

Bharat Heavy Electricals Ltd
Electronics Division
Mysore Road, Bangalore – 560 026

Tender document for

Seasonal Tilting of Solar Photovoltaic Tables and Grass Cutting works at 1 MW canal top SPV project at Gollavanitippa, Bhimavaram, West Godavari District, Andhra Pradesh for 9 years.

Due date and time for tender document submission: 06th March-2017 before 2:30 PM

This tender document contains following documents

- (a) Annexure-1:
Technical bid (Part-I) and Price-bid (part-II)
(Part-I: Three pages, Part-II: One page)
- (b) Annexure-2:
Instructions to Tenderer (4 pages)
- (c) BHEL specification PS-439-1106 Rev 00 (9 pages)
- (d) EFT form (1 page)

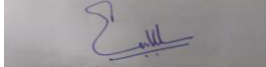
Documents to be submitted along with tender:

- 1) Offer shall be submitted in two parts: Part-I and Part-II as below:
- 2) Part-I shall contain following documents:
 - a) Filled-up Part-I technical-cum-commercial bid (Two pages in this document.)
 - b) Financial details and completion certificates for similar works in the past.
 - c) Infrastructure facilities and manpower details
- 3) Part-II is price bid, which shall contain filled up prices.
- 4) Part-I and Part-II shall be submitted in separate sealed covers.
- 5) Part-I & Part-II sealed covers should be put in an outer envelope, super scribing the name of work and name & address of the tenderer.

Note:

The tender document shall be addressed to AGM/SC&PV- Marketing & Commercial, BHEL, Electronics Division, Mysore road, Bangalore 560 026.

CONTRACTOR (Signature with seal)



भारत भारी बिजली, इलेक्ट्रॉनिक्स व वाणिज्यिक विभाग
ए.जी.एम./एस.एंड.पी.वी.- बाजार, आर.ए.डी. (मि.टी.)
सि.डी.ए.डी. बाजार, आर.ए.डी. (मि.टी.)
बि.ए.डी.डी. मयसूर रोड, बंगलूर - 560 026

EMPLOYER (Signature with seal)



Annexure-1

Bharat Heavy Electricals Limited, Electronics Division, Mysore Road, Bangalore 560026

Tender Enquiry No: EDN:SCPV:NREDCAP:BVRM:01

PART-I TECHNICAL BID

- 01. NAME OF THE WORK :
Seasonal Tilting of Solar Photovoltaic Tables and Grass Cutting works at 1 MW canal top SPV project at Gollavanitippa, Bhimavaram, West Godavari District, Andhra Pradesh for 9 years as per specification PS-439-1016.
- 02. APPROXIMATE ESTT COST: **Rs 18 Lakhs** (Rupees eighteen lakhs, for the total scope of the works)
- 03. STIPULATED PERIOD: Work shall commence immediately after receipt of work order. All project activities are scheduled to be completed as per schedule given in Table-1 of specification PS-439-1106.
- 04. PAYMENT TERMS:
 - i) 95% along with 100% of applicable taxes & duties on completion on pro-rata quarterly basis within 60 days of submission of vendor invoices with all supporting documents as mentioned below and site certification.
 - ii) 5% on completion of each year O&M within 30 days of submission of vendor invoices with site certification and end client certification.
 - iii) Payment/ invoice for part work completion will not be entertained.
 Supporting Documents:
 - a) Muster & Attendance records of Technicians/labor engaged certified by BHEL site engineer.
 - b) ESI & PF statement for payments towards Technicians/labor engaged certified by BHEL site engineer.
 - c) Salary paid certificate/evidence
 - d) Labor License copy certified by BHEL site engineer.
 - e) Work Completion certificate from Site engineer of BHEL.

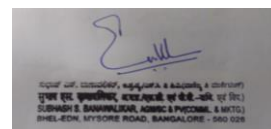
05. NAME OF CONTRACTOR :

06. ADDRESS :

(A) OFFICE :

TEL.PH NO :

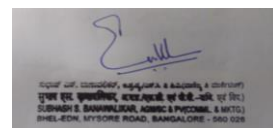
CONTRACTOR (Signature with seal)



EMPLOYER (Signature with seal)

- (B) RESIDENTIAL :
-
-
- TEL.PH NO :
07. QUALIFICATION :
08. STAFF STRENGTH
- (A) TECHNICAL :
- (B) GENERAL :
09. (A) No: of TECHNICIANS deploying at site :
- (B) No: of LABORS deploying at site :
10. a) GRASS CUTTING & DEWEEDING : YES/ NO
 Scope of work is understood and confirmed for execution as per schedule given in specification for next 9 years
- b) Module Tilting : YES/ NO
 Scope of work is understood and confirmed for execution as per schedule given in specification for next 9 years
- c) Procedure for module tilt understood and confirmed that if there is any loss or damage of any components of the power plant, the contractor shall be responsible for immediate replacement / rectification/ bear the replacement cost : YES/ NO
11. WHETHER REGISTERED WITH GOVT. AGENCIES SUCH AS CPWD/STATE PWD/MES/RAILWAY/ OTHER PUBLIC SECTOR UNDERTAKING ETC. : YES/ NO
12. WHETHER GOVERNMENT LICENSED CONTRACTOR FOR CIVIL AND MECHANICAL INSTALLATION WORKS: YES/ NO (if yes, copy to be enclosed)
13. EXPERIENCE IN SUCCESSFULLY COMPLETED SIMILAR WORKS OF MINIMUM Rs 19 lakhs in ANDHRA PRADESH or ODISHA TELANGANA or KARNATAKA or TAMIL NADU (Copy of completion certificate to be enclosed) : YES/ NO
14. Whether Rates have been quoted taken into Consideration of Minimum wages Act : YES/ NO

CONTRACTOR (Signature with seal)

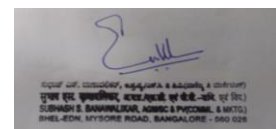


EMPLOYER (Signature with seal)



15. Annual Turnover greater or equal to Rs 50 lakhs. : YES/ NO
(Copy of IT returns for last three years, Statement of Company Accounts and balance sheet duly certified by third party CA to be enclosed)
16. EMD PARTICULARS : Not Applicable
17. ACCEPTANCE OF specification PS-439-1106 : YES/ NO
18. BHEL PAYMENT TERMS : WHETHER ACCEPTABLE / NOT
19. COPY OF PAN CARD ENCLOSED : YES/ NO
20. COPY OF BANK BLANK CHEQUE ENCLOSED : YES/ NO

CONTRACTOR (Signature with seal)



EMPLOYER (Signature with seal)

Part-II: Price Bid

Period	Activity	Cost of Activity in Rs.
March'17 - Nov'17	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'18 - Nov'18	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'19 - Nov'19	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'20 - Nov'20	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'21 - Nov'21	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'22 - Nov'22	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'23 - Nov'23	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'24 - Nov'24	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
March'25 - Nov'25	Grass cutting for 4 times a year	
	Module Tilting for 2 times a year	
	Grand Total excluding of Taxes	

Total Cost excluding taxes in words:

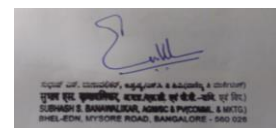
Applicable Taxes, corresponding Rate & Value:

Total Cost inclusive of taxes (in figures): Rs

Total Cost including taxes in words:

The Prices quoted above are all inclusive and shall remain FIRM for entire duration of Contract and completion of entire works by contractor.

CONTRACTOR (Signature with seal)



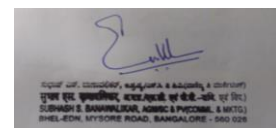
EMPLOYER (Signature with seal)

Annexure-2

INSTRUCTIONS TO TENDERER

1. Sealed Tender for the above noted work is hereby invited.
2. Tenders should be addressed to the AGM/SC&PV-Marketing & Commercial., Electronics Division, Bharat Heavy Electricals Limited, Mysore road, Bangalore – 560 026, super scribing the Name of Work and Name and Address of the Tenderer.
3. The local address of the Contractors, the name of the person to whom all the correspondence are to be addressed should be indicated, with telephone number (both office and residence).
4. All entries in tender documents should be in one ink. Eraser and over writing are not permitted. All cancellation and insertion should be duly signed by tenderer concerned with proper indication of the name designation and address of the person signing.
5. Tenderers shall fill in all the required particular in the blank space provided for this purpose in the tender documents and also sign in each and every page of the tender document including the drawings attached there to before submitting tender.
6. In case the rate quoted in figures differs from those quoted in words, the lower of the rates will be taken as the tendered rate and shall be binding on the tenderer.
7. In quoting rates, the tenderer are advised to take into account all factors including any fluctuations in market rates. No claim for enhanced rates will be entertained on this account after acceptance of the tender or during the currency of the contract.
8. The rate to be quoted by the tenderer shall be firm and shall cover and include all statutory levies such as “Service tax etc., arising from Act passed by Parliament or State Legislature and rules framed there –under. Any variation in rates of taxes and duties as quoted by Bidder in Annexure1 Part-II: Price Bid on account of statutory variation or any new taxes and/ or duties levied on account of new laws and regulations imposed by Government shall be reimbursed by Employer against specific claims by contractor and any such variation shall be reimbursed at end of each year of work executed.
9. The rate quoted in the tender shall remain valid for a period of ONE MONTH from the date of opening tender. Tenderer shall not increase their quoted rates, once the tenderer has submitted his quotation and during execution of contract in case his tender is accepted.
10. The tenderer should specially note that it is tenderer’s responsibility to provide any accessory items which is not specifically mentioned in the specification, but which is necessary to complete the work.

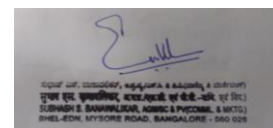
CONTRACTOR (Signature with seal)



EMPLOYER (Signature with seal)

12. Should a tenderer find discrepancies or omission in the scope of work or should be in doubt as to their meaning he should at once address to the authority inviting the tender for clarifications. Every endeavor is made to avoid any error which can materially affect the basis of the tender but successful tenderer shall take upon himself to provide for the risk of any error which may be subsequently discovered and shall make no subsequent claim on account thereof.
13. If in any case, the date of Tender Opening falls on holiday, the Tender will be opened on the next working day.
14. If after opening of tenders a tenderer revokes his tender or increase his earlier quoted rates or after acceptance of his tender does not commence the work in accordance with the instruction of Engineer –in-charge, the work order shall be cancelled forfeited will be based on value of the contract so awarded and the tenderer is liable to be black listed or put on BHEL holiday list.
15. BHARAT HEAVY ELECTRICALS LIMITED reserve the right to reject any or all the tenders received or accept any tender or part thereof without assigning reason thereof. In the case of acceptance of a part of tender, the time for completion may also be reduced to the extent considered approximately by the accepting authority.
16. Conditional and Unsigned tenders, tender containing absurd rates and amounts, tenderer which are incomplete or otherwise considered defective, tenders which are not in accordance with the tender conditions laid down by the accepting officer and tenders not submitted in the prescribed forms are liable to be rejected.
17. Tenders received after the due date of opening tenders are liable to be rejected.
18. The Contractors responsibility under this contract shall commence from date of receipt of the order or acceptance of tender.
19. If tenderer expires after the submission of the tender or acceptance of his tender, the BHEL, may at their discretion cancel such tender.
If a partner of a firm expires after the submission the tender, after the acceptance of tender, BHEL, may cancel such tenders at their discretion unless the firm retains its character/s.
20. BHARAT HEAVY ELECTRICALS LIMITED will not be bound by any power of Attorney granted by the tenderer or changes in the composition firm made subsequent to execution of contract. They may however recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor concerned.
21. If the tenderer deliberately gives wrong information on his tender, the BHEL reserves the right to reject such tender at any stage.
22. Words imparting the singular number shall also be deemed to include the plural number and vice-versa where the context so require.
23. Any covering letter and comments of the Contractor should be submitted in duplicate along with the offer.

CONTRACTOR (Signature with seal)



EMPLOYER (Signature with seal)

FORM OF TENDER

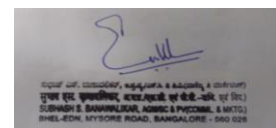
Having examined the invitation to bid, Instructions to Tenderer, specifications tender schedule and other documents for the above work, we the undersigned, offer to complete the whole of the said work in conformity with the said bid documents on the terms and conditions and under the provisions set out or called for in the contract documents at the rates listed in the schedule of unit prices or else wherein the contract documents.


We undertake if our bid is accepted, to commence the works from the date of issue of award and to complete and delivery the whole of the works comprised in the contract as per the time schedule agreed to the contract document.

We agree to abide by this bid for the period of three months from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before expiry of the period.

Until and unless a formal agreement is prepared and executed this bid, together with your award thereof shall constitute a binding contract between us.

CONTRACTOR (Signature with seal)

A rectangular stamp containing a handwritten signature in blue ink. Below the signature, there is a block of text in Hindi and English. The text includes the name of the organization, 'S. SHANMUKH & SONS', and their address: 'S. SHANMUKH & SONS, 10/11, 12/13, 14/15, 16/17, 18/19, 20/21, 22/23, 24/25, 26/27, 28/29, 30/31, 32/33, 34/35, 36/37, 38/39, 40/41, 42/43, 44/45, 46/47, 48/49, 50/51, 52/53, 54/55, 56/57, 58/59, 60/61, 62/63, 64/65, 66/67, 68/69, 70/71, 72/73, 74/75, 76/77, 78/79, 80/81, 82/83, 84/85, 86/87, 88/89, 90/91, 92/93, 94/95, 96/97, 98/99, 100/101, 102/103, 104/105, 106/107, 108/109, 110/111, 112/113, 114/115, 116/117, 118/119, 120/121, 122/123, 124/125, 126/127, 128/129, 130/131, 132/133, 134/135, 136/137, 138/139, 140/141, 142/143, 144/145, 146/147, 148/149, 150/151, 152/153, 154/155, 156/157, 158/159, 160/161, 162/163, 164/165, 166/167, 168/169, 170/171, 172/173, 174/175, 176/177, 178/179, 180/181, 182/183, 184/185, 186/187, 188/189, 190/191, 192/193, 194/195, 196/197, 198/199, 200/201, 202/203, 204/205, 206/207, 208/209, 210/211, 212/213, 214/215, 216/217, 218/219, 220/221, 222/223, 224/225, 226/227, 228/229, 230/231, 232/233, 234/235, 236/237, 238/239, 240/241, 242/243, 244/245, 246/247, 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Technical Specification for Seasonal Tilting of Solar Photovoltaic Module
tables and Grass Cutting works at 1 MW Canal Top Solar PV plant at
Gollavantippa, Bhimavaram, West Godavari District, Andhra Pradesh for 9
years.

Revision details :R 00	Prepared NY	Approved PM	Date 11.01.2017
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1.0 Introduction

Bharat Heavy Electricals Limited (BHEL), Electronics Division, Bangalore has set up a 1 MW Grid connected Solar Photovoltaic power Plant on top of a Canal in Bhimavaram, AP. Overall length of the canal on which solar PV modules are mounted is approximately 600m on either side of the Control room. The site location is 6 Kms from Bhimavaram Town. This tender is for Module Tilting and Grass Cutting works with regular periodicity for a period of nine years from the date of issue of work order.

1.1 PLANT DESCRIPTION

Canal top solar plant has 280 triangular built up purlins spanning across the canal, on each of which 12 solar PV modules are mounted as shown in Fig-1. Each of the purlin with solar modules is tiltable to 5° & 25° position with respect to horizontal using a jacking screw & nut mechanism as shown in Fig-2. This tilting operations can be easily done by four persons, two on either side of the canal.

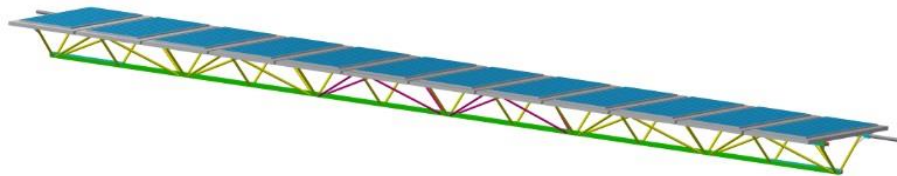
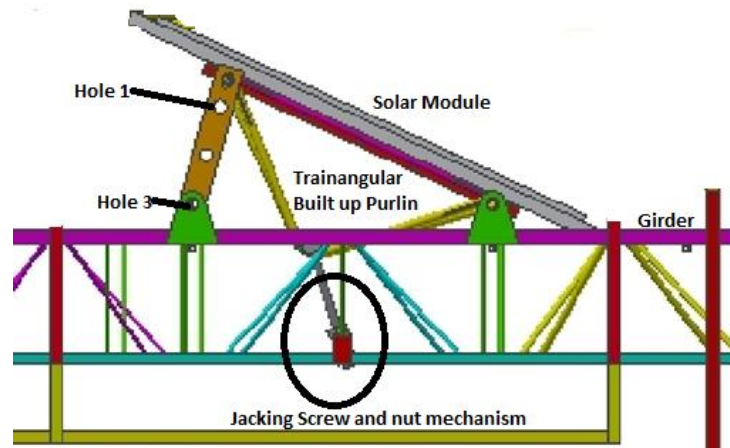


Fig-1: Schematic representation of 12 No. of Modules mounting on a purlin



Hole 1 in link plate corresponding to 5° module position and Hole 3 corresponds to 25° module position.

Fig-2: Representation of Jacking Screw mechanism

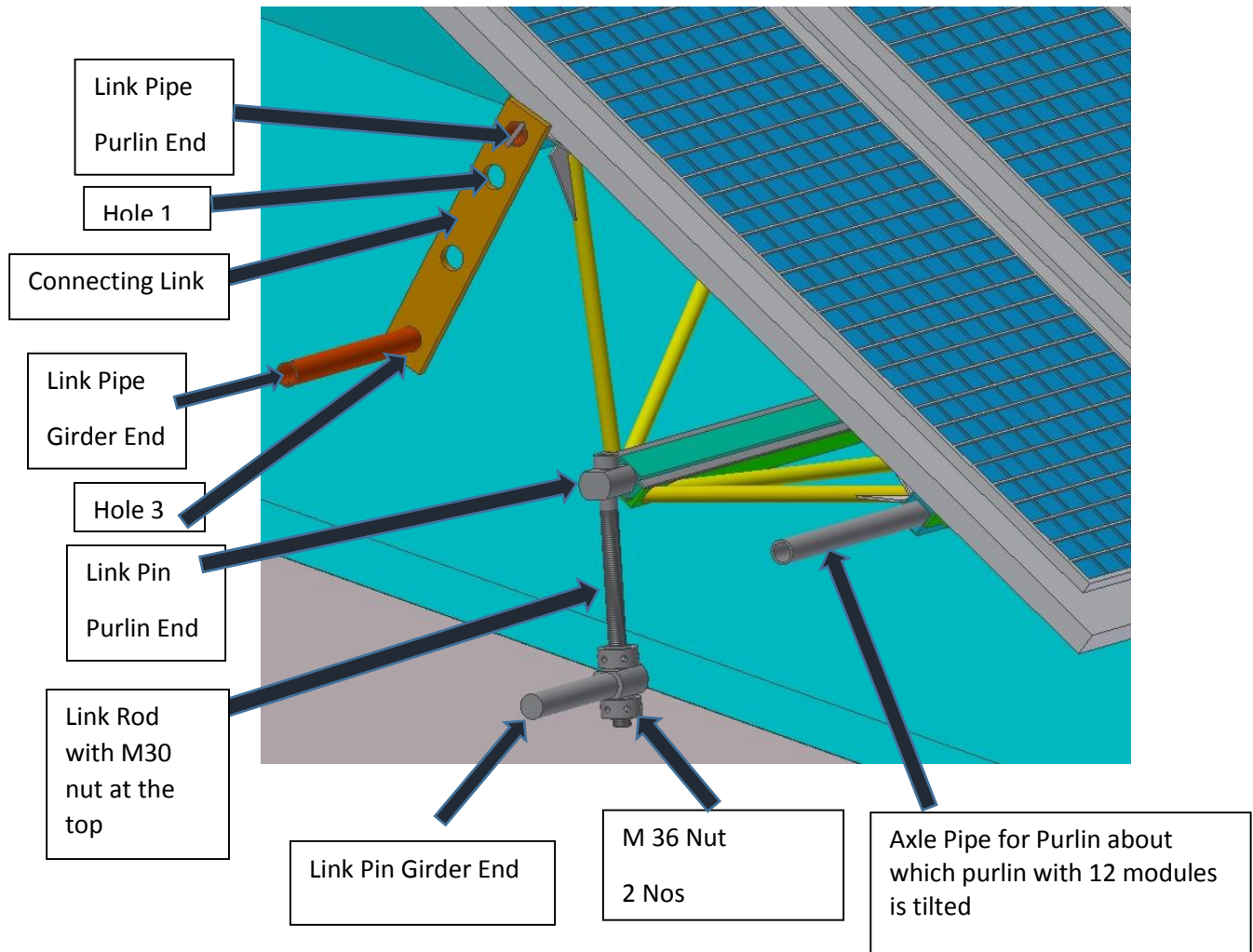


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Hole 1 in link plate corresponding to 5 ° module position and Hole 3 corresponds to 25 ° module position.

Fig 3: Various Accessories showing the arrangement of mounting of purlin



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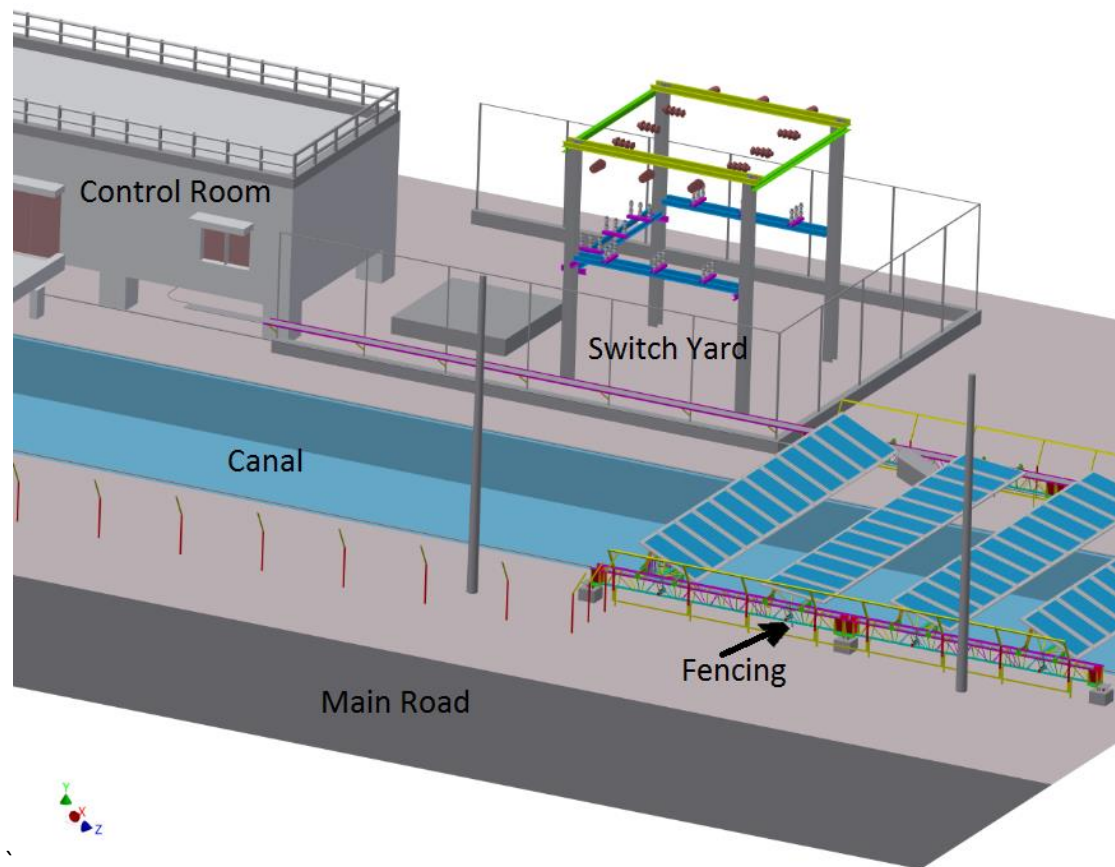



Fig-4: Schematic representation of part of Solar Power Plant.

3.0 Scope of work.

All prospective vendors are advised to visit the site for better understanding of the scope. The contractor has to organize grass cutting and module tilting by engaging suitable technicians/labor with minimum of 4 people as per the schedule given in the table-1.

3.1 Scope of Grass Cutting & Deweeding:

2.5 mts width of canal bank on either side of the canal for the entire stretch of solar plant (approximate area is 6000 sq.mts) and an area of 224 sq.mts as shown in the Fig-6 should be free of any grass, weeds, and plants. A schematic representation of canal bank are given in Fig-5 and 7. Contractor has to deploy people for removing the grass, weeds and plants at root level. Creepers which climb on the fencing have to be removed suitably. After cutting the grass, herbicide is to be sprayed to arrest the growth of grass. Contractor has to supply required amount of herbicide. Required tools/items should also to be arranged by contractor only. All the grass, weeds and plants collected has to be transferred to garbage at site. Care should be taken not to leak or drop herbicide in canal water.

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Schedule of various Activities in a Calendar Year			
Start Date	End Date	Description of Activity	Minimum No: of people
16 th March	30 th March	Grass Cutting and Herbicide Spraying	4
16 th March	30 th March	Tilting of 280 purlins from 25° to 5°	8
16 th July	30 th July	Grass Cutting and Herbicide Spraying	4
16 th September	30 th September	Grass Cutting and Herbicide Spraying	4
16 th September	30 th September	Tilting of 280 purlins from 5° to 25°	8
16 th November	30 th November	Grass Cutting and Herbicide Spraying	4

Table:-1: Schedule of various activities

3.2 Scope for tilting of modules.

Modules are to be tilted for two angles i.e. for 5 and 25 degrees. Before tilting of modules, the contractor has to follow below steps.

A) At rusted areas

1. Apply Rustolin/Kerosene to loosen the nuts and also to remove rust on exposed area of rod and keep it for some time for drying.
2. Clean the area with cotton waste and other solvents as required for cold zinc spray on the rusted area of link rod and apply cold zinc spray.
3. Apply grease on threaded portion and tilt the modules as per procedure given in 3.2.1.
4. On the rusted areas of link rods which have come out of the link pin/ got exposed after tilting, the rust is to be removed and cold zinc is to be applied. Grease is then to be applied.

B) At other areas

Grease has to be applied on all link rods and nuts for smooth movement during tilting.

3.2.1 Procedure for tilting the modules

Steps for increasing the angle from 5 degrees to 25 degrees:

1. Remove the link pin girder end and then link pipe girder end.
2. Rotate the upper M36 nut in clockwise looking from top.
3. Axle pipe for purlin act as fulcrum and the link rod will be pulled up and it tilts the purlin
4. Rotate the nut till the bottom hole of connecting link is in line with the hole given in the girder.
5. Insert the link pipe girder end and insert the link pin girder end.

Steps for decreasing the angle from 25 degrees to 5 degrees:

1. Remove the link pin girder end and then link pipe girder end.
2. Rotate the lower M36 nut in clockwise looking from bottom.
3. Axle pipe for purlin act as fulcrum and the link rod will be pulled down and it tilts the purlin
4. Rotate the nut till the second hole from top of connecting link is in line with the hole given in the girder.
5. Insert the link pipe girder end and insert the link pin girder end.



Fig-5: Site during installation stage

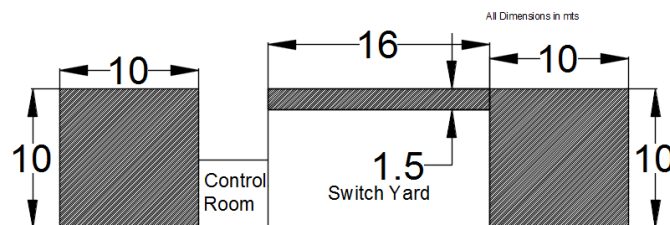


Fig -6: Further Area to be grass cut (224 sq mts.)

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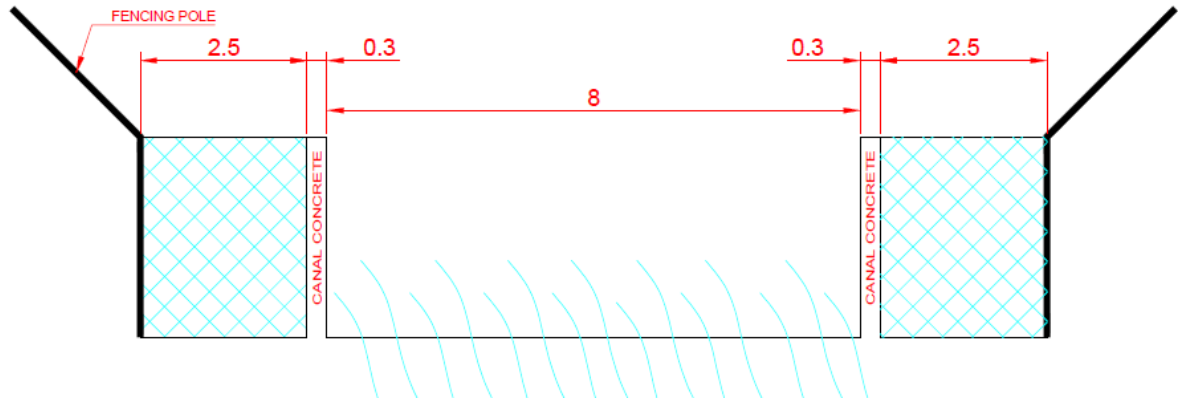



Fig-7: Cross Sectional View of the Canal at plant.

In case contractor cannot tilt the module tables for any reason like jamming, rusting etc., the same shall be brought to notice of Employer immediately and contractor shall follow Employer's Engineer-in-charges' instruction. Under no circumstances the module table titling shall be left unattended to.

4.0 Pre-Qualification Criterion (PQC):

- 1) Bidder shall be a licenced contractor for civil and mechanical installation allied works with a valid license to engage labour. Documentary evidence shall be submitted
- 2) Bidder shall have financial capacity to carry out such works by engaging labour and technicians. Only bidders whose annual financial turnover is greater or equal to 50 lakh per annum are eligible to participate.
- 3) Bidder shall have PAN and PAN –linked Bank account number and shall furnish the following along with the bids.
 - a) Copy of PAN card
 - b) Copy of Bank Blank cheque –cancelled
 - c) Copy of IT returns for the last 3 years
 - d) Statement of Company Accounts and balance sheet duly certified by a third party chartered accountant.

Bids who do not comply with above PQC requirements will be summarily rejected without further correspondence.

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4) Bidden should have carried out similar works of minimum equivalent estimated cost in the surrounding region or any region within Andhra Pradesh or Telangana or Karnataka or Tamil Nadu or Odisha. Proof for the same should be submitted.


5.0 Instructions:

- All personal protective equipment (PPE) like safety shoes, Helmets, hand gloves etc. that will be relevant to ensure human safety should be provided to deployed people.
- Contractor shall ensure statutory requirements such as ESI, PF and labor license for their personnel deputed as per norms
- Personnel at site shall conform to general regulations in force at site and to any special instructions from BHEL's customer.
- Contractor shall ensure that at least one supervisor shall be present at site when works are carried out
 - To take care of any exigencies which may lead to delay in completion of works
 - To discuss with BHEL representative at site as and when need arises for such discussions.
- Personnel at site shall be deemed to be aware of damages and risks incidental to conditions of site land and works from time to time and BHEL shall not be responsible for any injury to personnel arising there from.
- If there is any loss or damage of any components of the power plant due to mis-management/ mishandling, the contractor shall be responsible for immediate replacement / rectification.
- The work should strictly conform to this specification. In case, work is not completed as per our scope due to reasons arising out of materials from our end/your end, contractor has to complete the job at later stage without any extra charges. No overrun charges shall be paid in case of extension of work Schedules. Any miscellaneous materials required for completion of the project shall be organized by the vendor without any extra charges.

6.0 Instructions on bid submission

Offer shall be submitted in two-parts (Two part-bid). Both parts shall be in separate sealed envelopes as per instructions in tender. The individual envelopes shall be enclosed in a common bigger envelope with markings on the envelope (address, etc) as per instructions provided in tender.

- First-part shall be Technical bid. Following details shall be furnished:
 - Technical offer covering letter.
 - Filled-up enclosures as per BHEL tender formats (for first-part technical bid).
 - Separate clause-wise deviation sheet in case of deviations from BHEL spec.

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- Second-part shall be Price bid with filled up enclosures as per BHEL tender format.

Evaluation of Bidder price shall be on “Total cost to BHEL” basis including all applicable taxes & duties as indicated in Annexure-1 , Part-II Price bid.

In addition to the above instructions, tender document provides detailed instructions for bid submission. Vendor shall submit the bid based on such tender instructions.

**Electronic Funds Transfer (EFT) OR
Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): _____ CREATE _____ CHANGE

BHEL Vendor / Supplier Code:	
Company Name :	
Permanent Account Number(PAN):	
Address	

City: _____ PINCODE _____ STATE _____

Contact Person(s)	
Telephone No:	
Fax No:	
e-mail id:	

1 Bank Name:	
2 Bank Address:	
3 Bank Telephone No:	
4 Bank Account No:	
5 Account Type: Savings/Cash Credit	
6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank	
7 Bank swift Code(applicable for EFT only)	
8 Bank IFSC code(applicable for RTGS)	
9 Bank IFSC code(applicable for NEFT)	

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN, Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Telephone NO. with STD Code

Company Seal

Bank Certificate

We certify that _____ has an Account No _____ with us and we confirm that the bank details given above are correct as per our records.

Date:

(.....)

Place:

Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

In case of any Query, please call : 080-26998xxx / 2674xxxx or fax no. 080-2674xxxx