The battery used in the system shall be LiFePO₄. The battery capacity shall be 100Ah with Life cycles of 2500 cycles @ 90% DOD. The battery shall be integrated inside the square aluminium alloy pole, for which the battery compartment shall be with IP 68 protection. The Operating temperature of the battery shall be -0 to 60 °C. The size of the battery shall be 120x146x470mm and weigh not more than 12.2kg. The system shall carry a battery management system along with the battery.

PV Module: PV cell technology shall be mono-Si, which shall be mounted on four sides of the square aluminium pole. The PV module and the pole shall be an integrated system (Top mounted solar panel is not accepted). Watt peak rating per module should be minimum 360Wp / 23Voc. Solar cell efficiency (under STC) 16.40%. Number of strings on the pole shall be min 8 nos with parallel striping topology. The lifespan of the PV module shall be > 20 years. The dimension of the PV module shall not be less than 172x172x4000mm per string.

Pole: The total height of the Pole shall be 6m above ground level. Aluminium alloy bottom part shall be 2m and solar PV module part shall be 4m. Size of the square pole shall not be less than 172x172mm. The pole shall have a special locking arrangement for the battery compartment. The aluminium shall be powder coated with RAL 7043. Total nominal peak power output shall be 360Wp. The Light poles shall be EN 40-6 & CE certified. Battery compartment should be provided with lock and key mechanism for security purpose.

b. For 180Wp/4M High Solar Street Light System:-

Luminary: The luminary shall deliver a system lumen > 2000 lm by consuming wattage <27W. The luminary shall be with 4000K and CRI > 70. The luminary shall have a rated life of 50,000 burning hours @ L70. The luminary shall be circular in shape made of pressure die-cast aluminium body. The bottom cover shall be polycarbonate with IP 65 and IK 08 rating. The LED shall be SMD type.

Battery: The battery used in the post top lantern shall be LiFePO₄. The battery capacity shall be 60Ah with Life cycles of 2500 cycles @ 90% DOD. The battery shall be integrated inside the square aluminium alloy pole, for which the battery compartment shall be with IP 68 protection. The Operating

temperature of the battery shall be -0 to 60 °C. The size of the battery shall be 120x146x470mm and weigh not more than 8.5kg. The system shall carry a battery management system along with the battery.

PV Module: PV cell technology shall be mono-Si, which shall be mounted on four sides of the square aluminium pole. The PV module and the pole shall be an integrated system (Top mounted solar panel is not accepted). Watt peak rating per module 180 Wp/23Voc. Solar cell efficiency (under STC) 16.40%. Number of strings on the pole shall be 4 nos with parallel striping topology. The lifespan of the PV module shall be > 20 years. The dimension of the PV module shall not be less than 172x172x2000mm per string.

Pole: The total height of the pole shall be 4m above ground level. Aluminium alloy bottom part shall be 2m and solar PV module part shall be 2m. Size of the square pole shall not be less than 172x172mm. The pole shall have a special locking arrangement for the battery compartment. The aluminium shall be powder coated with RAL 7043. Total nominal peak power output shall be 180Wp. The Light poles shall be EN 40-6 & CE certified. Battery compartment should be provided with lock and key mechanism for security purpose.

2. Type - II: Specifications (Integrated Type).

Particulars	Model -I	Model -II
PV Module	12V x 100 Watt poly/mono panel	12V x 150 Watt poly/mono panel
Battery	12.8V x 40 Ah Lithium Ferro Phosphate Battery with 80% DOD	12.8V x 60 Ah Lithium Ferro Phosphate Battery with 80% DOD
Charge Controller	12V/10A MPPT	12V/15A MPPT
LED Lamp (Sensor Control)	Max Power - 12v 20W Led Chip brand – Bridgelux/ Osram/Cree Lumen (LM) - 3000 lm Life Time – 50000 Hours	Max Power - 12v 30W Led Chip brand – Bridgelux/ Osram/Cree Lumen (LM) - 4500 lm Life Time – 50000 Hours
Lamp Material	Aluminium Alloy	Aluminium Alloy
Charge Time	4-5 Hours (by Sun)	4-5 Hours (by Sun)
Discharge Time	02 Days or 24 Hours	02 Days or 24 Hours
Duty Cycle	The illumination should be 100% for first 5 Hours, 50% for next 3 Hours and 30% for the rest of the time.	
Height of Pole (GI Pole)	6 meters above GL (Ground Level)	7 meters above GL (Ground Level)

3. Type - III: Specifications (Non-Integrated or Semi Integrated Type).

Particulars	Model -I	Model -II	Model -III	Model -IV
PV Module	12V, 75Wp poly/mono panel	12V, 100Wp poly/mono panel	12V, 150Wp poly/mono panel	12V,200Wp poly/mono panel
Battery	12.8V 30Ah	12.8V 40Ah	12.8V,60Ah	12.8V,80Ah
MPPT Charge Controller	10A	10A	15A	15A
LED Lamp	12W	20W	30W	40W
Lamp Material	Aluminium Alloy	Aluminium Alloy	Aluminium Alloy	Aluminium Alloy
Charge Time	4-5Hours (by Sun)	4-5Hours (by Sun)	4-5Hours (by Sun)	4-5Hours (by Sun)
Autonomy	2Days/24Hours	2Days/24Hours	2Days/24Hours	2Days/24Hours
Light Operation	Dusk to Dawn with 5 Hours full light level, 3 Hours at 60% brightness level and rest of the time at 30% light level			

Height of Pole (Gl)	6 meters above GL	6 meters above GL	7 meters above GL	7 meters above GL
Light Source	LED Chip should be compliance to IES: LM-80 (Approved Method for Measuring Lumen Maintenance of LED Light Sources and LED lumen depreciation time to L70). Test report for same should be submitted.			
Light Out put	The luminaire must use high efficacy W-LED with minimum 135 lumens per watt (and UV free). [A certificate to be submitted by the System supplier to the Test Lab during certification] Color Temperature: Between 5500 K to 6500 K. CRI \geq 70 Luminous intensity distribution should follow the batwing patterns in polar curves. The luminaire should be tested for all type tests as per IS 10322 Part 5 Sect 3 or IEC 60598-2-3 standards.			
Ingress Protection - IP	Luminary Optical and Control gear compartment - IP 65 / IP 66			

4. Type - IV: Specifications (Garden Light).

Particulars	Details
PV Module	12V x 30 Watt polycrystalline panel
Battery	12.8V x 10 Ah Lithium Ferro Phosphate Battery with 100% DOD
Charge Controller	12V/ 5/10A MPPT as per MNRE
LED Lamp (Sensor Control)	Max Power - 20W Led Chip brand - New Century/ Nichia/Phillips/Osram/Cree. The minimum Lumen (LM) output of the luminary should be 2000 lm. Life Time - 50000 Hours
Lamp Material	Aluminium Alloy
Charge Time	4-5 Hours (by Sun)
Autonomy	02 Days/ 24 Hours
Duty cycle	Provided with motion/time sensor to conserve energy
Height of Pole (SS Pole)	5 meters above GL

5. Type - V: Specifications (Campus Light).

Particulars	Details
PV Module	12V x 35 Watt monocrystalline panel x 3nos.
Battery	12.8V x 20 Ah Lithium Ferro Phosphate Battery x 3nos.
Charge Controller	Micro processor based MPPT as per MNRE with dimming & motion sensor
Luminary	12 Watt (Max.) x 3nos.
Charge Time	4-5 Hours (by Sun)
Autonomy	02 Days/ 24 Hours
Height of Pole (GI Pole)	6 meters octagonal pole shall be min 75 mm at top side, 150 mm at bottom side with minimum thickness of 3 mm. The base plate shall be of size 260x260x18 mm duly welded to pole.
Mounting Structure	Hot Dip galvanized design to hold 3 integrated type luminary with battery and panel in 360 degree formation
Duty cycle	Dimming profile at 100% for first 5 hours 50% for next 5 hours and 100% for rest 2 hours or provided with motion/time sensor to conserve energy.

LED Lamp (Sensor Control)	Max Power - 12W (each) Led Chip brand –Nichia/Phillips/ Osram/Cree. The minimum Lumen (LM) output of the luminary should be 2000 lm. Life Time – 50000 Hours
Lamp, Battery and PV housing	Should be integrated type made of pressure die-cast aluminum with the provision of replacement of module

- (i) The battery and CCU or other electronic components should be placed in a weather resistant IP box (Certificate needed) enclosure suitable for outdoor applications with the arrangements to protect circuits from insects and heat. Also provision for Charging from Module and load out put for Luminaries. The charging unit should have two indication – Green for charging and Red for fault , Fuse, ON/OFF switch
- (ii) Solar Charge Controller should be as per MNRE specifications.

SOLAR PHOTO VOLTAIC (SPV) MODULE -

1. Modules supplied with the Solar Street Light systems shall have certificate as per IS14286/IEC 61215 specifications or equivalent National or International/ Standards. STC performance data supplied with the modules shall not be more than one year old.
2. Modules must qualify to IS/IEC 61730 Part I and II for safety qualification testing.
3. The minimum module efficiency should be minimum 15 percent and fill factor shall be more than 70 percent.
4. Modules must qualify to IEC TS 62804-1:2015 for the detection of potential-induced e-gradation.
5. The name plate shall conform the IS 14286/IEC61215
6. Module to Module wattage mismatch in the SPV array mismatch shall be within (\pm) 3 percent.
7. Variation in overall SPV array wattage from the specified wattages shall be within zero percent to +10 percent.
8. The PV Modules must be warranted for output wattage, which should not be less than 90% of the rated wattage at the end of 10 years and 80% of the rated wattage at the end of 25 years.
9. **IDENTIFICATION AND TRACEABILITY -**
Each PV module must use a RF identification tag (RFID), which must contain the following information:
 - (i) Name of the manufacturer of PV Module
 - (ii) Name of the Manufacturer of Solar cells
 - (iii) Month and year of the manufacture (separately for solar cell and module)
 - (iv) Country of origin (separately for solar cells and module)
 - (v) I-V curve for the module
 - (vi) Peak Wattage, I_m , V_m and FF for the module
 - (vii) Unique Serial No and Model No of the module
 - (viii) Date and year of obtaining IEC PV module qualification certificate
 - (ix) Name of the test lab issuing IEC certificate
 - (x) Other relevant information on traceability of solar cells and module as per ISO 9000 series.

The RFID must be inside of module lamination. The module laminate, but must be able to withstand harsh environmental conditions. It must also have appropriate Barcode in it.
10. The panel should be supplied with CREDA Logo in the form of sticker on the back of SPV panel or duly laminated inside the glass of solar module with the remark "Manufactured for CREDA". Inter connections of solar modules should

be through good quality male female joint. Name of manufacturer, Sl.No. of Module & manufacturing year should be clearly fixed inside the glass lamination of every module. Back label should be affixed behind every module which should clearly state the specifications & capacity of the module.

11. All SPV modules must be indigenously built and made in India.

MECHANICAL COMPONENT

1. A corrosion resistant metallic frame structure should be fixed on the pole to hold the SPV module and the luminary.
2. The frame structure should have provision so that the module can be oriented at the suitable tilt angle.
3. Pole should be Hot dip galvanized pipe as per IS1161 & IS4736 i.e. Class B.
4. The pole should have the provision to hold the luminary.

BATTERY

1. Battery pack should have proper 'Battery management System' (BMS) for cell balancing, over charge and over temperature protection.
2. Cells should have safety vent cap for releasing of excess internal cell pressure.
3. Cells should conform to latest BIS/International Standards. BIS/IEC/UN and CE certified cells should only be used.

LIGHT SOURCE

1. The light source will be a white LED type.
2. The colour temperature of white LED used in the system should be in the range of 5500°K-6500°K.
3. W-LEDs should not emit ultraviolet light.
4. The light output from the white LED light source should be constant throughout the duty cycle.
5. The lamps should be housed in an assembly suitable for outdoor use.
6. The temperature of heat sink should not increase more than 20°C above ambient temperature during the dusk to dawn operation.

ELECTRONICS

1. The total electronic efficiency should be at least 90 %.
2. Charge controller should be MPPT Type as per MNRE.
3. Electronics should operate at an appropriate voltage suitable for proper charging of the battery.
4. The PV module itself should be used to sense the ambient light level for switching ON and OFF the lamp.
5. The PCB containing the electronics should be capable of solder free installation and replacement.
6. Necessary lengths of wires/cables, switches suitable for DC use and fuses should be provided.

ELECTRONIC PROTECTIONS

1. Adequate protection is to be incorporated under "No Load" conditions e.g. when the lamp is removed and the system is switched 'ON'.
2. The system should have protection against battery overcharge and deep discharge conditions.
3. The System should have protection against short circuit conditions.
4. Protection for reverse flow of current through the PV module(s) should be provided.
5. Adequate protection should be provided against battery reverse polarity.
6. Load reconnect should be provided at 80% of the battery capacity status.

EARTHING ARRANGEMENT

1. Preferably Marconite earthing shall be provided for Solar Street Light System.
2. For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.

USE OF INDIGENOUS COMPONENTS

It will be mandatory to use indigenously manufactured solar modules. The Luminary, Battery, controller and balance of system should also be manufactured indigenously. The SI has to declare the list of imported components used in the Solar Street Light System.

LIGHTNING ARRESTOR

Lightning Arrestor should be a separate unit and confirming to IEC 62561 - 1, 2 & 7 detailed as below:

IEC 62561-1- Lightning Protection System Component (LPSC) – Part 1 – Requirement for connection components.

IEC 62561- 2- Lightning Protection System Component (LPSC) – Part 2 – Requirement for conductors and earth electrodes.

IEC 62561-7- Lightning Protection System Component (LPSC) – Part 7 – Requirement for earthing enhancing compounds.

OPERATION AND MAINTENANCE MANUAL

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar Street Lighting System. The following minimum details must be provided in the Manual:

1. Basic principles of Photovoltaic.
2. A small write-up (with a block diagram) on Solar Street Lighting System - its components, PV module, battery, electronics and luminary and expected performance.
3. Type, Model number, Voltage & capacity of the battery, used in the system.
4. The make, model number, country of origin and technical characteristics (including IESNA LM-80 report) of W-LEDs used in the lighting system.
5. About Charging and Significance of indicators.
6. Clear instructions about erection of pole and mounting of PV module (s) and lamp housing assembly on the pole.
7. Clear instructions on regular maintenance and troubleshooting of the Solar Street Lighting System.
8. DO's and DONT's.
9. Name and address of the contact person for repair and maintenance, in case of non-functionality of the solar street lighting system.

e-Price Bid - A (Type - I)**e-Price Bid (For supply, installation, Commissioning & Testing of Solar Street Light System)**

Schedule of Rates for Solar Street Light Systems

(e-bidding as per Specifications & Scope of Work of No.13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019)

Supply, Survey, Installation and Commissioning of **Solar Street Light Systems with** five years on site unconditional warrantee, system insurance and 05 years COMC anywhere in the State of Chhattisgarh.

No.	Description	Rate/ Unit (without GST)
1	Supply of Solar Street Light System 6 meter high with 360Wp Module/ LFP Battery (100AH at 12.8V)/ LED Luminary with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
2	Supply of Solar Street Light System 4 meter high with 180Wp Module/ LFP Battery (60AH at 12.8V)/ LED Luminary with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
GRAND TOTAL (1+2)		

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Name of the authorized Signatory:

Signature of the Authorized Signatory:

Seal of Company:

Date:

e-Price Bid – B (Type – II)**e-Price Bid (For supply, installation, Commissioning & Testing of Solar Street Light System)**

Schedule of Rates for Solar Street Light Systems

(e-bidding as per Specifications & Scope of Work of No.13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019)

Supply, Survey, Installation and Commissioning of **Solar Street Light Systems with** five years on site unconditional warrantee, system insurance and 05 years COMC anywhere in the State of Chhattisgarh.

No.	Description	Rate/ Unit (without GST)
1	Supply of Solar Street Light System (20W) with LFP Battery and 100 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
2	Supply of Solar Street Light System (30W) with LFP Battery and 150 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
GRAND TOTAL (1+2)		

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Name of the authorized Signatory:

Signature of the Authorized Signatory:

Seal of Company:

Date:

e-Price Bid – C (Type – III)**e-Price Bid (For supply, installation, Commissioning & Testing of Solar Street Light System)**

Schedule of Rates for Solar Street Light Systems

(e-bidding as per Specifications & Scope of Work of No.13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019)

Supply, Survey, Installation and Commissioning of **Solar Street Light Systems with** five years on site unconditional warrantee, system insurance and 05 years COMC anywhere in the State of Chhattisgarh.

No.	Description	Rate/Unit (without GST)
1	Supply of Solar Street Light System (12W) with LFP Battery and 75 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
2	Supply of Solar Street Light System (20W) with LFP Battery and 100 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
3	Supply of Solar Street Light System (30W) with LFP Battery and 150 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
4	Supply of Solar Street Light System (40W) with LFP Battery and 200 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	
GRAND TOTAL (1+2+3+4)		

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Name of the authorized Signatory:

Signature of the Authorized Signatory:

Seal of Company:

Date:

e-Price Bid – D (Type – IV)**e-Price Bid (For supply, installation, Commissioning & Testing of Solar Street Light System)**

Schedule of Rates for Solar Street Light Systems

(e-bidding as per Specifications & Scope of Work of No.13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019)

Supply, Survey, Installation and Commissioning of **Solar Street Light Systems with** five years on site unconditional warrantee, system insurance and 05 years COMC anywhere in the State of Chhattisgarh.

No.	Description	Rate/ Unit (without GST)
1	Supply of Solar Street Light System (20W) with LFP Battery and 30 Wp SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Name of the authorized Signatory:

Signature of the Authorized Signatory:

Seal of Company:

Date:

e-Price Bid – E (Type – V)**e-Price Bid (For supply, installation, Commissioning & Testing of Solar Street Light System)**

Schedule of Rates for Solar Street Light Systems

(e-bidding as per Specifications & Scope of Work of No.13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019)

Supply, Survey, Installation and Commissioning of **Solar Street Light Systems with** five years on site unconditional warrantee, system insurance and 05 years COMC anywhere in the State of Chhattisgarh.

No.	Description	Rate/ Unit (without GST)
1	Supply of Solar Street Light System (12W x 03 nos) with LFP Battery and 35 Wp x 03 nos SPV Module with five years onsite unconditional warrantee.	
	Installation and Commissioning including civil works at site	
	Comprehensive Operation and Maintenance of Systems for five years	
	TOTAL AMOUNT without GST	

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Name of the authorized Signatory:

Signature of the Authorized Signatory:

Seal of Company:

Date:

STANDARDS FOR SOLAR STREET LIGHT SYSTEMS

Component	Standard	Description
1. PV Module- Design	IEC 61215-1:2016	Terrestrial Photovoltaic (PV)modules- Design qualification and type approval- Part 1 : Test requirements
	IEC 61215-1-1:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 1-1 : Special requirements for testing of crystalline silicon photovoltaic (PV) modules
	IEC 61215-1-2:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 2: Test procedures
2. Module Testing	IEC 61701: 2011	Salt mist corrosion testing of photovoltaic (PV) modules, wherever applicable
3. PV Module Safety	IEC 61730-1:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for construction
	IEC 61730-2:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for testing
	UL 1703/ UL 61730	PV module safety standards
4. Junction Box/ Fuses/ Cut-Offs	IEC 62790: 2014	Junction boxes for Photovoltaic modules – Safety requirements and tests
	UL 2579	UL 2579: Low Voltage Fuses- Fuses for Photovoltaic systems, wherever required
5. Connectors	UL 4248-18	Fuse Holders- Part 18: Photovoltaic Systems
	IEC 62852: 2014	Connectors for DC-application in photovoltaic Systems- Safety requirement test
6. Battery	IP 25	Battery & BMS should be in IP-25 Box with the arrangement of proper ventilation but arrangement for prevention of insects.
7. Wires, Cable and Cords	UL 1581	Reference Standard for Electrical Wire, Cables and Flexible Cords
	UL 4703	Photovoltaic Wire

BIS STANDARDS APPLICABLE FOR SPV APPLICATIONS

Component	Standard	Description
1.Storage Batteries	IS 16270	Secondary Cells and Batteries for Solar Photovoltaic Application General – Requirements and Methods of Test
	IS 16046	Standard For Lithium Ion Battery
2. LED Lights & Luminaries	IS16101	General Lighting – LEDs and LED Modules – Terms and Definitions
	IS 16102	Self-Ballasted LED Lamps for General Lighting Services
	IS 16103	LED Modules for General Lighting
	IS 16107	Luminaries Performance
	IS 16221 (Part 2)	UL 2579: Low Voltage Fuses- Fuses for Photovoltaic systems, wherever required

DRAFT AGREEMENT

CONTRACT AGREEMENT BETWEEN Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur AND **M/s.....** Represented by THIS CONTRACT AGREEMENT against Tender No. 13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019 (also referred to as "Service Contract") is made on the day of Month..... 2019.

BETWEEN

- (1) Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur a society incorporated under the laws Society Registration Act 1973 , (1973 , Sr. No. 44) (with amendment from time to time) and having its Registered Office at VIP Road Near Energy Education Park, Village- Fundhar, Raipur and (hereinafter called "The Employer" and also referred to as "CREDA")

And

- (2) Represented bya company incorporated under the laws of Companies Act 1956/2013/ Partnership firm/ Proprietorship firm/Consortium (as applicable, with amendment from time to time) and having its Principal place of business at and Registered Office at.....hereinafter called "The Contractor" and also referred to as "....."

Whereas the contractor has offered to enter into contract with the said CREDA for the Supply of Solar Street Light Systems and for installation, commissioning and comprehensive operation & maintenance of Solar Street Light Systems with 5 Year Warranty.

Wide Tender No. 13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019 on the terms and conditions herein contained and the rates approved by the CREDA (Letter No. dated annexed here to) have been duly accepted and where as the necessary security deposit shall be furnished in accordance with the provisions of the tender document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between parties to these presents as follows -

- 1) The Contractor shall, during the period of this contract, that is to say from to or completion thereof, until this Contract shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours employed at his own expenses and by means of tools, implements and equipment etc. to be supplied by him to his labour at his own expenses, for installation of "**Solar Street Light Systems**" as described in tender documents. (Annexed to the agreement).
- 2) The NIT (Notice Inviting Tender), Corrigendum to NIT, Notices, Bid documents (Qualifying, Technical and Financial), approved rates annexed hereto and such other additional particulars, undertaking, instructions, general conditions of contract, Scope of work, Technical specifications of Solar Street Light Systems and Annexure therein, engineering documents, detailed specifications of BOS & drawings, so far they relate to the Tender No. 13240/CREDA/ Solar Street Light/2019 Dated: 04.11.2019 as may be found requisite to be given during execution of the work shall be deemed and taken to be an integral part of the contract and shall also be deemed to be included in the expression "The Agreement or "The Contract "wherever herein used.
- 3) The contractor shall also supply the requisite number of workmen with means & materials as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc. required for the proper execution of work within the time prescribed in the work orders and /or as per the tender conditions.

- 4) The Engineer in Charge or his authorized representative (s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.
- 5) Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory at the cost of the eligible SI, if desired by CREDA. CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.
- 6) CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

7) **ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -**

CREDA may by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder -

- (a) If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the work order or within the period for which extension has been granted by CREDA to the eligible SI.
- (b) If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the Solar Street Light System and or for penalty as defined under this tender document until such reasonable time as may be required for the final completion of the work.
- (d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this tender document until the work is completed.

8) **FORCE MAJEURE -**

The eligible SI shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Street Light System by the related vendors, to whom the tenderer has placed order, shall also not be treated as force majeure.

9) **REJECTION OF WORKS -**

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Tender/ Activity of CREDA till further orders. The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/ supplies with enforcement of penalty as stated

above.

- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

10) EXTENSION OF THE TIME -

If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the system as may be reasonable but without prejudice to other terms and conditions of the contract.

11) PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

If the eligible SI fails to complete the assigned work within the schedule time specified in the sanction order or any extension granted there to, CREDA will recover from the SI as penalty a sum of **One per cent (1%)** of the system price for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed **5% (Five Per cent)** of the cost.

Review of the progress of installation of Solar Street Light System allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled Solar Street Light System or their part of can be re-allocated to other SI as per discretion of CREDA.

12) PENALTY DUE FROM THE ELIGIBLE SI -

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit of any project under CREDA.

13) ELIGIBLE SI'S RESPONSIBILITY -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Solar Street Light System by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any case the eligible SI does not complete the work as per the sanction orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

14) RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/system/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

15) RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS -

- The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Sanction order.
- The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or

- repairs of work.
 - All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.
 - SI shall have to submit JCCs within **60 days** after Installation and Commissioning of Solar Street Light System Systems in District Office of CREDA.
 - CREDA shall have rights to deduct such claims of payments from SI in case of complaints of such violations.
- 16) Contractor shall provide 05 year warranty in installed Solar Street Light Systems from the date of commissioning as per the terms & conditions prescribed in the Tender No. 13240/CREDA/ Solar Street Light/2019 dated: 04.11.2019.
 - 17) **DECLARATION OF CONFLICT OF INTEREST** - The contractor hereby declares that nobody connected with or in the employment of **CREDA** is not/shall not ever be admitted as partner in the contract.
 - 18) (a) The contractor shall arrange insurance coverage for the materials and Solar Street Light System at his/beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The contractor shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/ Central laws. CREDA shall not bear any responsibility on this account.
 (b) Contractor shall arrange for insurance coverage for Solar Street Light Systems and module during COMC period i.e. for 05 year from the date of installation. Insurance should cover for damage and theft. In case of such incidence, SI must replace the lost/damaged part within 7 days.
 - 19) The contractor shall abide by the terms and conditions, rules, guidelines, construction practices, safety precautions etc. stipulated in the tender document including any correspondence between the contractor and the **CREDA** having bearing on execution of work and payments of work to be done under the contract.
 - 20) The contractor shall be responsible to follow all the laws including Workmen Compensation Act and all other laws in force & shall be responsible for all the obligations towards labour including EPF, ESI, etc.
 - 21) All the taxes deductible at source as per Acts in vogue shall be recovered by **CREDA** and deposited with the appropriate authorities
 - 22) Contractor agrees to abide by any decision/instruction passed by the appropriate authority under Anti-profiteering rules notified by the state/central government under GST act.
 - 23) Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble Court of Chhattisgarh.

"Herewith everything and anything contained in Tender document no. 13240/CREDA/ Solar Street Light/2019 dated: 04.11.2019 is part of this agreement which has been dully signed by both bidder and authorised signatory of CREDA".

In witness whereof the parties present today has hereby entered into agreement.

Signed & sealed on behalf of the above

Named contractor

Name :

Designation :

Signed on behalf of CREDA

Name: **Rajiv Khare**

Designation: **Chief Engineer**

Witness:

1. Name:-.....

2. Name:-.....

Address:-.....

Address:-.....

.....

.....

SCHEDULE - I**PART 'A': GENERAL INFORMATION**

(Strike off whichever is not applicable. Separate sheets should be used, wherever necessary)

- 01.** Name & Address of the Bidder :
- 02.** Name & Address of the firm/Company etc. :
- a) Registered office :
- b) Factory/works address :
- c) Fax Nos. :
- d) Telephone / Mobile Nos. :
- e) Email id :
- 03.** Confirm whether tenderer is Manufacturer : Yes/No
- 04.** Only manufacturer to give following particulars
- a) Address of factory :
- b) Year of starting manufacture :
- c) Whether same/similar materials :
Manufactured earlier
(if yes, give reference)
- d) Yearly/monthly production capacity :
- e) Maximum yearly production :
Achieved so far
- 05.** Whether the firm is SSI Unit of : Yes/No
Chhattisgarh State:
- a) If yes, write registration No. :
- b) Whether documentary evidence :
Regarding registration enclosed
- c) Items for registration :
- d) Period of registration :
- d) Whether latest copy Competency/ : Yes/No
Certificate furnished
- 06.** Whether the firm is 100% owned by
- a) State Government : Yes/No
- b) Central Government : Yes/No
- If yes, Notification/certificate issued from : Yes/No
The competent authority to this effect is
Enclosed
- 07.** a) Whether the bidder is old participant : Yes/No
with CREDA
- b) If yes, whether documentary : Yes/No
Evidence is enclosed.
- 08.** Any other information that bidder may like : If yes, give details
to give in order to light his bid

PLACE :

SIGNATURE OF TENDERER

NAME IN FULL

DATE :

DESIGNATION/STATUS

FIRM/COMPANY SEAL

SCHEDULE - I**PART 'B' : COMMERCIAL INFORMATION**

(Strike off, whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. i) Earnest Money Details : Bank draft/Bankers cheque payable to "CREDA", Raipur
- ii) Amount of E.M.D. & full details : ₹
- iii) If exempted, state whether the bidder is / Fully Owned State/Central Govt. Unit : SSI Unit of C.G.
- iv) Reference of documentary evidence regarding exemption enclosed. : Yes/No
02. Whether the offer is valid for 6 months from the date of opening of commercial/technical bid. : Yes/No
03. Rate of Sales Tax on the date of bid (exclusive in the rate quoted) :
04. **DISCOUNT:**
- a) Whether any rebate/discount is offered. : Yes/No
- b) If yes, whether the rebate is unconditional/conditional Rate/amount of rebate/discount : Yes/No
- c) If conditional State condition : Yes/No
05. **PAYMENT TERMS:**
Whether CREDA's terms of payment is acceptable to tenderer : Yes/No
06. **COMPLETION PERIOD OF WORK:**
Whether tenderer is agreeing for completion period of work as Specified in the tender : Yes/No
07. **PENALTY CLAUSE:**
Whether agreeable to CREDA's Penalty Clause : Yes/No
08. Whether agreeable to CREDA's clause of warrantee period : Yes/No
09. **SECURITY DEPOSIT:**
Whether Security Deposit clause is understood : Yes/No
10. Indicate State, Central Sales Tax Registration Number State : Yes/No
Central:
- (Please Note that in case of non-registration with Commercial Tax, Department Purchase Tax as admissible shall be deducted by the Purchaser from the Bills of the supplier)
11. Please mention whether rates offered are applicable for part quantities. : Yes/No

PLACE:

SIGNATURE OF TENDERER

DATE:

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

SCHEDULE - II**PART 'C' : TECHNICAL INFORMATION**

(Strike off whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. Whether material offered is exactly as per technical specification : Yes/No
02. Whether the copies of completion certificate received during last 3 years from other State Nodal Agency or from other Organization for Solar Street Light systems or Solar Stand Alone Street Light Systems (if yes, give details) enclosed. : Yes/No
03. Whether pamphlets/technical details literatures along with drawing etc. furnished with the offer : Yes/No
(if yes, give details)
04. Whether the tenderer agrees to furnish material test certificates in respect of chemical composition and physical properties from Govt./ Govt. approved lab with each batch of supplies. : Yes/No
05. Whether the tenderer has furnished details of manufacturing equipments and short history of plant : Yes/No
(if yes, give details)
06. Whether details of manufacturing process furnished with offer. : Yes/No
(if yes, give details)
07. a) Whether all testing facilities are available. : Yes/No
If so, give details and in case of non-availability of facilities indicate approved lab available in surrounding areas where tests are proposed to be conducted.

PLACE

SIGNATURE OF TENDERER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY

SEAL

SCHEDULE - III**TECHNICAL DEVIATIONS**

From,
Tenderer Name & Address -

To,
The CE,
CREDA, HO,
Raipur

Sub - Technical Deviations.

Dear Sir,

The technical deviations & variations to the specifications stipulated in the tender, for the item quoted are as under -

Sl.No.	Condition	Clause No. of Tender document	Page No. of Tender document	Statement of deviations and variations

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and other conditions. Variation/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the tender.

PLACE

SIGNATURE OF TENDERER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

NOTE - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.

SCHEDULE - IV**PAST EXPERIENCE****From :**

Bidder's Name & Address -

To,

The CE,**CREDA, HO,****Raipur****Sub - Performance/Past Experience.****Dear Sir,**

We furnish herewith the record of our performance and experience as follows -

Sl.No.	Purchaser's Name & Address	Order No. Date	Ordered Quantity	Qty. supplied (Nos.)	Value of Order
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PLACE

SIGNATURE OF TENDERER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

NOTE - Photocopy of the completion certificate received from other State Agencies/Govt. Undertakings etc. should be enclosed.

**(EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT
DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)**

Ref. No.....

Date.....

Completion cum Performance Certificate

This is to certify that M/S _____ (With Full Address), has successfully completed the work of design, Supply, Installation and Commissioning of **Solar High Mast System or Solar Stand Alone Street Light** in _____ State, as per following details :-

S. No.	Location/Site	District	Work Order No. & Date	Cap. Of Solar High Mast System or Solar Stand Alone Street Light	No. of System	Installation Date
Total						

This certificate is being issued against the request of M/S _____, for their intent for participation in the following Bid:-

S. No.	Bid Number
1	13240/CREDA/ Solar Street Light/2019 DATED 04-11-2019

The Workmanship and performance of the installed systems are found satisfactory and are in successful operation.

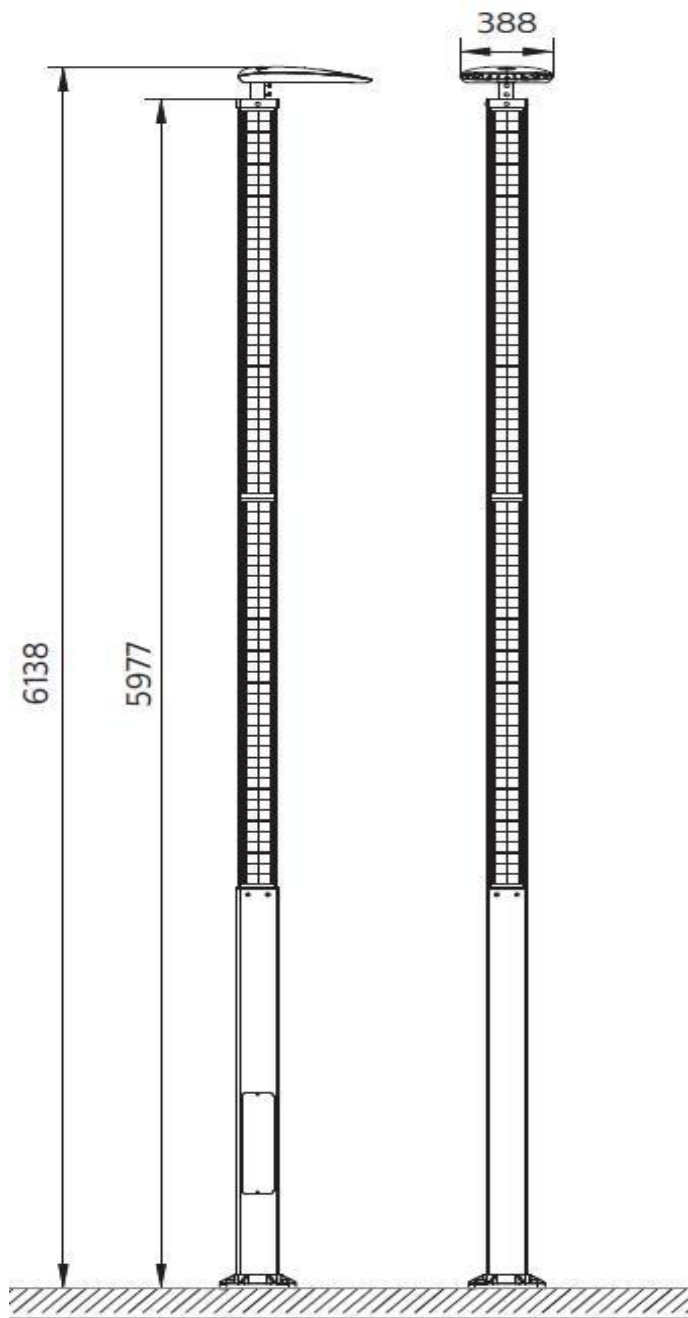
**Seal & Sign
(Authorised Signatory)**

Complete Drawing:

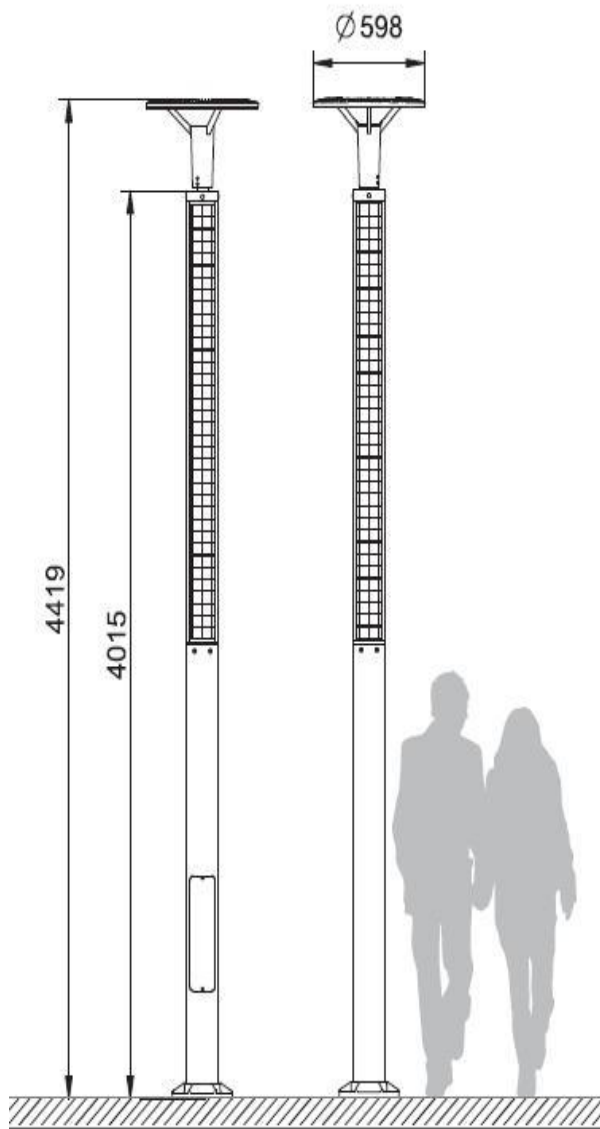
A-1

Type - I Drawing:

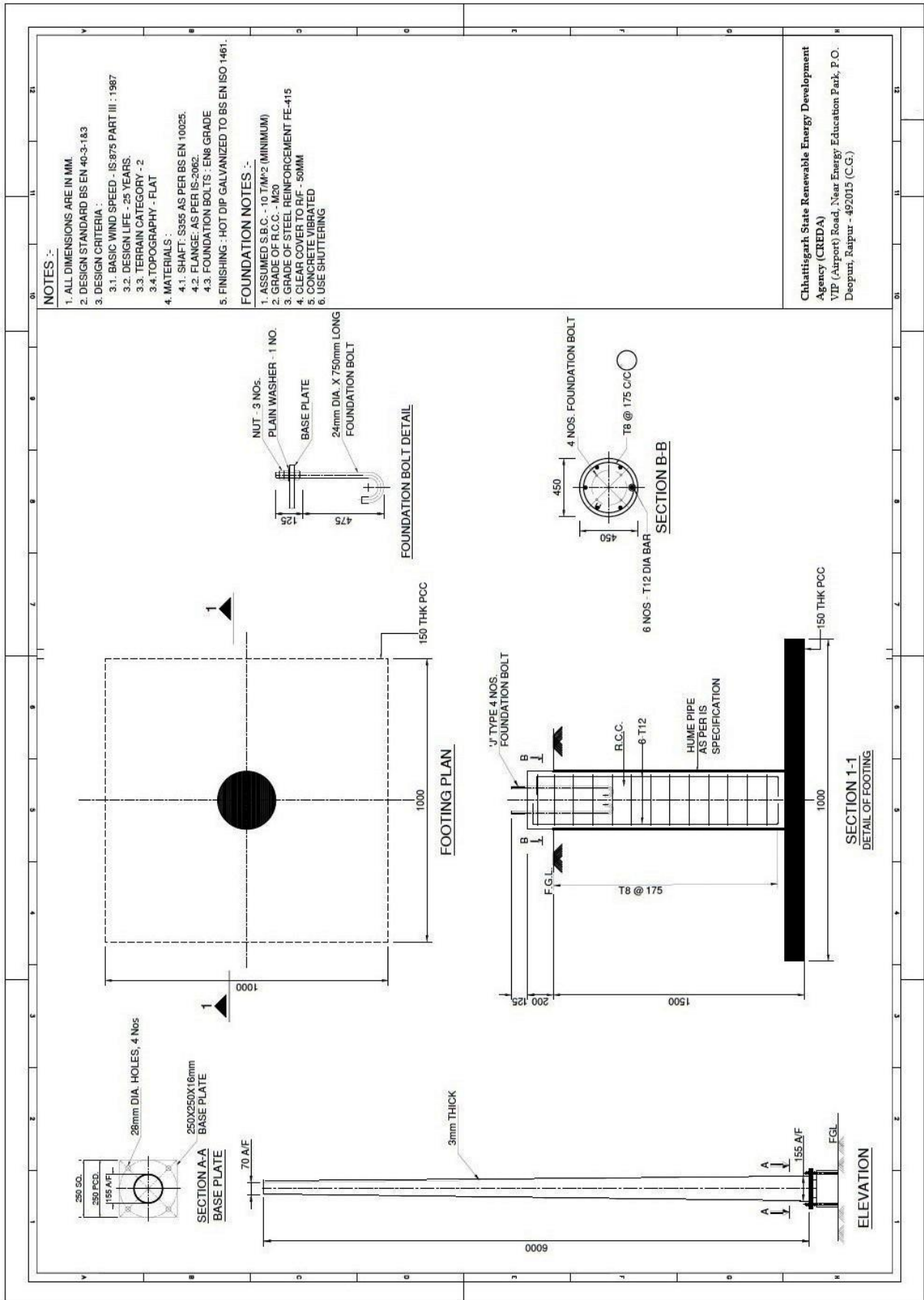
a. 6M High Pole:



b. 4M High Pole:



6M High Octagonal Pole



BENCHMARK COST FOR SOLAR STREET LIGHT SYSTEM

No. 318/38/2018-GCRT
 Government of India
 Ministry of New & Renewable Energy

Block No. 14, CGO Complex
 Lodhi Road, New Delhi
 Date: 25 July 2019

OFFICE MEMORANDUM

Subject: Benchmark costs for Off-grid Solar PV Systems and Solarisation of Grid Connected Agricultural Pumps for the Year 2019-20 –reg.

I am directed to convey the approval of competent authority for issuing of the benchmark costs for Off-grid Solar PV Systems and Solarisation of Grid Connected Agricultural Pumps for the Year 2019-20. System-wise benchmark costs are as under:

(i) Standalone Solar Pumps

Pump Capacity	Pump Type	Benchmark Cost (Rs. / HP)	
		General Category States	NER/ Hill States/ Island UTs
0.5 HP	AC/DC Surface	53000*	58300*
	AC/DC Submersible	68000*	74800*
1 HP	AC Surface	102000	112200
	AC Submersible	113000	124300
	DC Surface	108000	118800
	DC Submersible	119000	130900
2 HP	AC Surface	65000	71500
	AC Submersible	76000	83600
	DC Surface	73000	80300
	DC Submersible	86000	94600
3 HP	AC Surface/ Submersible	67000	73700
	DC Surface/ Submersible	74000	81400
5 HP	AC Surface/ Submersible	56000	61600
	DC Surface/ Submersible	66000	72600
7.5 HP	AC/DC Surface/ Submersible	56000	61600
10 HP	AC/DC Surface/ Submersible	51000	56100

* Benchmark cost *per system* instead of per HP shown for 0.5 HP solar pumps

(ii) **Solar Lighting Systems**

System	Benchmark Costs (Rs./Wp)	
	General Category States	North Eastern States/Hill States/ Island UTs
Solar Study Lamps	160	176
Solar Street Lights (with Li batteries)	299	328


(iii) **Standalone Solar Power Plants/Packs**

Capacity	Battery back-up (hrs)	Benchmark Costs (Rs./Wp)	
		General Category States	North Eastern States/Hill States/ Island UTs
Up to 10 kW	6	94	103
	3	74	81
	1	62	68
Above 10 kW and up to 25 kW	6	84	92
	3	66	72
	1	55	60

(iv) **Solarization of Grid-connected Agriculture Pumps**

Capacity	Benchmark Costs (Rs./Wp)	
	General Category States	North Eastern States/Hill States/ Island UTs
Up to 10 kW	54	59
Above 10 kW	48	52

2. The above benchmark costs are inclusive of total system cost and its installation, commissioning, transportation, insurance, five year AMC/CMC, and applicable fees and taxes.


 (Shobhit Srivastava)
 Scientist-C

To

All Concerned

Copy to Dir. (NIC) to upload this on the Ministry's website