

Bharat Heavy Electricals Ltd.,

(A Government of India undertaking)


Electronics Division

PB No.2606, Mysore Road, Bangalore-560026, India

Quotations are invited under two part bid system for Supply of 1Cx4 sq mm EBXL XLPO cables for 20MW NTPC -GANDHAR Solar Power project through e-procurement route.

RFQ NO and date	BKC0000054 dated 23.10.2020. (E-tender)
RFQ due date & time	4.11.2020 up to 13.00 hrs (IST)
Date, Time & Venue of Part-I Bid Opening	04.11.2020 after 13.30 hrs (IST) (E-tender) – Website - https://bhel.abcprocure.com
Date, Time & Venue of Price Bid opening	Will be intimated later for technically accepted vendors.
Address for Communication & Contact Person in BHEL	Engineering Department: Mr. Sheetal Prasad (9739913232) Purchase Department: Mr. Chandan BK (9739252560) BHEL Electronics Division, PB NO 2606, Mysore road, Bangalore-560 026. INDIA Email: chandanbk@bhel.in sheetalprasad@bhel.in

REQUEST FOR QUOTATION

	BHARAT HEAVY ELECTRICALS LIMITED Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: BKC0000054 RFQ DATE : 23.10.2020	Due Date/Day: 04.11.2020 WED Time : 13:00 HRS E-TENDER
MMI:PU:RF:003			
(address for communication) :		(for all correspondence) Purchase Executive : CHANDAN BK Phone : 080 26989608 Fax : 26989217 E-mail: chandanbk@bhel.in	

SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	PS0679080880 4 sqmm Cu EBXL XLPO - Black * HSN/SAC : 8544 Test Certificate	90,000	M	90,000	03.03.2021
2	PS0679080899 4 sqmm Cu EBXL XLPO Black with Red line * HSN/SAC : 8544 Test Certificate	90,000	M	90,000	03.03.2021
3	PS0679088040 Spare-1CX4 sqmm EBXL XLPO Cable-black * HSN/SAC : 8544 Test Certificate	3,750	M	3,750	03.03.2021
4	PS0679088059 Spare-1CX4 sqmm EBXL XLPO Cable-black * HSN/SAC : 8544 Test Certificate with Red line	3,750	M	3,750	03.03.2021

Total Number of Items - 4

1.
2.

NOTES:

- This RFQ is governed by:
 - INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at <http://edn.bhel.com> (**RFQ-PO Terms & Conditions**)
 - Any other specific Terms and Conditions mentioned.
- Bidders / Representatives who would like to be present during opening of offers are required to furnish authorization letter for the same.

* The HSN/SAC no mentioned against the line items in the RFQ are indicative only.


For and On behalf of BHEL.

CHANDAN BK
Semiconductors & Pho

1 OF 1

PRE QUALIFICATION CRITERIA:

- 1) Vendor shall be OEM of cables as per EN 50618. As evidence to this, vendor shall enclose (a) their product catalog and (b) a self-certified letter declaring the address of their existing manufacturing and testing works.
- 2) Vendor should have already obtained type test certificates for 1Cx4 sqmm copper cables with EBXL XLPO insulation and outer sheath layers as per EN 50618. As evidence to this, vendor shall enclose the certificates/ test reports from NABL accredited lab for all type tests as per EN 50618.
- 3) Vendor should have supplied minimum 150 Km of 1Cx4sqmm or higher size cable as per EN 50618 for solar PV power plants in India during the past three years with ref to the date of opening of Part-1 bid. As evidence to this, vendor shall enclose copies of purchase orders and the supply completion proof in form of Invoice/ LR/ customer letter.
- 4) During technical evaluation, Credentials of vendors will be submitted to end customer (M/s NTPC) for approval. Only the price bids of those vendors, **who are technically qualified and Approved by end customer** (M/s NTPC) before price bid opening, will be considered for further procurement processing.

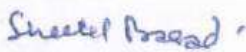

	Purchase specification, Group: Photovoltaics 1 core x 4 sq-mm Cu, EBXL XLPO insulated and Sheathed Solar cable	PS-439-1337
		REV NO: 00
		PAGE : 1 OF 4


COPYRIGHT AND CONFIDENTIAL

**The information on this document is the property of Bharat Heavy Electricals Limited.
It must not be used directly or indirectly in anyway detrimental to the interest to the
company**

Technical specification

**For
Supply of 1 core x 4 sq-mm Cu, EBXL
XLPO insulated and Sheathed Solar cables**


Revision details :R 00	Prepared  SP	Approved  PRV	Date 17 -10-2020
------------------------	---	---	---------------------

	Purchase specification, Group: Photovoltaics 1 core x 4 sq-mm Cu, EBXL XLPO insulated and Sheathed Solar cable	PS-439-1337
		REV NO: 00
		PAGE : 2 OF 4


This technical specification provides BHEL's requirement for supply of 1CX4 sq-mm cables for the solar photovoltaic (SPV) project.

A. Technical specification

#	Particular	BHEL specification
1.0	Item description	Cable, 1 core x 4 sq-mm, 1.8 KV DC (maximum), Annealed tinned copper conductor, EBXL XLPO Insulated and Sheathed Solar Photovoltaic Cable.
2.0	Application	Suitable for use in outdoor application for interconnection of solar photovoltaic (SPV) modules in SPV power plants.
3.0	Applicable standard	EN 50618
4.0	Voltage grade	Maximum permissible voltage = 1800 V DC (conductor – conductor, non-earthed system, circuit not under load)
5.0	Type of cable	H1Z2Z2-K
6.0	Conductor	
a)	Material	Flexible Annealed tinned copper conductor as per class 5 of IEC 60228
b)	Cross sectional area (Nominal)	(i) 4 sq-mm
c)	Maximum diameter of wires in the conductor	For 4 sq-mm: 0.31 mm
d)	Maximum conductor resistance at 20 °C (DC)	For 4 sq-mm: 5.09 Ohm per Km
e)	Current Carrying Capacity	As per EN 50618
7.0	Insulation	
a)	Material	Electron beam cross link (EBXL) Cross-Linked Polyolefin (XLPO)
b)	Nominal insulation thickness	0.7 mm
c)	Max. conductor temperature	120°C – Normal continuous operation 250°C – Short circuit condition for 5 seconds
8.0	Insulation color for identification	Natural or as per manufacturer's standard.
9.0	Outer Sheath	
a)	Material	Electron beam cross link (EBXL) Cross-Linked Polyolefin (XLPO)
b)	Nominal Thickness of outer Sheath	0.8 mm
c)	Colour of outer sheath	Black or Black with red lining, quantity as per individual item requirement of BHEL

	Purchase specification, Group: Photovoltaics 1 core x 4 sq-mm Cu, EBXL XLPO insulated and Sheathed Solar cable	PS-439-1337
		REV NO: 00
		PAGE : 3 OF 4

d)	Overall diameter of cable	Vendor shall indicate actual dimension, tolerance for 4 sq-mm cable.	
10.0	Minimum bending radius	Vendor shall indicate the same with applicable standard for 4 sq-mm cable.	
11.0	Type Tests	<p style="text-align: center;">As per EN 50618 Type test certificate / provisional certificate issued from NABL accredited laboratories to be submitted by the vendor along with the technical offer.</p>	
a)	Electrical Tests		
b)	Constructional and dimensional tests		
c)	Pressure test at high temperature at complete cable		
d)	Damp heat test		
e)	Resistance against acid & alkaline solution		
f)	Test of influence		
g)	Cold impact test at -40°C		
h)	Cold bending test		
i)	Ozone resistance test		
j)	Weathering/ UV-resistance test		
k)	Dynamic penetration test		
l)	Shrinkage test		
m)	Test under fire condition		
12.0	Routine Tests		
a)	High voltage Test	As per EN 50618	
b)	Conductor resistance test	As per EN/IEC 60228	
c)	Spark Test	As per EN 50618	
13.0	Acceptance Tests	Sampling for acceptance test will be as per IS 7098	
a)	Conductor resistance test	As per EN/ IEC 60228	
b)	High voltage Test	As per EN 50618	
c)	Insulation resistance test	As per EN 50618	
d)	Annealing test	As per EN/ IEC 60228	
e)	Thickness of insulation & sheath	As per EN 50618	
f)	Hot set test	As per EN 50618	
g)	Tensile and elongation at break test for insulation & sheath	As per IEC-60332-1, IEC-60754-1, ASTM D-2843, EN 50618	
h)	Flame retardence test	As per EN 50618	
i)	Outer finish check	Manufacturers standard	
14.0	Pre-dispatch inspection at Vendor works	Prior to dispatch of the item, vendor shall provide inspection call to BHEL to witness the acceptance tests as per clause 12.0 and 13.0 as above.	
15.0	Manufacturing Quality Plan / Quality Assurance Plan	Vendor shall submit Manufacturing Quality Plan for BHEL/BHEL-customer approval within 1 week of placement of Order. Sampling for acceptance test will be as per IS 7098	

	Purchase specification, Group: Photovoltaics 1 core x 4 sq-mm Cu, EBXL XLPO insulated and Sheathed Solar cable	PS-439-1337
		REV NO: 00
		PAGE : 4 OF 4


16.0	Test certificate	Three copies of test certificate shall be supplied with BHEL PO number and date, BHEL specification number, Cable description, Manufacturer name, Part number, Size & Length of the cable, Batch / Lot number. Test certificate shall contain test description, measured values of dimensions and cable properties, and acceptance limits.
17.0	Cable identification	Printing/embossing shall be done on outer sheath with following information throughout the length of the cable: Manufacturer name, brand name or trade mark, Cable size, Cable code, Voltage grade of the length of cable. The printing/embossing shall be continuous in line with EN 50618. Sequential marking shall be at every 1 m of cable length. Word 'FRNC' printing at every 5 m
18.0	Packing and marking	
a)	Packing	Both the ends of the cables shall be properly sealed with heat shrinkable PVC/ rubber caps secured by 'U' nails so as to eliminate ingress of water during transportation, storage and erection. Alternatively, supplier can do alternative packaging of whole Drum/Spool to eliminate ingress of water during transportation, storage and erection. Wood preservative anti-termite treatment shall be applied to the entire drum.
b)	Drum	Drums shall be either plastic spools or wooden drums as per IS:10418-1972 or equivalent, with suitable size.
c)	Marking on the drum	Each drum shall be marked with following information: BHEL PO number and date, Cable description, Manufacturer name, Part number, Size & Length of the cable, Cable code, Voltage grade, Approx gross mass, Year of manufacture.
d)	Cable length in each drum	1000 meter or 2000 meter, tolerance +/- 5 %

B. Documents to be submitted along with offer without which offer is likely to be rejected.


1. Type test certificate as per EN 50618 issued from NABL accredited laboratories.
2. Filled in values/details wherever the same is asked for in BHEL technical specifications.
3. Filled up sub-vendor questionnaire format (Attachment-A) with supporting documents for vendor approval with NTPC.
4. Vendor has to enclose the deviation sheet clause wise separately in case any deviations are sought by the vendor. Absence of any deviation sheet shall be taken as compliance of BHEL specification in total without any deviation.

C. Documents to be submitted within 1 week after receipt of Purchase order for approval

1. Technical datasheet of the cable with cable cross section sketch.
2. Manufacturing Quality Plan (MQP) indicating all tests/checks regarding raw material, in-process and final product as per relevant standards, as called in this document and any other relevant standards shall be submitted to BHEL/BHEL's customer for approval.

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
--	---

i.	Item/Scope of Sub-contracting			
ii.	Address of the registered office 	Details of Contact Person (Name, Designation, Mobile, Email) 		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured 	Details of Contact Person: (Name, Designation, Mobile, Email) 		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting			
vi.	Details of proposed works			
1.	Year of establishment of present works			
2.	Year of commencement of manufacturing at above works			
3.	Details of change in Works address in past (if any)			
4.	Total Area			
	Covered Area			
5.	Factory Registration Certificate	Details attached at Annexure – F2.1		
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design Details attached at Annexure – F2.2 (if applicable)		
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)	Details attached at Annexure – F2.3		
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4		
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5		
10.	Sources of Raw Material/Major Bought Out Item	Details attached at Annexure – F2.6		
11.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing	Details attached at Annexure – F2.7		

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
--	---

12.	Manufacturing facilities <i>(List of machines, special process facilities, material handling etc.)</i>	Details attached at Annexure – F2.8			
13.	Testing facilities <i>(List of testing equipment)</i>	Details attached at Annexure – F2.9			
14.	If manufacturing process involves fabrication then- List of qualified Welders List of qualified NDT personnel with area of specialization	Applicable / Not applicable Details attached at Annexure – F2.10 <i>(if applicable)</i>			
15.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses	Applicable / Not applicable Details attached at Annexure. –F2.11 <i>(if applicable)</i>			
16.	Supply reference list including recent supplies	Details attached at Annexure – F2.12 <i>(as per format given below)</i>			
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply
17.	Product satisfactory performance feedback letter/certificates/End User Feedback			Attached at annexure - F2.13	
18.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product <i>(similar or higher rating)</i> Note:- Reports need not to be submitted			Applicable / Not applicable Details attached at Annexure – F2.14 <i>(if applicable)</i>	
19.	Statutory / mandatory certification for the proposed product			Applicable / Not applicable Details attached at Annexure – F2.15 <i>(if applicable)</i>	
20.	Copy of ISO 9001 certificate <i>(if available)</i>			Attached at Annexure – F2.16	
21.	Product technical catalogues for proposed item (if available)			Details attached at Annexure – F2.17	
Name: <input style="width: 200px;" type="text"/> Desig: <input style="width: 100px;" type="text"/> Sign: <input style="width: 100px;" type="text"/> Date: <input style="width: 100px;" type="text"/>					

Company's Seal/Stamp:-

F.No.6/18/2019-PPD
Ministry of Finance
Department of Expenditure
Public Procurement Division

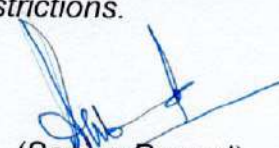
161, North Block,
New Delhi
23rd July, 2020

Office Memorandum

Subject: Insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017

Rule 144 of the General Financial Rules 2017 entitled 'Fundamental principles of public buying', has been amended by inserting sub-rule (xi) as under:

Notwithstanding anything contained in these Rules, Department of Expenditure may, by order in writing, impose restrictions, including prior registration and/or screening, on procurement from bidders from a country or countries, or a class of countries, on grounds of defence of India, or matters directly or indirectly related thereto including national security; no procurement shall be made in violation of such restrictions.


(Sanjay Prasad)
Joint Secretary (PPD)
Email ID: js.pfc2.doe@gov.in
Telephone: 011-23093882

To,

- (1) Secretaries of All Ministries/ Departments of Government of India
- (2) Chief Secretaries/ Administrators of Union Territories/ National Capital Territory of Delhi