

PART-I

Tender Notice

The Energy & Resources Institute (TERI)
6C, Darbari Seth Block,
India Habitat Centre, Lodhi Road, New Delhi - 110003

TERI invites bids from prospective bidders through tendering for the implementation (Weavers identification, co-funding mobilization, supply, installation, and maintenance for five years) of approximately 84 numbers of Hybrid Solar Charging Unit for Power Loom – Refer part 4 of this document in the rural areas of Uttar Pradesh (Varanasi, Chandauli, Azamgarh district etc.), as per the details given in tender document.

Sl. No.	Item	Tender No.	Quantity Required	Fee of Tender Document	Earnest Money Deposit
1	Solar Power Loom in the rural areas of Uttar Pradesh, India	<u>TERI/MAT/2019-20/001</u>	Approximately 84 nos	2,000.00	500,000.00

The tender document is available on TERI's website <<http://www.teriin.org/Announcements/>> from July 24, 2019. Interested bidders may view/download the Bid document, seek clarification, and submit their Bid up to the date and time mentioned in the Table below:

Sl. No.	Milestone	Date and time (dd-mm-yyyy; hh:mm)
1	Release of tender	24.07.2019
2	Last date for submission of written questions by bidders	04.08.2019; 1900 hrs
3	Response to the Queries by TERI	07.08.2019
4	Last date for submission of technical bid and financial bid response	14.08.2019; 1500 hrs.
5	Opening of technical bid responses	16.08.2019; 1130 hrs.
6	Declaration of shortlisted Firms on the basis of Stage 1 evaluation	19.08.2019; 1500 hrs

7	Submission of sample Hybrid Solar Charging Unit for Power loom (PCU, Lithium battery and required accessories) at Varanasi by shortlisted Bidders	Latest by 04.09.2019; 1700 hrs
8	Verification of sample at site by TERI	Latest by 05.09.2019; 1700 hrs.
9	Financial bid opening of only of technically qualified bidders	09.09.2019 ; 1130 hrs.
10	Finalization of Bidders	Intimation to be given only to finalized Bidder(s)
11	Venue of opening of technical and financial bids	The Energy & Resources Institute, 6C, Darbari Seth Block, India Habitat Centre, Lodhi Road, New Delhi - 110003

The Bidders need to submit the cost of Bid document fees and EMD as stated in the above Table through Demand Draft as bid document fees and as EMD in favour of TERI, payable at New Delhi. Numbers of the system mentioned as above, may increase or decrease, depending upon the field situation. TERI reserves the right to reject any or all tenders without assigning any reason thereof. The decision of TERI will be final and binding.

(Head-Materials)

TERI

Covering Letter

FROM:

(Full name and address of the Bidder)

.....

.....

To:

Head-Materials,
The Energy and Resources Institute (TERI)
Darbari Seth Block, India Habitat Centre
Lodhi Road, New Delhi - 110003

Subject: Offer in response to tender specification no.: TERI/MAT/2019-20/001

Sir,

We hereby submit our offer in full compliance with terms and conditions of the above tender. The bid, duly signed on each page, is submitted along with our acceptance of all specifications as well as terms and conditions.

We confirm that, we have the capability to supply, install, implement, and carry out five years comprehensive warranty maintenance of Hybrid Solar Charging Unit for Power Loom in the given time period (supporting document in proof of capacity should be attached).

We confirm that, we are capable of identifying weavers and can collect cofounding as per the requirement of the project.

The tender is submitted in two separate envelopes named Part-I for Technical Bid & Part-II for Financial Bid only.

(Signature of Bidder with seal)

Checklist of Annexures

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

Sl. No.	Annexure No.	Particulars	Yes/No Flag No.
1	Annexure I (a)	Details of Tender document fees (Demand Draft no., date, amount and bank name)	
2	Annexure I (b)	Details of Earnest money (Demand Draft no., Date, Amount and bank name)	
3	Annexure I (c)	General Particulars of the Bidder as per tender documents	
4	Annexure I(d)	DECLARATION BY THE BIDDER as per tender document	
5	Annexure II	Purchase order / completion Certificate for Supply Installation and commission of Solar Power Plant in the state of Uttar Pradesh during the last five years should be enclosed for proof of experience in executing	
6	Annexure III	A copy of valid GST registration certificate and PAN	
7	Annexure IV	Certificate issued by CA /Project Sponsor, regarding the co-funding amount mobilized from community under different solar project executed by the bidder in the last five years	
8	Annexure V	Overall Average Annual Turnover of the Company/Firm/Corporation / NGO in the latest last three financial years (A summarized sheet of turnover of last three Financial Years certified by a registered CA) along with the latest balance sheet	
9	Annexure VI	A summarized sheet of cumulative experience, of past five years in Successfully Supplying, Installation and Commissioning of Lithium Batteries based Solar PV Power Plants along with Purchase order and Completion certificate from central / State Government Agencies / PSU / TERI	
10	Annexure VII	A summarized sheet of cumulative experience, of past five years in Successfully Supplying, Installation and	

		Commissioning of Solar PV Power Plants along with Purchase order and Completion certificate from central / State Government Agencies / PSU / TERI	
11	Annexure VIII	Value of a ' Single Order ' of Solar Power Plants for power loom executed by the Bidder (A copy of the order indicating its value and certificate indicating its successful execution of past five years from central / State Government Agencies / PSU / TERI) Valued more than Rs 30 lakh Valued more than Rs 50 lakh	
12	Annexure IX	Cumulative experience in last five years in Supply, Installation and Commissioning of total number of solar power plant for power loom More than 50 Nos. More than 100 Nos.	
13	Annexure X	Bidder has Test Certificate for SPV Modules/ Lithium battery/Inverter / AC Motor etc., from an IEC/MNRE authorized testing center/TERI – solar lab. (Test Certificate should have been issued on or after April 1, 2017) Number of certificates: Certificate for any one of the above Certificate for any two or more of the above	
14	Annexure XI	The bidder has ISO 9001 certification The bidder has ISO 14001 certification The bidder has Safety Certification : OHSAS/ ISO 45001	
15	Annexure XII	The bidder's service centers for 24 X 7 service, operational at Varanasi , Chandauli and Azamgarh in Uttar Pradesh with full address and contact details	
16	Annexure XIII	Others (i) An undertaking that the service centres are operational. The details of service centre should be submitted with technical bid. (ii) An undertaking that the co-funding amount at the rate of INR 1,50,000 per Hybrid Solar Charging Unit for Power Loom will be collected from the beneficiaries (Cheque/DD/RTGS etc.) and deposited with TERI as per schedule. (iii) An undertaking by the Bidder, that no child labour will be used	

		<p>(iv) An undertaking by the Bidder that after qualifying the technical bid Bidder will submit one sample unit of Hybrid Solar Charging Unit along with all IEC / BIS test certificate for its testing at the premise of power loom weaver at Varanasi Uttar Pradesh, within 15 days and as per the communication received from TERI.</p> <p>(All those Bidders, who even after qualifying the technical bid, fail to submit the sample for testing within the stipulated time, as per the communication of TERI or even after the submission of sample, if, their sample does not meet the prescribed parameters of testing then also Bidder will deem disqualified and no further communication with them will be entertained and their financial bid will also not be opened).</p>	
17	Annexure XIV	Duly filled and signed technical bid and technical specification	

Please flag the annexure and write flag number in the box.

*Bidder's experience should be in supply, installation/commissioning (contracts executed, completed, and handed over) and maintenance of Solar Photovoltaic Systems/ Power Plants.

Note:

- Bids received without supporting documents for the various requirements mentioned in the tender document may be rejected.
- The tender document should be in proper spiral binding and all annexure and their flag should be in proper order.

(Signature of Bidder with seal)

Particulars of Tender

1	Tender No.	<u>TERI/MAT/2019-20/001</u>
2	Particulars of Work	Implementation (Household identification, co-funding mobilization, supply, installation, and maintenance) of approximately 84 numbers of Hybrid Solar Charging Unit for Power Looms in Uttar Pradesh (Varanasi, Chandauli, Azamgarh etc.), India.
3	Last date and time of submission of tender documents	14.08.2019 1500 hrs
4	Period of validity of rates for acceptance	06 months from opening of financial bid
5	Date and time of opening of tender (Technical bid)	16.08.2019, 1130 hrs
6	Date and time of opening of tender (Financial bid)	09.09.2019 ; 1130 hrs
7	Venue of opening of technical and financial bids	The Energy & Resources Institute, 6C, Darbari Seth Block, India Habitat Centre, Lodhi Road, New Delhi - 110003

1. Bidders are advised to study the tender Document carefully. Submission of Bid against this tender shall be deemed to have been done after careful study and examination of the procedures, terms and conditions of the tender Document with full understanding of its implications.
2. The Bids will be opened in the presence of bidder's representatives, who choose to attend, at the venue; date and time as mentioned in the above Table.

(Signature of Bidder with Seal)

General Particulars of the Bidder

Sl. No.	Name of Bidder	
1.	Postal Address	
2.	Mobile no.	
3.	Telephone, Telex, Fax No.	
4.	E-mail	
5.	Website	
6.	Name, designation, and mobile phone no. of the representative of the Bidder to whom all references shall be made	
7.	Name and address of the Indian/foreign Collaboration, if any	
8.	Anything/extra other than price of items (as mentioned in price Schedule) to be written in the price schedule	
9.	Have the Bidder to pay arrears of income tax? If yes up to what amount?	
10.	Have the Bidder ever been debarred by any Government Deptt. /Undertaking/Private Company for undertaking any work?	
11.	Details of offer (please mention number of pages and number of drawings in the hard copy)	
12.	Reference of any other information attached by the tenderer (please mention no. of pages and no. of drawings)	

(Signature of Bidder with Seal)

DECLARATION BY THE BIDDER

(Regarding Tender No. TERI/MAT/2019-20/001)

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

DO HEREBY DECLARE THAT

- 1 I am fully aware of all the requirements of the tender document and agree with all provisions of the tender document.
- 2 I am capable of executing and completing the work as required in the tender.
- 3 I accept all risks and responsibilities directly or indirectly connected with the performance of the tender.
- 4 I have no collusion with other Bidders, any employee of TERI or with any other person or firm in the preparation of the bid.
- 5 I have not been influenced by any statement or promises of TERI or any of its employees, but only by the tender document.
- 6 I am financially solvent and sound to execute the work.
- 7 I am sufficiently experienced and competent to perform the contract to the satisfaction of TERI.
- 8 The information and the statements submitted with the tender are true.
- 9 I am familiar with all general and special laws, acts, ordinances, rules, and regulations of the Municipal, District, State, and Central government that may affect the work, its performance or personnel employed therein.
- 10 I have not been debarred / black listed on account of their past activity from similar type of work by TERI and or Government undertaking/Department/ Any other private company.
- 11 This price offer shall remain valid for acceptance for 6 (six) months from the date of opening of financial bid of tender and tender terms and conditions will be valid till the time work is not completed.
- 12 I give the assurance to execute the tendered work as per specifications terms and conditions.
- 13 I confirm the capability to supply, install, and carryout five years comprehensive warranty maintenance of approximately 84 numbers of Hybrid Solar Charging Unit for Power Looms within the time schedule mentioned in the tender document and also the capability to mobilize the co-funding amount of INR 150,000 (One Lakh fifty thousand) per system.
- 14 I confirm that none of my family member are working with TERI

Or

I hereby declare that following employees of TERI are my family members (whatever applicable):

(a)...

(b).....

(Signature of Bidder with seal)

Part 2: INSTRUCTION TO BIDDERS

Section 1: CONTENTS of THE TENDER DOCUMENT

1.1 CONTENT OF TENDER DOCUMENT

1.1.1 The tender procedure and contract terms are prescribed in the tender documents. In addition to the tender Notice, the Bidding documents include.

PART-I : Technical

Part -1 : Tender Notice

- i. Tender Notice
- ii. Covering Letter
- iii. Checklist of Annexures
- iv. Particulars of Tender
- v. General Particulars of Bidder
- vi. Declaration by Bidder

Part - 2: Instruction to Bidders

- Section-1: Contents of tender document
- Section-2: Eligibility condition
- Section-3: Preparation of tender
- Section-4: Submission of tender
- Section -5: Tender opening and evaluation
- Section-6: Procedure for finalization of Bid

Part - 3: General Condition of Contract

Part - 4: Scope of Work & Technical Specifications

Part - 5: Details of Warranty

Part - 6: Technical Bid

Part - II: Financial Bid

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

1.2 LOCAL CONDITIONS

It shall be imperative on each bidder to fully inform him of all local conditions and factors, which may have any effect on the execution of the works covered under these documents and specifications. TERI shall not entertain any request for clarifications from the Bidder, regarding such local conditions.

1.3 CLARIFICATION:

A prospective Bidder requiring any clarification of the Tender Documents may contact TERI in writing or by mail at the TERI's mailing address indicated in the Invitation for tender.

Enquiries/clarifications may be sought by the Bidder as per the following:

Technical queries: Mr. Jitendra Tiwari

Email: jitendra.tiwari@teri.res.in

All queries: Ms. Trisha Sharma

Email: trisha.sharma@teri.res.in

1.4 AMENDMENT OF TENDER DOCUMENTS

At any time prior to the submission of the tender the TERI may for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the tender documents by amendments. Such document shall be made available on websites:

All are requested to remain updated with the website. No separate reply/intimation will be given elsewhere.

Section 2: ELIGIBILITY CONDITIONS

Eligibility Conditions for Bidders

1. Minimum Eligibility Conditions:

- i. The Bidders should be:
A Registered Company / Firm/ Corporation / NGO in India
- ii. The bidder should have minimum two years of experience in executing contract of Solar Photovoltaic Power Plants in the state of Uttar Pradesh. Purchase order / completion Certificate of past five years should be enclosed
- iii. The Bidder should have valid GST and PAN registration certificate. A copy of which should be enclosed
- iv. The Bidder should have executed solar Project in the past five years, in which mobilization of co-funding from the community has been an integral part of the implementation and commissioning of the project. As a proof of such cofounding mobilization, certificate issued by CA / Project Sponsor, should be enclosed.
- v. **Overall Average Annual Turnover of the Company/Firm/ Corporation in the last three financial years (FY-2016-17, 2017-18 and 2018-19) should be at least INR 2 Crore (Two Crore).** This must be the individual Company /Firm/ Corporation / NGO's turnover and not that of any group of Company /Firm/ Corporation / NGO. A summarized sheet of average turnover certified by registered CA should be compulsorily enclosed along with corresponding balance sheets.

2. Other Eligibility Conditions

The 'Financial bids' of only those bidders shall be opened, who qualify in 'Minimum Eligibility Conditions' as above and score at least 70% (Seventy percent) Points in 'technical evaluation'. The 'Points' for the 'technical evaluation' shall be assigned as under:

Sl. No.	Criteria	Point
1	Bidder's experience for Supply, installation, Commissioning and maintenance of Lithium batteries Based Solar Power Plant in past five years along with Purchase order and Completion certificate from central / State Government Agencies / PSU / TERI	
	More than 50 kWp	15
	More than 75 kWp	20
	More than 100 kWp	25
2	Cumulative Experience of past five years* of the Bidder in executing contracts of Solar Photovoltaic Power Plants (Installation & Commissioning of Solar PV Power Plants)	
	More than 100 kWp	5
	More than 150 kWp	10
	More than 200 kWp	15

3	Value of a ' Single Order ' of past five years* of Solar Power Plants/Hybrid Solar Charging Units for Power Loom executed by the Bidder : Valued more than Rs 30 lakh Valued more than Rs 50 lakh	5 10
4	Bidder's cumulative experience in last five years in supply, installation and commissioning of total number of Solar power plant for Power Loom Cumulative nos: More than 50 nos More than 100 nos	10 20
5	Bidder has Test Certificate for SPV Modules/Lithium battery/ Solar based Power Conditioning Unit etc. , from an IEC/MNRE authorized testing centre/TERI-solar lighting laboratory. Test Certificate should have been issued on or after April 2017 and should be valid as on date. Certificate for any one of the above Certificate for any two or more of the above	5 10
6	Certification The Bidder has either ISO 9001 or ISO 14001 certification The Bidder has both ISO 9001 and ISO 14001 certification In addition to above if Safety Certification : OHSAS/ ISO 45001	3 7 10
7	The Bidder is capable of providing 24X7 warranty services through its network of service centers The bidder is having operational service centers: At one location mentioned in the tender At all locations mentioned in the tender	5 10

All those Bidders, who successfully qualify the technical bid, will have to submit one sample unit of Hybrid Solar Charging Unit along with all IEC / BIS test certificate for its testing at the premise of power loom weaver at Varanasi Uttar Pradesh, within 15 days and as per the communication received from TERI.

(All those Bidders, who even after qualifying the technical bid, fail to submit the sample for testing within the stipulated time, as per the communication of TERI or even after the submission of sample, if, their sample does not meet the prescribed parameters of testing then also Bidder will deem disqualified and no further communication with them will be entertained and their financial bid will also not be opened).

Section 3: PREPARATION OF TENDER

3.1 LANGUAGE OF BID AND MEASURE

3.1.1 The tender prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and TERI shall be written in English provided that any printed literature furnished by the Bidder may be written in another language as long as accompanied by an English translation of its pertinent passages in which case, for purpose of interpretation units of measurement shall be MKS system.

3.2 DOCUMENTS COMPRISING THE BID

3.2.1 The tender prepared by the Bidder shall comprise the following components:

- (a) A covering letter as provided in tender document
- (b) General particulars of bidder, as provided in tender document
- (c) Declaration by the Bidder, as provided in tender document
- (d) Documentary evidence establishing that the bidder is eligible to Tender and is qualified to perform the contract if its tender is accepted. Check list of Annexures as provided in tender document
- (e) Tender document signed on each page, as a confirmation by the Bidder to accept all technical specifications/commercial conditions along with all necessary enclosures/annexures.
- (f) Duly filled technical bid format.
- (g) Declaration by the Bidder that no child labours has been used.
- (h) Bidder will provide an undertaking, that service centre will be opened before commencement of the work.

3.3 BID PRICE

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

3.3.2 DUTIES AND TAXES

The price quoted should include all taxes and duties, custom duty, excise duty, GST, local taxes, income tax, surcharge on income tax, etc., if any. A Bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & GST norms will be payable by the Bidder. TDS will be deducted from the payment of the Bidder as per the prevalent laws and rules of Government of India and Government of Uttar Pradesh in this regard. All compliances (State /Central/Local -

GST /WCT/ESI/PF/Labour laws etc. is to be met by the Bidder / Contractor) and the same is to be produced by the Bidder / Contractor at the time of payment. The Project cost/ Bid Price shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable, once price bid is accepted by TERI.

3.4 BID CURRENCIES

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

3.5 SECURITY DEPOSIT/ PERFORMANCE GUARANTEE:

3.5.1 The successful Bidders, who execute the agreement with TERI for the work, shall have to furnish a security amount equivalent to 5 % of total value of the purchase orders in the form of Bank Guarantee valid for a period of 12 months from the date of execution of agreement. The bank guarantee may be issued by a nationalized bank and shall be in favour of 'TERI'. The aforesaid Bank Guarantee shall be furnished prior to the execution of agreement.

3.6 PERIOD OF VALIDITY OF TENDER

3.6.1 Validity of the price offer should be 6 (six) months from the date of opening of the financial bid of the tenders. Without this validity the tenders will be rejected.

3.6.2 In exceptional circumstances; the TERI will solicit the Bidder's consent to an extension of the period of validity. The request and the response thereof, shall be made in writing. The contract performance security provided under clause 3.5.1 above shall also be suitably extended.

3.7 BID SECURITY (Earnest Money)

3.7.1 The bidder shall furnish, as part of its bid, bid security of INR 5.0 lakh (Five lakh) in the form of Demand draft issued by a nationalized bank.

3.7.2 Any bid not secured with the tender fee and earnest money will be rejected by TERI as nonresponsive.

3.7.3 No Interest shall be payable on the amount of earnest money and the same will be released, after the tenders have been decided, to those Bidders who fail to get the contract.

3.7.4 The tender security (earnest money) may be forfeited:

a) If a Tenderer withdraws its tender during the period of tender validity specified by the Bidder in the tender.

b) If the successful Bidder fails to sign the contract within stipulated period and submit the performance security within the specified period of 15 days from the date of finalization of order

3.7.5 EMD of successful bidder shall only be released after signing of agreement and submission of 5% Security bank guarantee.

3.8 FORMAT AND SIGNING OF TENDER

3.8.1 The bid must contain the name, residence and places of business of the persons making the tender and must be signed and sealed by the Bidder with his usual signature. The name and designations of all persons signing should be typed or printed below the signature.

3.8.2 Tender by Corporation/ Company / Firm / NGO must be signed with the legal name of the Corporation/ Company/Firm /NGO by the 'President', Managing director or by the 'Secretary' or other designation or a person duly authorized.

3.8.3 The original copy of the tender shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to bid and bidder to the contract. The letter of authorization shall be submitted along with power-of-attorney. All the pages of the bid shall be initialed by the person or persons signing the tender.

3.8.4 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder in which case such corrections shall be initialed by the person or persons signing the tender.

(Signature of Bidder with seal)

Section 4: SUBMISSION OF TENDER

- 4.1 **Submission of tender:** The bid shall be submitted as per the guidelines given in the tender document.
- 4.1.1 The tender must be completed in all technical and commercial respect and should contain requisite certificate, drawings, informative literature, etc., as required in the specification.
- 4.1.2 **Technical and commercial price bid as per format are to be submitted in two separate and sealed envelopes marked Part-I & Part-II.**
- 4.1.3 First sealed envelope (Part-I) should contain earnest money, technical specification, brochure literature, other documents required, etc. It should be super scribed with tender number. **All parts of tender documents except financial bid duly signed should be submitted in the first envelope.** Requisite earnest money, tender fees in the form of Demand Draft should be attached.
- 4.1.4 **Second sealed envelope (Part-II) should contain financial bid only.** It should be super scribed with Tender No and 'Financial bid'. Anything in regard of financial condition, payment terms, rebate, etc. mentioned in financial bid may make the tender invalid. Therefore, it is in the interest of the tenderer not to write anything extra in part-II except price.
- 4.2 **EXPENSES OF AGREEMENT:** A formal agreement for a period of 06 (Six) years shall be entered into between TERI and the Contractor/ Bidder for the proper fulfillment of the contract. The expenses of completing and stamping of the agreement shall be paid by the successful bidder.
- 4.3 **DEADLINE FOR SUBMISSION OF BIDS:** Bids must be submitted by the tenderer in the date; time and address specified in the tender notice/ documents.

(Signature of Bidder with seal)

Section 5: TENDER OPENING AND EVALUATION

5.1 OPENING OF TENDER

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

- 5.1.1 First Part (Part-I) submitted having tender specification and super scribed as 'Technical Bid' shall be opened at the time and date mentioned in the tender notice by TERI's representatives in the presence of Bidders, who choose to be present.
- 5.1.2 Second Part (Part-II) containing Financial Bid shall be opened (after obtaining clarifications and establishing technical suitability of the offer) as per schedule. Second part of only those Bidders shall be opened whose first part (Part-I) shall be found technically suitable.

CLARIFICATION OF TENDER

- 5.2 To assist in the examination, evaluation, and comparison of bids TERI may at its discretion ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing.
- 5.3 TERI reserves the right to interpret the Bid submitted by the Bidder in accordance with the provisions of this document and make its own judgment regarding the interpretation of the same. In this regard TERI shall have no liability towards any Bidder and no Bidder shall have any recourse to TERI with respect to the selection process. TERI shall evaluate the Bids using the evaluation process specified in this document or as amended, at its sole discretion. TERI's decision in this regard shall be final and binding on the Bidders.

(Signature of bidder with seal)

Section 6: PROCEDURE for FINALIZATION of BID

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

6.1 Finalization of BID:

First the Technical bids shall be opened and evaluated.

Then the price bid of technically qualified bidders shall be opened.

The lowest rate (i.e., L-1) shall be the party to be awarded the contract. However, TERI reserves the right to split the order to more than one bidder if the technically qualified bidders can match the L-1 price.

6.2 Finalization of Empanelment:

First the Technical Bids shall be opened and evaluated.

Then the price bid of technically qualified parties shall be opened.

- The lowest rate (i.e. L-1) received (and in turn approved by the competent authority) would be the '**Approved Rate**'.
- L-1 i.e. lowest rate bidder will be awarded upto 60% of the total bid quantity.
- Approved lowest rate (L-1) would be offered to those lowest Bidders (i.e. L-2, L-3 and so on) having price not more than 15% of lowest approved rates (L-1) and will be empanelled and awarded equally, remaining of total bid quantity or as per his capacity given in the bid, whichever is lower.
- TERI will place orders on the Contractor/ Bidder, after the receipt of list of weaver beneficiaries of the project area, through the concerned contractor / bidder.
- Training related to the usage of Hybrid Solar Charging Unit, post installation of system at weaver's premise will be arranged by the Contractor/ Bidder, in association with the representatives of TERI.
- After work order is placed for work, it must be executed within the time schedule stipulated in work order. In case of delay (for any reason other than due to Force Majeure conditions or any extension thereof granted to him by TERI) a penalty equal to 1.0% of the price of the unperformed services for each week (For the purposes of calculation of delay, part of week shall be treated as week) of delay until actual performance up to a maximum deduction of 10% of the delayed services.
- It will be the sole responsibility of the Contractor / Bidder, to whom work order has been given, to mobilize the agreed cofounding amount (Only through Cheque / DD, issued in favour of TERI) from each weaver beneficiary and transfer the same to TERI along with the invoice.
- Release of payment to Contractor / Bidder will be done as per the payment schedule mentioned.

- 6.3 If the L-1 quote is more than 5% estimated value, than TERI reserves the right to negotiate with (lowest) L-1 bidder before finalization of the tender.
- 6.4 TERI reserves the right at the time of awarding the contract to increase or decrease the quantity of goods and locations of supply without any change in price or other terms and conditions.
- 6.5 TERI reserves the right to accept any bid and to reject any or all bids.
- 6.6 Notification of awarding the contract: Successful Bidder(s) for contract shall be intimated in writing
- 6.7 CONTRACT

Before execution of the work, a contract agreement for execution of the work shall be signed by the Bidder with TERI within 15 days of communication from TERI. In case agreement is not executed within the stipulated time, earnest money will be forfeited.

(Signature of Bidder with seal)

Part 3: GENERAL CONDITIONS OF CONTRACT

- 1.0 In the deed of contract unless the context otherwise requires:
- 1.1 TERI shall short list the successful Bidder (s) on 'Rate Contract' basis after verifying their capacity (or may choose one party, i.e., L1, to execute the order). The Project shall be executed by TERI. The successful Bidder(s) shall have to sign the contract with TERI.

DEFINITIONS:

- 1.2 'TERI' shall mean the Director-General of TERI or his representative and shall also include its successors in interest and assignees. The 'Contractor' shall mean (successful bidder), i.e., the person whose tender has been accepted by TERI and shall include his legal representatives and successors in interest.
- 1.3 The agreement shall be on turn-key basis. The work shall be completed within stipulated time from the date of placement of work order. However 'TERI' may in case of urgency ask the bidder to complete the work earlier, with the mutual consent of the Contractor/Bidder. In case the Contractor/Bidder fails to execute the said work within stipulated time, 'TERI' will be at liberty to get the work executed from the open market without calling any tender/e-tender and without any notice to the Contractor/Bidder, at the risk and cost of the Contractor/Bidder. Any additional cost incurred by 'TERI' shall be recovered from the Contractor/ Bidder. If the cost of executing the work as aforesaid shall exceed the balance due to the Contractor/Bidder, and the Contractor/Bidder fails to make good the additional cost, 'TERI' may recover it from the Contractor/Bidders' pending claims against any work in 'TERI' or in any lawful manner.
- 1.4 That on the request of the Contractor/Bidder and also in the interest of the organization 'TERI' is authorized to extend the validity of the agreement, subject to that the request of the Contractor/Bidder is received before the expiry of the agreement period, or any extended period granted to the Contractor/Bidder. Maximum period of extension shall be 2 months on the same terms and conditions as contained in this agreement.
- 1.5 The agreement shall be deemed to be extended till the date of completion of last work order subject to the completion period as provided in the Clause 1.3.
- 1.6 The Contractor, (i.e., the successful bidder), may be allowed to operate in the State of Uttar Pradesh through a single authorized dealer for execution of the orders placed on authorized dealer. It will be the sole responsibility of the Contractor, to execute orders placed as per time schedule, and to ensure quality parameters, specifications and other requirements provided in the tender document and as per agreement.
- 1.7 In the interest of the work and the programme, agreement executed between the Contractor/ Bidder and the 'TERI' may be extended to a mutually agreed period, if the

need so arises. It shall be sole responsibility of the Contractor/ Bidder to get verified the quality and quantity of the supplied material at the site of delivery.

2 LIQUIDATED DAMAGES

2.1 If the Contractor/ Bidder fails to perform the services within the time periods specified in the contract, the 'TERI' shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damage, a sum equivalent to 1.0% of the price of the unperformed services for each week (For the purposes of calculation of delay, part of week shall be treated as week) of delay until actual performance up to a maximum deduction of 10% of the delayed services. Once the maximum is reached, the 'TERI' may consider termination of the contract. In the case of violation of contract, TERI may confiscate pending payments/ dues of the Contractor/ Bidder assigning specific reasons and shall also have the power to debar/ blacklist the Contractor/ Bidder in similar circumstances. TERI may also invoke performance/security bank guarantee.

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

4 FORCE MAJEURE

4.1 Notwithstanding the provisions of clauses contained in this deed; the contractor/ bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to event of force majeure circumstances.

4.2 For purpose of this clause, 'Force majeure' means an event beyond the control of the contractor/bidder and not involving the contractor/bidder's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of Government either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes

4.3 However, if a force majeure situation arises, the contractor/bidder shall immediately notify 'TERI' in writing. The decision of the competent authority of TERI in above conditions shall be final.

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

6 The Contractor/Bidder shall not, without the consent in writing of 'TERI', transfer, assign or sublet the work under the contract or any substantial part thereof to any other party.

- 7 'TERI' shall have at all reasonable time access to the works being carried out by the Contractor/Bidder under the contract. All the work shall be carried out by the contractor/bidder to the satisfaction of 'TERI'.
- 8 If any question, dispute or difference what so ever shall arises between 'TERI' and the Contractor/Bidder, in the connection with the agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of existence of such question, dispute or difference and the same shall be referred to the sole arbitration of the Director-General, TERI or a person nominated by him. This reference shall be governed by the Indian Arbitration and Conciliation Act 1996, and the rules made there under. The award in such arbitration shall be final and binding on both the parties. Work under the agreement shall be continuing during the arbitration proceedings unless 'TERI' or the arbitrator directs otherwise.
- 9 'TERI' may at any time by notice in writing to the Contractor/Bidder either stop the work all together or reduce or cut it down. If the work is stopped all together, the Contractor/ Bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. Such expenses shall be assessed by 'TERI', whose decision shall be final and binding on the contractor/ bidder. If the work is cut down, the Contractor/Bidder will not be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.

10 INSPECTION AND TESTS

- 10.1 The following inspection procedures and tests are required by the 'TERI' in the presence of TERI's representative if so desired by 'TERI'.
- 10.2 'TERI' or its representative shall have the right to inspect and/or to test the goods to confirm their conformity to the contract. The special conditions of contract and/or the Technical specifications shall specify what inspections and test the 'TERI' required.
- 10.3 Inspection at Works
- 10.3.1 'TERI', its duly authorized representative shall have at all reasonable times access to the Contractor/ Bidders premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the works during its manufacture.
- 10.3.2 The Contractor/ Bidder shall give 'TERI', 15 day's written notice of any material being ready for testing. It shall be mandatory that such notice should reach 'TERI' within 30 days of placement of work order. Such tests shall be on the contractor/ bidder's

accounts/ expenses except for the expenses of the inspector. 'TERI' reserves the full rights, to waive off inspection of material.

- 10.3.3 The Contractor/Bidder is required to get the entire lot of the ordered material inspected at one time, before the supply of the materials.
- 10.3.4 All arrangements for the inspection of materials will be done by Contractor /Bidder.
- 10.3.5 The inspection by 'TERI' and issue of dispatch instruction there of shall in no way limit the liabilities and responsibilities of the contractor/bidder in respect of the agreed quality assurance programme forming a part of the contract.

11. **WARRANTY**

- 11.1 The Contractor/Bidder shall warrant as per standards for quality that anything to be furnished shall be new, free from all defects and faults in material, workmanship and manufacture, shall be of the highest grade and consistent with established and generally accepted standards for material of the type ordered, shall be in full conformity with the specifications, drawing or samples, if any and shall if operable, operate properly.

Nothing in clause 10 above shall in any way release the contractor/bidder from any guarantee or other obligations under this contract.

- 11.2 **Performance of Equipment:** In addition to the warranty as already provided, the Contractor/ Bidder shall guarantee satisfactory performance of the equipment and shall be responsible for the period or up to the date specified in Clause 11.3 hereof after the equipment has been accepted by the 'TERI' to the extent for any defects that may develop such defects shall be removed at his own cost when called upon to do so by the 'TERI'.
- 11.3 The Warranty period shall be 25 (Twenty-five) Years for the PV modules and 5 (five) years for complete system including battery from the date of commissioning and handing over of the system. The Contractor/Bidder shall rectify defects developed in the system within Warranty period promptly. In case the defects are not rectified within a week of the receipt of the complaint by the Contractor/ Bidder, 'TERI' shall have full liberty to restore the system in working condition. The expenditure so incurred by 'TERI' shall be deducted from the contractor/bidder pending claims, security/performance guarantee deposit or in other law full manner.
- 11.4 Since the maintenance of the system may also be taken up by the Contractor/Bidder after expiry of five years of warranty period if the end user/'TERI' so desires, the Contractor/ Bidder shall take up annual maintenance of the installed system.

- 11.5 The Contractor/ Bidder shall maintain the system under annual maintenance contract with the end user.
12. Notice statement and other communication send by 'TERI' through registered post or telegram or fax or email to the contractor/bidder at his specified addresses shall be deemed to have been delivered to the contractor/bidder.
13. Any work which is not covered under this contract but is essential required for the completion of job (To the satisfaction of TERI) shall be carried out by the Contractor as extra item or which payment shall be made separately at the rates decided by TERI.
14. The work shall be carried out by the Contractor/ Bidder as per design and drawings approved by 'TERI', wherever, necessary, the contractor/ bidder shall submit relevant designs and drawings for approval of 'TERI', well in advance. Work carried out without TERI's approval shall not be accepted and the 'TERI' shall have right to get it removed and to recover the cost so incurred from the Contractor/Bidder.
15. The Contractor/Bidder shall provide one copy system pass book containing instruction manual/routine maintenance manual and maintenance record of the systems with each unit supplied or installed, this shall be in both English and Hindi language. The draft of passbook shall be approved by TERI.

The following minimum details must be provided with manual:

- (a) About the complete photovoltaic system including PV modules, lithium battery, inverter and electronics
 - (b) Dos and Don'ts
 - (c) Clear instructions on regular maintenance and troubleshooting of the system
 - (d) Name and address of the contact person in case of non-functioning of the system.
16. The Contractor/Bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of 'TERI'. The contractor shall distribute and fix a calendar at site, showing instructions, Dos, Don'ts with each unit. The format of calendar should be approved by TERI.

17. **PATENT RIGHT AND ROYALTIES**

The Contractor/Bidder shall indemnify 'TERI' against all third party claims of infringement of patent, royalty's trademark or industrial design rights arising from use to the goods or any part thereof.

18. **PACKING & FORWARDING**

- 18.1 Contractor/Bidders, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during

rail and road transportation to the site and storage at the site till time of installation. Contractor/Bidder shall be held responsible for all damage due to improper packing.

- 18.2 The contractor/Bidder shall inform 'TERI' of the date of each shipment from his works, and the expected date of arrival at the site at least seven days in advance.

19. **DEMURRAGE**

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

20. **INSURANCE**

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

21. **TRANSPORTATION**

The Contractor/Bidder is required under the contract to deliver the goods to the site. E-way bill to be facilitated and arranged by the bidder.

22. **TERMINATION FOR INSOLVENCY**

'TERI' may at any time terminate the contract by giving written notice to the Contractor/ Bidder without compensation to the Contractor/Bidder, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to 'TERI'.

23. **TERMINATION FOR CONVENIENCE**

'TERI', may by written notice sent to the contractor/bidder, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of 'TERI'.

24. **APPLICABLE LAW**

The contractor/bidder shall be interpreted in accordance with the laws of the purchaser's country i.e., India.

25. **NOTICE**

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

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

26. TAXES DUTIES AND INSURANCE:

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

27. OTHERS:

27.1 I-V curve of the each module technical details, such as Voc, Isc, FF, cell efficiency, and Pmax etc., shall be supplied along-with each consignment and copy should be sent to 'TERI' HQ for records.

27.2 Internal test report and data sheet of all components like Lithium Battery, Inverter, PCU, Electric Motor etc. shall be supplied along-with each consignment and copy should be sent to 'TERI' HQ for records.

27.3. The Contractor/Bidder in consultation with 'TERI' will conduct training programme for users, focusing on main features, operation and maintenance of the systems.

27.4 The Contractor/ Bidder shall continue to provide spare parts after the expiry of warranty period at the users cost till the product life. If the Contractor/Bidder fails to continue to supply spare parts and services to users, 'TERI' shall take appropriate action against the contractor/ bidder.

27.5 After successful supply/commissioning of the system and training, the system will be handed over to the person designated by the TERI.

27.6 It shall be the sole responsibility of the Contractor/Bidder to get verified the quality and quantity of the supplied material at the site of delivery.

28. PAYMENTS:

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

- (a) 60% payment against delivery of material, as per purchase order, on site and subject to submission of documents as proof of delivery.
- (b) 30% payment against (i) deposit of co-funding amount mobilized (@ INR 150,000 per Hybrid Solar Charging Unit) from the weaver beneficiary to TERI and (ii) installation and commissioning of Hybrid Solar Charging Unit at each designated premise with documentary evidence (iii) submission of proof of establishing of service center

- (c) 10% payment after one year from the date of installation, given timely and satisfactory warranty coverage during the elapsed period and on submission of document.
 - (d) Purchase order for on-site warranty for five years will be released separately. The payment for this activity will be released as reimbursement and on half-yearly basis, on submission of documents as proof of execution.
 - (e) All the payment shall be released from TERI head office, New Delhi on submission of requisite documents / cofounding.
29. In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of 'TERI' shall be final.
30. Compliance: All compliances (State /Central/Local /GST/ WCT/ESI/PF/Labour law, etc., is to be met by the Contractor / Bidder) and the same is to be produced by the vendor at the time of payment.

(Signature of Bidder with seal)

PRICE FALL CLAUSE

To,

The Energy and Resources Institute,
Darbari Seth Block,
India Habitat Centre, Lodhi Road
New Delhi -110003

Subject: Price fall clause against Tender No. - TERI/MAT/2019-20/001

Dear Sir / Madam,

With reference to the tender no. TERI/MAT/2019-20/001 dated 24-07-2019, it is hereby confirmed that the price quoted by _____(Name of the Contractor /Bidder) for the supplies of Hybrid Solar Charging Unit for power loom, against this tender is the best possible price we could offer and no further reduction in the price is possible.

It is further confirmed that till the date of submission of this bid, _____(Name of the Contractor / Bidder) has not supplied any Hybrid Solar Charging Unit for power loom with services, having the same specification, as mentioned in the above tender, to any government agency / departments, below the price quoted by it in the tender.

Thanking you,

(Bidder Name with Stamp)

Authorized Signatory

Part -4 : SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

Objective: To provide Hybrid Solar Charging Unit for power looms at approximately 84 sites at Varanasi, Chandauli, Azamgarh etc. in the state of Uttar Pradesh.

Description: The tender is for undertaking the above project of Hybrid Solar Charging Unit for power looms which includes creating awareness among potential beneficiaries, selection of individual weaver as per TERI guidelines, mobilization of agreed (@ INR 1.50 Lakh per Hybrid Solar Charging Unit) co-funding amount, supply, installation, commissioning, and maintenance of the complete system at every selected site and providing comprehensive on-site 5 Years warranty of the installed system during the warranty period. At the end of the warranty period, one year comprehensive Annual Maintenance Contract (AMC) of the installed system would be taken by the contractor / bidder.

Scope of the work: Scope of work under the project is as defined below:

- I. Creating awareness among weaving community members through community mobilization activities.
- II. Procurement, supply and delivery of all components (hardware materials) of Hybrid Solar Charging Unit for power loom at weavers premise
- III. Installation and commissioning of system at every designated site
- IV. Mobilization of INR 1.50 Lakh per Unit (One Lakh fifty thousand) cofounding amount from each weaver beneficiary through cheque / demand draft drawn in favour of TERI, and its onwards transmission to TERI
- V. On-site comprehensive warranty of the complete system (Hybrid Solar Charging Unit for power loom) for 5 (five) years from the date of installation.

Collection of co-funding amount

Once the weaver beneficiary list is identified and hardware of Hybrid Solar Charging Unit is delivered at their premise, process of mobilization of co-funding amount (@ INR 150,000 per system) must be initiated. After collecting the co-funding from weavers, it needs to be deposited with TERI in an organized manner along with the list of beneficiary.

The maximum time schedule for this activity should be 8 (eight) weeks from the date of purchase order.

Delivery

Delivery of materials: All the materials as specified in the purchase order should be delivered at the sites of installation within 6 (six) weeks. Transit insurance and storage insurance till the handing over of all materials will be within the scope of work. The Contractor / Bidder should provide the manufacturer's warranty on all components supplied.

Delivery time for installation and commissioning: Installation should be completed within 8 (eight) weeks from the date of purchase order. The systems will be deemed commissioned only after successful trial run of the system for three (3) days from the date of installations. Warehousing and storage of all components will be in the scope of work till the commissioning of all systems as per the purchase order.

On-site Warranty

The Contractor / Bidder will be responsible for complete on-site warranty of the installed systems for five years from the date of installation including preventive and corrective maintenance services. It is mandatory for the Contractor / Bidder to open an authorized service center at Varanasi, Chandauli, Azamgarh (Uttar Pradesh) before the Bidder qualifies for such work. The scope of work for on-site warranty services will further include the following:

- (a) All preventive maintenance and repair activities associated with Hybrid Solar Charging Unit.
- (b) Contractor / Bidder will create provision for receiving and recording all complaints, attending the complaints, stocking essential spares, provisioning trained service personnel, recording monthly logs of all activities, etc.
- (c) The complaints should be attended to within a maximum timeframe of 7 (seven) calendar days. Monthly log of the complaints received and rectified must be maintained and submitted to TERI on quarterly basis.
- (d) Contractor / bidder shall provide to its service station all normal tools and testing equipment needed for maintenance of the station at its own cost.
- (e) During the 5 (five) year period, the repair works will have to be carried out at the weavers premise except in exceptional circumstances where the equipment or any component may be required to be taken out for repair, for which specific written permission should be obtained from TERI. In such cases, standby arrangements are required to be made by Contractor / Bidder so that the Hybrid Solar Charging Unit remains in functional state. All products have valid product warranty and hence on-site repair and maintenance service needs to be provided after getting replenishment of spares from respective product manufacturer.
- (f) If the Contractor / Bidder fails to attend the complaint within 7 (seven) calendar days, a reasonable penalty of 5 % (five) may be deducted from the pending amount due during that half yearly period.

- (g) If the work of the Contractor/ Bidder is found unsatisfactory or if the Contractor / Bidder dishonors the contract or fails to perform the contract, TERI shall be entitled to terminate the contract and TERI's decision will be final and binding on the vendor. In that case, the payment of last invoice amount will not be done in addition to the above penalty charges and other remedial measures as deemed fit by TERI.
- (h) Contractor / Bidder shall submit the bill along with the verification report counter-signed by TERI representative.

Documents

Following documents need to be submitted to TERI for processing of payments:

A. 1st Payment (60%) :

- (a) Invoice of complete material supplied along with proof of delivery at site (sign and stamp of person who has received and verified the materials)
- (b) Delivery challan(s) & E way bill

B. 2nd Payment (30%):

- (a) Complete list of installation location verified by TERI representative
- (b) Deposit confirmation of the co-funding amount in full, with respect to each Unit
- (c) The warranty certificates for complete system (as per Purchase Order)
 - (i) Complete system warranty certificate from the supplier
 - (ii) Manufacturer warranty card / letter for all components and data sheet for lithium battery, solar module and PCU
 - (iii) All reports should be stamped and signed by the authorized representative of the contractor / bidder
 - (iv) Invoice of installation and commissioning as per purchase order.
- (d) Commissioning and handover certificate (as prescribed), counter- signed by weaver beneficiary ,
- (e) Minimum two (2) photographs (dated) for each premise in soft copy of the Hybrid Solar Charging Unit. Photos should be clear and of minimum postcard size.

C. 3rd Payment (10%):

- (a) One year functionality report duly signed by weaver.

Annual Maintenance Contract half-yearly payment:

- (a) Detailed complaint log of all the complaints received during the period (half-yearly).
- (b) Rectification log of all complaints attended and remedial measures taken (half-yearly).
- (c) Verification report signed by user and TERI representative.

- (d) If the documents are not submitted within the specified stipulated time period, the contract will deem to be completed and the contractor will not have any claim for the payment.

NOTE:

- (a) For the prompt execution of the project, TERI may choose more than one Contractor / Bidder for carrying out the project.
- (b) The selected Contractor / Bidders are mandatorily required to open service centre to carry out on-site warranty services at site before accepting any purchase order.
- (c) Non-tearable Logo (TERI and Indus Towers) pasting has to be done on each Hybrid Solar Charging Unit.

Technical Specifications for Hybrid Solar Charging Unit for Power Loom
 (Each unit supports 4 power looms. Electrical load of each power loom is 1/2 HP AC motor)

Bill of Materials							
ITEMS	Description & Specification						
Solar photo voltaic (SPV) array	Rated Capacity	2 Kwp					
	Type of module	Mono or poly C-Si modules					
	Rating of each module	Each of capacity not less than 250 Wp under STC					
	NOTE	<ul style="list-style-type: none"> The PV modules must conform to the latest edition of any of the following IEC/ equivalent BIS standards for PV module design qualification and type approval: <table border="0"> <tr> <td>Crystalline Silicon Terrestrial PV modules</td> <td>IEC 61215/ IS14286</td> </tr> <tr> <td>Thin Film Terrestrial PV modules</td> <td>IEC 61646</td> </tr> <tr> <td>Concentrator PV Modules & Assemblies</td> <td>IEC 62108</td> </tr> </table> <ul style="list-style-type: none"> In addition, the modules must conform to IEC 61730 Part 1- requirements for construction & Part 2 - requirements for testing and for safety qualification. PV modules to be used in a highly corrosive atmosphere (coastal areas, etc.), therefore must qualify Salt Mist Corrosion Testing as per IEC 61701. The PV modules must be tested and approved by one of the IEC authorized test centers. Test certificates can be from any of the NABL/ BIS Accredited Testing/ 	Crystalline Silicon Terrestrial PV modules	IEC 61215/ IS14286	Thin Film Terrestrial PV modules	IEC 61646	Concentrator PV Modules & Assemblies
Crystalline Silicon Terrestrial PV modules	IEC 61215/ IS14286						
Thin Film Terrestrial PV modules	IEC 61646						
Concentrator PV Modules & Assemblies	IEC 62108						

		<p>Calibration Laboratories.</p> <ul style="list-style-type: none"> • The power output of the solar PV module must be reported under Standard Test Conditions (STC) at loading voltage of 16.4/32.8V. I-V curve of the sample module should be submitted to the TERI at the time of sample submission • The open circuit voltage of the solar PV module under STC should be at least 21.0/42.0 Volts • The terminal box on the module should have provision for opening for replacing the cable if required • The module Junction box should be weather resistant and designed for long life outdoor operation in harsh environment. • Warranty: PV modules must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. • Details of Certified BOM as per above mentioned standards to be provided • IEC CB test report / UL Test report to be submitted for applicable IEC standard
<p>Module mounting structure & RCC array foundation base</p>		<ul style="list-style-type: none"> • The mounting structure shall be of galvanized metallic frame of M.S. Flat/ Angle with corrosion free. • In case of pole-mounted ground based structure, average height of solar panel above the ground level should be 8 feet with proper concrete grouting.
		<ul style="list-style-type: none"> • The tilt angle should be in line with site

		<p>requirements/latitude of the site.</p> <ul style="list-style-type: none"> • All nuts & bolts shall be with anti-theft provisions. • The structure shall be designed to allow easy replacement of any module and shall be in line with site requirements; • The array should be mounted in such a way that cleaning of each panel can be easily done by the concerned person. • The legs assemble of the module mounting structures will be fixed and grouted properly.
Array & Main Junction Box	Type	<p>ABS/ Thermoplastics/Equivalent</p> <p>The size of current collecting terminal having 300V grade insulation for 2 Kwp SPV power plant</p>
	NOTE	<ul style="list-style-type: none"> • Protection: IP 65 (for outdoor)/IP 21(for indoor) • Copper bus bars/terminal blocks housed in the junction box should have suitable termination threads. It should also have earth terminal for earthing.
Power Conditioning Unit (with Charge Controller and Inverter)	Type:	Charge Controlling Unit (2 KWp-48V MPPT) suitable to charge a 6.6 KWh Lithium battery bank from a 2 Kwp SPV array
	NOTE	<ul style="list-style-type: none"> • Protections: short circuit, reverse flow, reverses polarity, over current, over voltage.
	Type and quantity	Certification from IEC/BIS for efficiency, safety and environment :
	Efficiency	Charge controller minimum 92% efficiency and Inverter minimum 90% efficiency (at full load 0.8PF)
	NOTE	<ul style="list-style-type: none"> • Battery charging voltage 56 VDC, • Inverter output frequency: Single Phase 230 V 50 Hz +/- 0.5%. Pure Sine wave inverter rating 5 KW • Overload capacity: 125% for 1 minute and 200% for

		<p>10 seconds</p> <ul style="list-style-type: none"> • Operating Ambient Temperature: 0 to 55 °C • Protections: Short circuit, overload, surge current, over temperature, over/under voltage, over/under frequency, lightning, reactive power imbalance, reverse polarity • Tarser time: 10 mS Typical • Enclosure: Free standing, steel enclosure, IP 20 • Preference will be given to transformer less inverter
	<u>Protections</u>	<ul style="list-style-type: none"> • Both AC and DC lines will have suitable MCB/MCCB and user to allow safe start up and shut down of the system. • input & output isolation (automatic & manual)
	<u>Standards</u>	Power Conditioners/ Inverters should conform to IEC 61683 for efficiency measurements and IEC 60068 2 (6,21,27,30, 75, 78) for environmental testing
Battery bank	Battery rating:	6.6 KWh
	Type:	Lithium Battery
	NOTE	<ul style="list-style-type: none"> • Maximum allowable DOD - 90% • Self-discharge: Less than 3% at 27 °C per month • Cycle life: Minimum 4000 charge-discharge cycle between fully charged state • Connection: In series by means of tinned copper bus of appropriate size. • Certification from IEC/BIS for efficiency, safety and environment
	No. of	One/ Two feeder with MCBs

	outputs:	
	NOTE	<ul style="list-style-type: none"> • Load limiter: As per site. • MCB & fuses: Suitable rating for feeders • MCB/MCCB: Suitable rating for connection & disconnection. • Safety: Audio buzzer and LED indication will be provided in case of overload on any feeder.
	Standards	<ul style="list-style-type: none"> • Lithium battery should confirm IEC 62133-2:2017 / IEC 62660-3:2016 / UL 2054 – Safety requirements. IEC 62660 for performance testing
A C Motor (Quantity 4 Numbers)		<ul style="list-style-type: none"> • AC Single phase Induction motor with power rating 0.5 HP • AC Voltage 180-300 V. Frequency 50 Hz • Must have good cooling capacity to keep their temperatures.
Cables & Accessories	<p>Sizes of cables between array interconnections, array to junction boxes, junction boxes to inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire power plant to the minimum. Cables should be of ISI standard with proper marking on the cable body. Cables must conform to the latest edition of IEC/ equivalent BIS standards</p> <p>The cables and accessories shall conform to the relevant national/ international Electrical Safety Standards. The following sizes of cables are recommended.</p>	
	Module Interconnecting cables 1C x 2.5 sq mm	
	PV array to Junction box : 1C x 4 sq. mm PVC insulated, sheathed, Terminals. Unarmored, copper	
	Junction box to PCU 1C x 10 sq. mm PVC insulated, sheathed, Junction box unarmored, copper, black cable	
	Inverter to ACDB: 2C x 10 sq. mm PVC insulated, sheathed, Terminals. Unarmored, copper,	
	Working voltage: Up to 1100 V; Test voltage -1000V/1.1kV	

	Temperature resistant: -15 °C to +70 °C; UV resistant for outdoor installation	
	Standards	<ul style="list-style-type: none"> • Cables : IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)
Earthing systems		<ul style="list-style-type: none"> • The array structure of the PV yard will be grounded properly using adequate number of earthing kits. All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant. • Earthing for all major equipment's and the power plant with 600 mm x 600 mm x 6 mm copper plate electrode. The Junction boxes should be equipped with input and output fuses to protect the PV module from short circuits. Array and Main JB's should have appropriate surge protection devices to protect the circuits from surges created due to lightning. Separate earthing system is required for inverter as well. • Providing & fixing of earth bus with 25 mm x 6 mm tinned copper strip on wall having clearance of 6 mm from wall including providing drilled holes on bus bar complete with GI bolts, nuts, washers, spacing insulators etc. as required. • Connecting, providing & fixing 25 mm x 6 mm tinned copper strip from earth electrode to earth bus bar complete as required. • Complete earthing System for array made with GI pipe, 4.5 m long 40 mm diameter including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance. • Supplying, fitting & fixing of earth bus in the Control Room & Battery Room with 25 mm x 5 mm tinned copper strip on suitable size porcelain base at a regular interval firmly fixed on wall surface including interconnection with Plate Earthing System for earthing

		of all Metallic Bodies.
Installation Accessories		As per site requirement
Product Warranty	PP items	Solar PV for 25years, lithium battery for 5 years, PCU for 5 years, and other components/items 5 years.
On-site service warranty		<p>It shall include on-site servicing & replacement guarantee for parts and components (such as battery, electronics, charge controller and PV modules) for 5 years from the date of installation.</p> <ul style="list-style-type: none"> • All preventive maintenance and repair activities associated with the power plant. • The on-site warranty would cover services provided including the quality of workmanship under warranty. • Providing the maintenance service under the project to keep the station in good working conditions which shall also include the periodical, corrective, and remedial maintenance service. • Periodical preventive maintenance services need to be provided at regular intervals. At least one preventive maintenance visit needs to be undertaken every six months and half-yearly report to be submitted. • The complaints should be attended to within a maximum timeframe of 7 calendar days. • Providing all normal tools and testing equipment's needed for maintenance of the station at its own cost. • During the ensuing period, the repair works will have to be carried out at the location of the station except in exceptional circumstances where the equipment or any component may be required to be taken out for repair, for which specific written permission should be obtained from TERI. In such cases, standby arrangements are required to be made by vendor so that the system remains in functional state. All products have valid product warranty and hence on site repair

		<p>and maintenance service needs to be provided after getting replenishment of spares from respective product manufacturer.</p> <ul style="list-style-type: none"> • The payment towards the on-site warranty charges would be made on half yearly basis at the end of every six months on reimbursement basis. • If the contractor / bidder fail to attend the complaint within 7 (seven) calendar days, a penalty of 5% may be deducted from the gross amount of half yearly bill. An additional 10% penalty may be deducted for every week the complaint remains unattended / unrectified beyond the first week. • If the work of the contractor / bidder is found unsatisfactory or if the vendor dishonours the contract, TERI shall be entitled to terminate the contract and TERI's decision will be final and binding on the contract. In that case, the payment of last invoice amount will not be made. • Contractor / bidder shall submit the bill along with the verification report of the local authority.
Training		<ul style="list-style-type: none"> • One training need to be provided; preferably one at the time of installation & commissioning. • Training materials to be provided to the trainees need to be approved by TERI.
Safety Precautions		<ul style="list-style-type: none"> • Tamper-proof seals to be provided for all equipment. • International safety regulations need to be followed and the same need to be shared with TERI.

The BoS items/components of the Hybrid Solar Charging Unit for power loom deployed must confirm to the latest edition of IEC/equivalent BIS standards.

Part 5 : DETAILS of WARRANTY AND MAINTENANCE

- The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 10 years and 80% at the end of 25 years).
- The mechanical structures, electrical components including battery and overall workmanship of the Hybrid Solar Charging Unit must be warranted for a minimum of five years from the date of commissioning and handing over of the system.
- The Comprehensive Maintenance (within warranty period) shall be executed by the firm themselves or through the authorized dealer/ service center of the firm in the concerned district. It is mandatory for the contractor/ bidder to open an authorized service center in the concerned district before the supply/installation of the system.
- Necessary maintenance spares for five years trouble free operation shall also be supplied with the system.
- The contractor/ bidder shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become dysfunctional within one month of issue of any such complaint by the purchaser.
- The service personnel of the Successful Bidder will make routine quarterly maintenance visits.
- The maintenance shall include thorough testing and replacement of any damaged parts Apart from this any complaint registered/ service calls received / faults notified in the report should be attended to and the system should be repaired/ restored/ replaced within seven days.
- A separate Service and Maintenance manual shall be maintained with each system as per the format provided by TERI. The deputed personnel shall be in a position to check and test all the components regularly, so that preventive actions, if any, could be taken well in advance to save any equipment from damage. Any abnormal behaviour of any component shall be brought to the notice of TERI for appropriate action.
- Normal and preventive maintenance of the Hybrid Solar Charging Unit such as cleaning of module surface, topping up of batteries, tightening of all electrical connections, cleaning and greasing of battery terminals, also the duties of the deputed personnel during half-yearly maintenance visits.
- During operation and maintenance period of the Hybrid Solar Charging Unit, if there is any loss or damage of any component due to miss management/miss handling or due to any other reasons pertaining to the deputed personnel, whatsoever, the supplier shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component.
- Contractor/Bidder shall submit verified quarterly maintenance report regularly to TERI within 15 days of period ending six months. Failing which payment for such period will not be released or recommended.

Part 6: TECHNICAL BID

For Hybrid Solar Charging Unit for power loom

TENDER NO.: TERI/MAT/2019-20/001

Sl. No.	Description	To be Furnished by the Tenderer
A	Solar PV Module	
1	Type of Module	
2	Make	
3	Availability of RFID tag	
4	Capacity of solar module in Watt at STC	
5	Conversion efficiency	
6	No of cells per module	
7	Solar module efficiency (%)	
8	Solar module frame material	
9	Module dimension	
10	Module weight	
11	Certificate of testing conforming to IEC 61215 Edition II / BIS 14286 and other certificate	
B	Battery	
1	Make	
2	Type / Chemistry / Minimum life cycle	
3	Capacity of battery in terms of KWh	
4	Self-Discharge	
5	DOD	
6	Design cycle life of battery	
7	Charge efficiency	
8	Dimensions and weight of battery	
9	Test certificate available (IEC Standards / NABL accredited labs / BIS Standards)	
C	Power Conditioning Unit	
1	Make	
2	Type of charge controller	
3	Efficiency of charge controller	
4	Inverter- capacity & efficiency	
5	Power transfer time from multiple power source	
6	Test certificate available (IEC Standards / NABL Accredited labs / BIS Standards)	
D	Module Mounting Structure	
1	Type of structure	
2	Material of structure	
3	Thickness of structure	
4	Wind speed carrying capacity	
E	AC Motor (4 Nos)	
1	Type of Motor and make	
2	Capacity of motor (HP)	

3	Operating voltage and frequency	
4	Efficiency of motor	
F	Lighting Arrestor	
1.	Type of Lighting Arrestor and make	
2	Type of Earthing	
G	Earthing	
1	Type of Earthing, make and capacity	
2	No of earthing	
H	Connecting cables/wire	
1	Material and size	
2	Details of Switches	

(Signature of Bidder with seal)

PART-II

FINANCIAL BID

TENDER NO.: TERI/MAT/2019-20/001

Name of the Firm: -----

Implementation (Weaver identification, cofounding mobilization, supply, installation and maintenance) of approximately 84 Hybrid Solar Charging Unit for power loom in the state of Uttar Pradesh at Varanasi, Chandauli, Azamgarh etc.

Sl. No.	Item	Unit Rate (in INR)
1	Supply of Hybrid Solar Charging Unit at proposed sites with comprehensive warranty for 5 years	
2	Installation and commissioning	
3	Comprehensive maintenance charges for five years	
4	GST for Sl 1	
5	GST for Sl 2	
6	GST for Sl 3	
7	Total GST	
	Net Amount (INR)	
Total Amount (in figures and words)		

NOTES:

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

(Signature of Bidder with seal)

To be submitted only in Part-II in financial bid.

Other documents / conditions, terms if enclosed may lead to rejection of bid.