

**BILL OF QUANTITIES CUM PRICE SCHEDULE (Annexure-I)**

**Name of the Work:-**ETC Works of 66 KV Cabling and its associated works at Captive Power Plant (CPP) for Visakh Refinery Modernization Project (VRMP), of Vishakhapatnam (Andhra Pradesh)

**Customer:-** M/S HINDUSTAN PETROLEUM CORPORATION LTD.

**Tender Specification No. :** TBSP/HPCL-VRMP VIZAG /66 KV CABLING/ETC /TENDER/21-22, Date: 15.12.2021

Sl. No.	Item Description	Quantity	UOM	Unit Rate Rs.	Total (Rs.)	Remarks
1	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.1.1) Transportation/ shifting of materials (66kV XLPE cables and its accessories) to project location from PSNR (Stores are in HPVP Plant, approx. 10km away from the project site). (1lot= 66kV XLPE cables and accessories which includes termination/ jointing kits and link box etc. as mentioned in BOQ )</p>	1	Lot	2,10,000	2,10,000.00	Transportation shall include the shifting for EHV drums (for approx. 9600mtrs site laying requirements), Bonding and ECC cables and its accessories such as termination kits, jointing kits, link boxes etc.
2	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.1) 1Cx500sqmm, 66kV XLPE, stranded Cu cable along with fixing of single clamp/ trefoil clamps, as applicable</p>	9600	Running Meter	482.08	46,27,968.00	<p>The laying activity shall include the laying of 66kV XLPE cable on the trench with (part)/ tray route in pipe rack assembly (in part) as per following details (laying length is as per site confirmation vide email dtd. 12.12.2021,</p> <p>3. GTG07 transformer-3trefoils-2826mtrs</p> <p>4. STG01 transformer-1trefoils-945mtrs</p> <p>5. 11kV CPP utility board1 transformer- 2trefoils - 1998mtrs</p> <p>6. 11kV CPP utility board2 transformer- 2trefoils - 2046mtrs</p> <p>7. 11kV CPP aux. board1 transformer- 1trefoils-900mtrs</p> <p>8. 11kV CPP aux. board2 transformer- 1trefoils-885mtrs</p>
3	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories</p> <p>(2.2.1) Extending support for 66kV Indoor cable termination kit (plug/ socket type) suitable/ compatible for 1Cx500sqmm, 66kV XLPE, copper cable for GIS end. (1 set= 1 no. phase with all associated work)</p>	99	Set	7,231.19	7,15,887.81	<p>1. 220/66kV Transformer1: 1no baysx3no CHDx 3phase</p> <p>2. 220/66kV Transformer2: 1no baysx3no CHDx 3phase</p> <p>3. GTG07 transformer: 1no baysx3no CHDx 3phase</p> <p>4. STG01 transformer: 1no baysx1no CHDx 3phase</p> <p>5. CPP Utility Board: 2no baysx2no CHDx 3phase</p> <p>6. CPP Auxiliary Board: 2no baysx1no CHDx 3phase</p> <p>7. Customer bays:</p> <p>7.1. Customer bays with single module: 14no baysx 1no CHDx 3phase</p> <p>7.2. Customer bays with three module: 1no baysx 3no CHDx 3phase</p>

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**Customer:-** M/S HINDUSTAN PETROLEUM CORPORATION LTD.

**Tender Specification No. :** TBSPM/HPCL-VRMP VIZAG /66 KV CABLING/ETC /TENDER/21-22, Date: 15.12.2021

Sl. No.	Item Description	Quantity	UOM	Unit Rate Rs.	Total (Rs.)	Remarks
4	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.2) Extending support for 66kV Indoor cable termination kit (heat shrinkable/ cold shrinkable type) suitable/ compatible for 1Cx500sqmm copper cable for weatherproof cable box of transformer (1 set= 1 no. phase with all associated work)</p>	48	Set	7,231.19	3,47,097.12	<p>1. 220/66kV Transformer1: 1no baysx3no CHDx 3phase 2. 220/66kV Transformer2: 1no baysx3no CHDx 3phase 3. GTG07 transformer: 1no baysx3no CHDx 3phase 4. STG01 transformer: 1no baysx1no CHDx 3phase 5. CPP Utility Board: 2no baysx2no CHDx 3phase 6. CPP Auxiliary Board: 2no baysx1no CHDx 3phase</p>
5	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.3) Extending support for 66kV straight through jointing kit (heat shrinkable/ cold shrinkable type) suitable/ compatible for 1Cx500sqmm copper cable (1 set= 1 no. phase with all associated work)</p>	3	Set	7,231.19	21,693.57	In case of jointing requirements at site for for 1nos. trefoil cable (3 nos. of single phase)
6	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor.</p> <p>However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.4) 1nox3phase link box without SVL (sheath voltage limiter) at GIS end along with metallic screen bonding/ earthing cable along with accessories (1 set= all three phase with all associated work)</p>	33	Set	3,013.00	99,429.00	<p>1. 220/66kV Transformer1: 1no baysx3no CHD 2. 220/66kV Transformer2: 1no baysx3no CHD 3. GTG07 transformer: 1no baysx3no CHD 4. STG01 transformer: 1no baysx1no CHD 5. CPP Utility Board: 2no baysx2no CHD 6. CPP Auxiliary Board: 2no baysx1no CHD 7. Customer bays: 7.1. Customer bays with single module: 14no baysx 1no CHD 7.2. Customer bays with three module: 1no baysx 3no CHD</p>

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**Customer:-** M/S HINDUSTAN PETROLEUM CORPORATION LTD.

**Tender Specification No. :** TBSP/HPCL-VRMP VIZAG /66 KV CABLING/ETC /TENDER/21-22, Date: 15.12.2021

Sl. No.	Item Description	Quantity	UOM	Unit Rate Rs.	Total (Rs.)	Remarks
7	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor. However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.5) 1no x 3 phase link box with SVL (sheath voltage limiter) at Transformer end along with metallic screen bonding/ earthing cable along with accessories (1 set= 1 no. phase with all associated work)</p>	16	Set	3,013.00	48,208.00	<p>1. 220/66kV Transformer1: 1no baysx3no CHD 2. 220/66kV Transformer2: 1no baysx3no CHD 3. GTG07 transformer: 1no baysx3no CHD 4. STG01 transformer: 1no baysx1no CHD 5. CPP Utility Board: 2no baysx2no CHD 6. CPP Auxiliary Board: 2no baysx1no CHD</p>
8	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor. However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.6) Bonding cable and Earth Continuity Cable</p>	16	Circuit-no	4,218.20	67,491.20	Bonding cables at both end and Earth Continuity cable between end
9	<p>(2) 66kV EHV Cable &amp; its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable &amp; earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing &amp; commissioning of cabling system along with installation, testing &amp; commissioning of jointing &amp; termination kit shall be done by OEM with assistance of contractor. However, supply of cable tag &amp; markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil &amp; structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.</p> <p>(2.2) 66kV EHV Cable Accessories (2.2.7) Cable support structure system at GIS end (1 set= 1 no. with all associated work)</p>	16	Set	5,423.39	86,774.24	Both ends

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10	(2) 66kV EHV Cable & its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable & earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing & commissioning of cabling system along with installation, testing & commissioning of jointing & termination kit shall be done by OEM with assistance of contractor. However, supply of cable tag & markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil & structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.  (2.2) 66kV EHV Cable Accessories (2.2.8) Cable support structure system at Transformer end (1 set= 1 no. with all associated work)	16	Set	5,423.39	86,774.24	Both ends
11	(2) 66kV EHV Cable & its Accessories- 66kV, 1Cx500sqmm stranded Cu conductor XLPE insulated cable shall be laid in trench, to be filled with sand/ pipe rack/ hanger rack assembly. The activity shall further include cable jointing, if required, termination at ends, fixing of trefoil/ single clamps, earthing link box with/ without SVL and laying of bonding/ earthing cable. The supervision of installation of EHV cable & earthing/ bonding cable, fixing of earthing link box with/ without SVL, fixing of trefoil/ single clamps and fixing of support structure materials shall be done by OEM. In addition to this, testing & commissioning of cabling system along with installation, testing & commissioning of jointing & termination kit shall be done by OEM with assistance of contractor. However, supply of cable tag & markers, if applicable, small consumables, minor modifications in civil works, fabrication and welding etc. for completion of activities shall be in contractor's scope. Civil & structure works including supply and filling of sand for trench/ pipe rack assembly shall be in BHEL's scope. Please refer notes and relevant technical/ drawings specification for additional details.  (2.2) 66kV EHV Cable Accessories (2.2.9) Extending support for earthing/ grounding of EHV cable system including installation of rod electrode/ pipe electrode, connection with main grid etc. as per technical specification/ drawings. Supply of earthing materials shall be in scope of OEM/ BHEL. (1 set= 1 no. with all associated work)	16	Set	3,013.00	48,208.00	Both ends
<b>Total Amount (Rs.) - Excluding GST</b>					<b>63,59,531.18</b>	

**Note:**

1. Please refer technical specification attached for complete details of work and its requirements.
2. All support/ staging materials to be arranged by the contractor on its own.
3. All lifting tackles, pulleys, chain blocks and other required minor tools including torque wrenches and similar items shall be arranged by the contractor on its own.
4. Requirement of sand bags or any other shall be arranged by contractors on its own.

Price Schedule / Price Bid

NAME OF WORK :- ETC Works of 66 KV Cabling and its associated works at Captive Power Plant (CPP) for Visakh Refinery Modernization Project (VRMP), of Vishakhapatnam (Andhra Pradesh)  
TENDER SPECIFICATION NO.:-TBSM/HPCL-VRMP VIZAG /66 KV CABLING/ETC /TENDER/21-22, DATE 15.12.2021

Name of Bidder						
(This BOQ template must not modified/ Replaced by the bidder and same shall be uploaded after filling the relevant columns , else the bidder is liable to be rejected for this tender. Bidders has to be fill the Bidder Name and values only)						
Sl No.	Item Description	Quantity	Units	Estimated Rate in Rs.	Total Amount Without taxes (Rs.)	Total Amount ( in words)
1	Total amount as per rates in BOQ (as per Annexure-I) for "ETC Works of 66 KV Cabling and its associated works at Captive Power Plant (CPP) for Visakh Refinery Modernization Project (VRMP), of Vishakhapatnam (Andhra Pradesh). "- Excluding GST	1.00	Nos	63,59,531.18	63,59,531.18	Rs. Sixty Three Lakhs Fifty Nine Thousand Five Hundred Thirty One and paisa Eighteen Only
Total in Figures					63,59,531.18	Rs. Sixty Three Lakhs Fifty Nine Thousand Five Hundred Thirty One and paisa Eighteen Only
Quoted Rate in Figures			Select	Excess/Less/ at par		
Quoted Rate in Words						