

# Bharat Heavy Electricals Limited

(High Pressure Boiler Plant) Tiruchirappalli – 620014,

TAMIL NADU, INDIA An ISO 9001

CAPITAL PURCHASE / MATERIALS MANAGEMENT / MFG

## ENQUIRY – Corrigendum 1

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Web : [www.bhel.com](http://www.bhel.com) / [www.tenders.gov.in](http://www.tenders.gov.in)

**NIT\_20004**

Enquiry Number:  
2681400029

Enquiry Date:  
21.10.14

Extended Due date for  
submission of quotation  
: 27.11.14

You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order

**ITEM DESCRIPTION: Solar Street Lighting System in villages of Tiruchirapalli District**

### Details of Corrigendum

The tender specifications & Tender due date have been changed.

Detail of the revised Tender specifications as per Annexure-I (Rev 01) & Annexure-B\_rev01 and the same has been attached.

Tender due date has been extended to 27.11.14. All other terms and conditions as published in the NIT\_20004 remain unaltered

Confirmation of acceptance for BHEL commercial terms & conditions and Price Bid formats have been posted in BHEL Corporate web site [www.bhel.com](http://www.bhel.com) or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "2681400029".

Tenders should reach us before 14:00 hours on the due date  
Tenders will be opened at 14:30 hours on the due date  
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,  
For BHARAT HEAVY ELECTRICALS  
LIMITED

  
Sr. Manager / MM / Capital Purchase

**P.G. BRAHMACHARI**  
Senior Manager  
Purchase / MM / MFG  
BHEL, TRICHY - 620 014.

**Pre-Qualification terms for LED Solar Street Light System**

**Rev.01**

<b>BASIC QUALIFICATION</b>	<b>BIDDER CONFIRMATION</b>
Use of BHEL make PV Modules in the solar street light System.	
a) One year experience of installing and maintenance of CFL or LED Solar Street Light System. One year experience prior to the date of advertisement.	
b) Should have installed at least 30 number of solar Street light.	
c) Letter of proof from concerned parties with address phone number and address.	



# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

PHONE :2577645  
GRAMS : BHARATELEC  
FAX NO: 2520719  
E-mail: srchandran@bheltry.co.in  
Web:

429-002/A

	<b>Enquiry No</b> 2681400029	<b>Enquiry Date</b> 21.10.2014	<b>Due Date for Quotation</b> 27.11.2014
<p>Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order.</p> <p><i>Revised</i></p> <p><u>Bid should be submitted in Two Parts. 1. Techno-commercial Bid (Part-I) and 2. Price Bid (Part-II) in a separate sealed cover and both the covers must be placed in a Third Cover and Sealed. Our Enquiry No., Enq. date &amp; Enq. Due date must be written on all Three covers.</u></p>			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	LED SOLAR STREET LIGHT 80 NOS CFL SOLAR STREET LIGHTING SYSTEM IN VILLAGES OF TRICHY DISTRICT (Details of specification as per Annexure-I. All LED Solar Street Lighting System to be erected and commissioned in respective villages. BHEL PV modules should be used)	NO	80.000	80.00	16.01.15
20	LED SOLAR STREET LIGHT 20 NOS CFL SOLAR STREET LIGHTING SYSTEMS AT PACHAMALAI HILLS (Details of specification as per Annexure-I. All LED Solar Street Lighting System to be erected and commissioned in respective villages. BHEL PV modules should be used)	NO	20.000	20.00	16.01.15

### General Note:

1. Please submit your detailed offer in two part bid system i.e Part-I. Technical and commercial (unpriced bid) in a sealed cover Part-II. Priced offer in another separate sealed cover.

Both the covers shall be duly super-scribed with tender reference and due date of opening. These covers shall be put in a single cover duly super-scribed with tender reference and due date of opening and addressed to us.

2. Point-to-point confirmation to BHEL's specification and commercial terms & conditions shall be provided Annexure-A. All the Annexures should be filled and submitted along with the technical bid (no row shall be left blank), else your offer is liable for rejection.
3. Offers with validity of less than 180 days and non-acceptance of LD, RP & PBG clause and Payment terms, will lead to rejection of submitted offer.
4. If the due date of tender opening happens to be a holiday, the tenders will be opened on the next working day.
5. All clarifications may be sought at least seven days prior to tender due date, from the undersigned with due written request.

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

**VIGILANCE AWARENESS WEEK**  
27 th OCT to 1st NOV 2014  
**FOR VIGILANCE RELATED COMPLAINTS,**  
**CONTACT DGM/VIGILANCE**  
**PHONE:0431-2577552,2577636**

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

*[Signature]*  
MANAGER / PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully

**VICTOR**  
Senior Manager  
Purchase / MM / MFG  
BHEL, TRICHY - 620 014



# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

Page  
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PHONE :2577645  
GRAMS : BHARATELEC  
FAX NO: 2520719  
E-mail: srchandran@bheltry.co.in  
Web:

2681400029 / 21.10.2014

6. BHEL reserves the right to go for a reverse auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions covering RA are given in commercial terms and conditions (Annexure-A/Point no.14)
7. Please note that, there will not be any due date extension for this tender and hence kindly submit your offer well before due date.
8. Order shall be placed on single vendor on cumulative L1 basis for total package.
9. Vendors are requested to avoid the following points while submitting the Bid Documents:
  - a) Loose or spiral bound bid documents are not encouraged.
  - b) In case of any corrections/overwriting in the tender documents, the same shall be duly attested by the bid submitter.
10. Vendor representative having proper ID proof and authorization letter shall attend for tender opening.
11. Corrigendum if any, with respect to this tender will be hosted only in the website <http://www.bhel.com> or <http://tenders.gov.in>. You are requested to visit the website regularly for updates.

List of Attachments:

1. Pre-Qualifying Criteria-1 page (Rev 01)
2. Technical Specifications - Annexure-I (Rev 01)
3. Commercial terms & Conditions-Annexure-A
4. Price Format-Annexure-B (Rev 01)
5. CA Certificate for MSE Vendors-Annexure-D

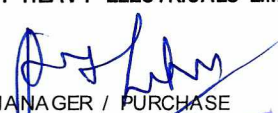
## Enclosures:

"LD clause has to be confirmed without fail."

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

**VIGILANCE AWARENESS WEEK**  
**27 th OCT to 1st NOV 2014**  
**FOR VIGILANCE RELATED COMPLAINTS,**  
**CONTACT DGM/VIGILANCE**  
**PHONE:0431-2577552,2577636**

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
MANAGER / PURCHASE  
(FOSSIL BOILERS)

Yours faithfully,  
**P.G. ABHAYA VICTOR**  
Senior Manager  
Purchase / MM / MFG  
BHEL, TRICHY - 620 014

**TECHNICAL SPECIFICATIONS OF SOLAR STREET LIGHTING SYSTEMS**

**ANNEXURE-I (Rev 01)**

**DEFINITION:**

A stand alone solar photovoltaic street lighting system comprising PV module (BHEL Make), LED luminaire, low maintenance battery, control electronics, inter-connecting wires/cables, module mounting hardware, battery box, instruction and maintenance manual.

The scope of this specification covers the manufacture, Supply, transport, installation, testing, commissioning with Comprehensive Maintenance Contract for a period of 5 years including warrantee period for -- 20 nos a stand alone solar photovoltaic street lighting system as per specifications at Pachamalai Hills and 80 Nos a stand alone solar photovoltaic street lighting system as per specifications in villages of Trichy District, Tamil Nadu..

However, all items required for the safe and efficient operation and maintenance of the solar street lighting system shall be specified and supplied by the Vendor..

**TECHNICAL SPECIFICATIONS & GENERAL SPECIFICATIONS**

S.no.	Description	Vendor to confirm/Specify	Remarks
	The system shall be designed to automatically switch ON at dusk, operate throughout the night and automatically switch OFF at the dawn, under average daily insolation of 5 kWh/Sq.m on a horizontal surface.		
1.0	<p><b>PV Module:</b></p> <p>a) The PV module(s) shall contain mono crystalline silicon solar cells. PV module should be as per IEC 61215 (revised) specifications. <b>Make: BHEL</b>  <b>(For getting BHEL Make PV Module, suppliers need to contact BHEL, Electronic Divisions, Bangalore / BHEL_EDN approved dealers)</b></p> <p>b) Power output of the module(s) under STC should be of 80W.</p> <p>c) The operating voltage corresponding to the power output mentioned above shall be 17 V.</p> <p>d) The open circuit voltage of the PV module under STC shall be at least 21.0 volts.</p> <p>e) The terminal box on the module shall have provision for replacing the cables, if required.</p> <p>f) A strip containing the following details shall be laminated inside the module so as to be clearly visible from the front side.</p> <p style="padding-left: 40px;">i) Name of the manufacturer or distinctive logo.                      ii) Model or Type No.                      iii) Serial No.                      iv) Year of make</p>	BHEL Make only	
2.0	<b>Light Source:</b> White light emitting diode (W-LED). Use of LED which emits UV light is not permitted		
2.1	Power : 12W		
2.2	Input Voltage: 12 V		
2.3	Color temperature: 5500degK to 6000degK		
2.4	LED type: Fail safe type LED (should conduct upon failure)		
2.5	Lamp housing: Die cast Aluminium, powder coated, suitable for outdoor use		
2.6	IP code : IP65		

S.no.	Description	Vendor to confirm/Specify	Remarks
2.7	Heat sink temperature should not increase more than 20degC above ambient temperature even after 48 hours of continuous operation.		
2.8	LED Ballast: Built in Self ballast (integral type). Light output from the light source must be constant throughout its duty cycle		
2.9	Make of LED package: Philips, Cree,Nichia, OSRAM,Bridgelux, Sharp, Toshiba.		
2.10	The make, model number, country of origin and technical characteristics (including IESNA LM-80 report) of white LEDs used in the lighting system must be furnished		
3.0	<b>Battery:</b> a) Flooded electrolyte type, positive tubular plate, low maintenance lead acid battery, conforming to relevant BIS standards or gel type VRLA. b) The battery should have a minimum rating of 12V, 75Ah (at C/10) discharge rate. c) 75% of the rated capacity of the battery shall be between fully charged and load cut off conditions. Make and Model No.: Bidder to specify. d) It is mandatory for the battery manufacturers/ bulk users to comply with batteries (Management and handling) Rules 2001 of MOEF, as amended		
4.0	<b>Electronics:</b>		
4.1	Efficiency should be more than 85%		
4.2	Voltage: 12V		
4.3	Maximum charging current: Bidder to specify		
4.4	Float charge: 13.8V (25 deg C); Main Charge: 14.4V (25 deg C), 30 min Daily; Boost Charge: 14.4V (25 deg C), 2 hours. Charger type :MPPT.		
4.5	Cut off level 11.9 V; Reconnect level of 12.8V		
4.6	Overvoltage protection : 15.5V,by varistor		
4.7	Undervoltage protection: 10.5V		
4.8	Temperature compensation: (-25mV/K at 12V). The electronics should have temperature compensation for proper charging of the battery throughout the year		
4.9	Self consumption: 5 to 10 mA		
4.10	Fuses shall be provided to protect against short circuit conditions. Protection for reverse flow of current through the PV module should be provided. Adequate protection should be provided against battery reverse polarity. Adequate protection is to be incorporated under no load conditions, e.g., when the lamp is removed and the system is switched ON.		
4.11	Negative terminal grounding		
4.12	IP code: IP 65		
4.13	The light output should remain constant with variations in the battery voltages.		
4.14	The electronic driver should be replaceable without impacting the LED arrangement in the fixture		
4.15	Necessary lengths of wires/cables and fuses shall be provided.		

S.no.	Description	Vendor to confirm/Specify	Remarks
4.16	The PV module shall be used to sense the ambient light level for switching ON and OFF the lamp.		
5.0	<b>Electronic protection:</b> a) Adequate protection is to be incorporated under no load conditions, e.g., when the lamp is removed and the system is switched ON.		
	b) The system shall have protection against battery over charge and deep discharge conditions.		
	c) Fuses shall be provided to protect against short circuit conditions.		
	d) A blocking diode preferably a Schottky type, shall be provided as part of the electronics to prevent reverse flow of current through the PV module(s),		
	e) In case blocking diode is not provided with the PV module(s), Full protection against open circuit, accidental short circuit and reverse polarity shall be provided.		
	f) Electronics should operate at 12V and should have temperature compensation for proper charging of the battery thorough out the year.		
6.0	<b>Mechanical Components:</b> a) Metallic frame structure (with corrosion resistance paint) to be fixed on the pole to hold the SPV module(s). The frame structure shall have provision to adjust its angle of inclination to the horizontal between 0 degree and 45 degree, so that the module(s) can be oriented at the specified tilt angle.		
	b) The pole shall be made of mild steel pipe with a height of 4mtrs. above the ground level after grouting and final installation. The pole shall have the provision to hold the weatherproof lamp housing. It shall be painted with a corrosion resistant paint. The pole along with base plate shall have suitable cement concrete foundation to assisted local worst climate condition. The base plate shall be connected with the foundation with holding down bolted.		
	c) A vented, acid proof and corrosion resistance painted metallic box/ Polyethylene for outdoor use shall be provided for housing the battery.		
7.0	<b>Other features:</b> a) The system should be provided with 2 LED indicators: a green LED to indicate charging in progress and a red LED to indicate deep discharge condition of the battery. The green LED should glow only when the battery is actually being charged.		
	b) There shall be a Name plate on the system, which shall give: i) Name of the manufacturer or Distinct Logo. ii) Serial number.		
	c) Components and parts used in the solar street lighting systems should conform to the latest BIS specifications, wherever such specifications are available and applicable.		

S.no.	Description	Vendor to confirm/Specify	Remarks
	d) Street lighting system (including the battery) shall be warranted for a period of <b>two years</b> from the date of supply. The warranty card to be supplied with the system must contain the details of the system. However the total system has to be maintained for 5 years including battery at the bidder cost. The manufacturers can also provide additional information about the system and conditions of warranty as necessary. PV modules should be warranted for 15 years.		
	e) Necessary lengths of wires/cables and fuses should be provided.		
8.0	An operation, instruction and maintenance manual, in English and the local language, should be provided with the solar street lighting system. The following minimum details must be provided in the manual: (a) About solar street lighting system - its components and expected performance (b) About LED (c) About battery (d) Clear instructions about erection of pole and mounting of PV module and lamp housing assembly on the pole. (e) About electronics (f) About charging and significance of indicators.		
9.0	<b>General installation specifications:</b> a) The SPV module shall be fixed on a rigid pole. The pole of minimum 5 cm dia GI / MS pipe of medium gage with corrosion resistance paint.		
	b) Adequate space shall be provided behind the PV module / array for allowing unobstructed airflow for passive cooling.		
	c) Cables of appropriate size shall be utilized to keep electrical losses to a bare minimum.		
	d) The battery shall locate in a dry area with proper ventilation. Care shall be taken to ensure that the battery is placed with appropriate levelling on a structurally sound surface.		
	e) The control electronics shall not be installed directly above the battery. All wiring shall be in proper conduit or capping casing. Wire shall not be hanging loose.		
	f) Any minor items which are not specifically included in the scope of supply but required for proper installation and efficient operation of the SPV systems is to be provided by the manufacturers / suppliers.		

S.no.	Description	Vendor to confirm/Specify	Remarks
10.0	<p><b>Comprehensive Maintenance Contract for a period of 5 years including warrantee period.</b> The vendor shall give the guarantee for all the parts of the system.</p>		
10.1	<p>Comprehensive Maintenance Contract (CMC) means tenderer shall give the warrantee of systems for 5 years including warrantee period under the Contract. During the Warrantee/5year period, any defects and shortcomings in the work/function due to inferior quality of new parts / materials shall have to be replaced and reinstate the system function by the Contractor without any extra cost to the users / BHEL. The contractor will maintain the system during CMC period at his own cost. Further the Contractor shall visit to all the supplied systems quarterly irrespective of any complaint and submit report to BHEL. The contractor shall attend the complaints and undertake the repairs within 15 days time, from the receipt of complaint from beneficiary institute / user.</p>		
11.0	<p>The Contractor shall provide appropriate tools and equipments to the workmen and ensure that those are in proper working condition and the workmen use the appropriate tools and take precaution “please note that any accident to the work men / public / animals / property both movable and immovable will be entire and sole responsibility of the contractor and any proceeding arising out of the same will be at the contractors risk and cost. BHEL or its employees or any user shall not be responsible for any such incident”.</p>		
11.1	<p>Rates shall be inclusive of all types of taxes including VAT/CST, octroi, loading, unloading, transportation, sales tax, general tax and all applicable taxes. At later stage no letter in this regard shall be entertained. However the bidder will be fully responsible for payment of all applicable taxes and duties.</p>		

**Sr. No. 10 FINANCIAL BID****FINANCIAL BID FOR VARIOUS RENEWABLE ENERGY SYSTEMS**

Financial Bid for making Contract for manufacture, Supply, installation, testing, commissioning with Comprehensive Maintenance Contract for a period of 5 years for stand alone solar photovoltaic street lighting system comprises a compact LED lamp, lead acid battery, PV module(s), control electronics, inter-connecting wires/cables, module mounting hardware, battery box, instruction and maintenance manual. The rate shall be inclusive of all taxes & duties, transportation & insurance charges etc., for 80+20 nos a stand-alone solar photovoltaic street lighting system as per annexure-I rev01, at places of Trichy District & Pachamalai Hills in the State of TamilNadu

Sl. No.	System	Quantity	Total Cost Per No. (in Rs.)
01	80 NOS LED SOLAR STREET LIGHTING SYSTEM IN VILLAGES OF TRICHY DISTRICT  All LED Solar Street Lighting System to be erected and commissioned in respective villages. BHEL PV modules should be used	80	
20	20 NOS LED SOLAR STREET LIGHTING SYSTEMS AT PACHAMALAI HILLS  All LED Solar Street Lighting System to be erected and commissioned in respective villages. BHEL PV modules should be used	20	

**Note :**

- The cost is inclusive of all applicable taxes & transportation, etc., including necessary civil works.
- No extra charge for maintenance under 5 year warranty period.

Date :

Signature :

Name :

Designation :

Seal of Company :