

**ITEM: SUPPLY OF 400KV HARDWARE FITTINGS (120KN) FOR KHAVDA POOLING STATION-2****Technical PQR & Technical Specification: AS ATTACHED****Quantity: As per attached BOQ****BILL OF MATERIAL (BOM):**

Sr. No.	BHEL Item Code	Description of Item/Specification	Quantity	UOM	Technical PQR & Technical Specification
1	EL9615200090	400KV DT W/O TB Quad ACSR Bersimis Condc	9	SET	AS ATTACHED
2	EL9615200100	400KV SS WITH Drop type Quad MOOSE Cond	3	SET	

- Bidder to provide signed & Sealed GEM BID, Technical PQR, Technical specification & Annexure No. **A/30032035/29.01.2024** with their offer.
- To get MSE preference**, bidder to choose MSE purchase preference on GEM portal during offer submission otherwise purchase preference shall not be applicable.
- To get MII preference**, bidder to choose MII purchase preference on GEM portal and bidder to submit signed local content declaration otherwise purchase preference shall not be applicable.
- Item shall be manufactured as per attached specification. **All drawings to be submitted within 7 days from the date of PO for customer approval and subsequent revision (if any) to be submitted within 3 days.**
- Delivery Schedule: **Material shall be supplied to Khavda project, Gujarat within 45 days from the date of Manufacturing clearance from BHEL SBD.**
- Delivery location:** KPS2 Transmission Ltd., 765/400 KV GIS (under construction) Khavda Pooling Station-2, RE Park at great Rann of Kutch, Khavda-Vighakote Highway Near Khavda, District – Khavda, Gujarat-370510 as per GeM consignee.
- Price basis: **Price shall be firm till completion of the contract. No PVC is applicable. F.O.R. Destination basis inclusive of packing, forwarding & freight charges, testing (IF ANY), & insurance charges. Vendor to provide valid type test report along with technical offer. Acceptance test to be conducted at the time of inspection without any extra cost.**
- Payment terms: Hundred Percent (100%) of basic price of the material supplied as per PO, along with 100% taxes & duties (as applicable) shall be payable on pro-rata as per following manner
  - 45 days for Micro & Small Enterprises (MSEs)
  - 60 days for Medium Enterprises
  - 90 days for Non-MSME
 from the date of receipt of goods at BHEL SBD and receipt of complete documents at BHEL SBD as specified in Clause No. 9 below subject to acceptance of materials. [i.e. date of acceptance of material or date of submission of complete set of documents (whichever is later) shall be considered for reckoning the due date of payment.]
- Documents to be Submitted by Vendor for payment:
  - Tax Invoice – Original + 2 copies
  - Copy of Receipted LR
  - Material Dispatch Clearance Certificate (MDCC)
  - Delivery Challan/e-Way Bill
  - Packing List
  - Insurance copy
  - Test Certificate
  - Guarantee Certificate
- Invoice to be made as per the prevailing GST format only. TDS Deductions applicable as per GST Law & TDS certificate shall be issued by BHEL in line with the latest amendment in GST Law.
- LD/Penalty: As per GeM general T&C.
- Guarantee period: As per GeM general T&C
- Technical PQR- requirement i.e. Years of Past Experience of 02 years as per technical PQR.
- Past Experience shall be supply of 83% of bid quantity.
- Minimum Average Annual Turnover of the Bidders: Not applicable.
- Inspection, sample and Quality Clearance: Pre-Dispatch Inspection (PDI) by Customer or 3rd Party is applicable.

UNPRICED BOQ FOR 30032035							
Item Number	Item Code	Item Description	Quantity	UOM	[Pl mention only QUOTED or NOT QUOTED]	Applicable GST %	HSN Code
1	EL9615200090	400KV DT W/O TB Quad ACSR Bersimis Condc	9	SET			
2	EL9615200100	400KV SS WITH Drop type Quad MOOSE Cond	3	SET			



## TECHNICAL SPECIFICATIONS FOR HARDWARE FITTINGS

### Note:

1. Only Power Grid approved and qualified Vendors to apply for this tender.
2. All Drawings are subject to approval from Customer for Manufacturing Clearance.
3. It is mandatory for the vendor to submit all Test Reports pertaining to the supply of Line Hardware at the time of Bid Submission.
4. Vendors will be technically qualified only when they submit valid test reports for Line Hardware in addition to other specification requirements.
5. Any cost implication for conduction, testing and production of Test Reports for Line Hardware will solely be in the scope of vendor.
6. The costs related to Acceptance Tests (if any) of Line Hardware is to be included in the scope of vendor supply along with other costs.

### 1.0 String Insulator and Hardware fittings:

#### 1.1 Construction Feature (hardware fittings)

**1.1.1** Clamps for insulator strings and Corona Control rings shall be of aluminium alloy as stipulated for clamps and connectors

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**1.1.2** Insulator hardware shall be of forged steel. Malleable cast iron shall not be accepted except for insulator disc cap. The surface of hardware must be clean, smooth, without cuts, abrasion or projections. No part shall be subjected to excessive localized pressure. The metal parts shall not produce any noise generating corona under operating conditions.

**1.1.3** The tension Insulator hardware assembly shall be designed for minimum 21000 kg tensile load for 765kV and minimum 12000 kg tensile load for hardware assembly below 765kV. Earth wire tension clamp shall be designed for minimum 1000 kg tensile load with a factor of safety of two (2).

**1.1.4** The tension string assemblies shall be supplied alongwith suitable turn buckle. Sag compensation springs if required may also be provided.

**1.1.5** All hardware shall be bolted type.

#### 1.2 Tests

- a) The suspension and tension strings, insulator and hardware shall be subjected to type tests, acceptance tests and routine tests as per Power Grid technical requirements.
- b) The Type Test reports for the Line Hardware with the Insulator String rating is to be provided for Power grid approval.

### 1.3 Guaranteed technical particulars

#### 1.3.1 Insulator string

## TECHNICAL SPECIFICATIONS FOR HARDWARE FITTINGS

Sl. No.	Description	765 kV	400kV	220kV	132kV
a)	Power frequency withstand voltage of the complete string with corona control ring (wet) KV rms	870	680	460	275
b)	Lightning impulse withstand Voltage of string with corona control rings (dry) - kVp	± 2100	± 1550	± 1050	± 650
c)	Switching surge withstand voltage of string with corona control rings (wet) - kVp	± 1550	± 1050	NA	NA
d)	Minimum corona extinction voltage level of string with Corona Control rings (dry) - kV rms	508	320	156	NA
e)	Maximum RIV level in micro volts of string with Corona Control rings across 300 Ohms resistor at 1 MHz	1000 (Max) at 508 kV	1000 (Max) at 320 kV	1000 (Max) at 156 kV	NA
f)	Minimum total creepage distance of the insulator string (mm)	24800	13020	7595	4495
g)	Minimum no. of discs per string (for tension string if applicable)	54	31	18	11

### For tension application: -

Double insulator strings for 765kV, 400kV, 220kV and single insulator strings for 132 kV systems shall be used.

### For suspension application: -

V-type polymer insulator string shall be used for 765kV system and single suspension polymer insulator string shall be used for 400kV, 220kV & 132 kV systems.

## 2.0 Scope of supply:

S.No.	Description	Unit	Quantity
1	400KV TENSION INSULATOR STRING AND ASSOCIATED HARDWARE FITTINGS WITHOUT TURN BUCKLE SUITABLE FOR QUAD CONDUCTOR	Set	9
2	400KV SUSPENSION INSULATOR STRING AND ASSOCIATED HARDWARE FITTINGS WITH DROP CLAMP SUITABLE FOR QUAD CONDUCTOR	Set	3

**DINESH KUMAR**  
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## Pre-Qualification Requirement for Line Hardware

PR: 30032035

Item: Hardware fittings of 400KV ratings

Total Qty: 12 Sets

Sl.No.	Pre-Qualification Requirement	Bidder's response
1.	Vendor shall be the original manufacturer and supplier of line hardware.	Submitted / Not submitted (vendor should provide documentary evidence by way of PO / performance certificate or any other valid document.)
2.	Vendor must have supplied at least 10 sets of hardware of 400KV rating in past two years.	Submitted / Not submitted (Performance certificates, PO copies or commercial invoices, waybills or any valid supply document of similar supplied items.)
3.	Vendor shall submit all valid Test reports pertaining to the hardware fittings for Customer's approval.	Submitted / Not submitted
4.	Vendor shall be Power Grid approved and qualified for supply of hardware fittings of 400KV rating.	Submitted / Not submitted (power grid approval letter)

**DINESH  
KUMAR**

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