

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP

NIT No.: TPCODL / CCG / 23-24 / 100000893

Open Tender Notification**For****Two Years Rate Contract for SITC of LT Cable and HT
ABC Cable Jointing KIT at TPNODL, TPCODL, &
TPWODL.****Tender Enquiry No.: TPCODL/CCG/23-24/100000893,
Due Date for Bid Submission: 15/Aug/2024 [17:00 Hrs.]****Centralized Contracts Group
Tata Power Odisha DISCOMs
1st Floor, Anuj Building, Plot No. 29, Satya Nagar,
Bhubaneswar – 751007****TPCODL TPNODL TPSODL TPWODL
(TATA Power and Odisha Government Joint Venture)**

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Centralized Contracts Group (CCG)

The Centralized Contracts Group (CCG) is a shared service group of four Tata Power Odisha Distribution Companies (DISCOMs) - TPCODL, TPNODL, TPSODL & TPWODL. CCG is responsible for carrying out tendering activities to cater to the purchasing needs of all four DISCOMs.

1.0 Event Information

Bids are invited in Two Bid system from interested Bidders to establish a Rate Contract as below:

Tender Enquiry No.	Work Description	EMD (Rs.) *	Tender Fee inclusive of GST (Rs.) **	Last Date and Time for payment of Tender Fee
TPCODL / CCG / 23-24 / 100000893	Two Years Rate Contract for Supply of LT Cable & HT ABC Cable Jointing KITS.	2.00 Lac	5,000	07/Aug/2024 17:00 Hrs

* EMD exempted for MSMEs registered in the State of Odisha.

** Tender fee – Rs. 1,000/- including GST. for MSMEs registered in the State of Odisha (Ref. Odisha MSME Preferential Norms^ for details on Odisha MSME support)

1.1 Scope of work

Bids are invited from interested Bidders to award Rate Contract (RC) for Supply, Installation-Testing and Commissioning (ITC) with repair of LT Cables and HT ABC Cable jointing Kit.

Detailed scope as stipulated elsewhere in this tender document.

Services	Description	UOM	Qty.	QTY	QTY	
Supply Part of Jointing Kit			TPCODL	TPWODL	TPNODL	Total
ST.TH. 11kV HT ABC XLPE 1X55 HS	HT ABC ST. THROUGH JOINTING KIT	EA	80	10	0	90
O/D 11kV HT ABC XLPE 1X55 HS	HT ABC O/D TERMINATION KIT	EA	30	10	0	40
ST.TH. 11kV HT ABC XLPE 1X95 HS	HT ABC ST. THROUGH JOINTING KIT	EA	40	10	0	50
O/D 11kV HT ABC XLPE 1X95 HS	HT ABC O/D TERMINATION KIT	EA	20	20	0	40
ST.TH. 11kV HT ABC XLPE 1X150 HS	HT ABC ST. THROUGH JOINTING KIT	EA	20	20	0	40
O/D 11kV HT ABC XLPE 1X150 HS	HT ABC O/D TERMINATION KIT	EA	10	10	0	20
ST.TH 1.1 kV XLPE 4X50 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	15	15
O/D 1.1 kV XLPE 4X50 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	20	20
ST.TH 1.1 kV XLPE 4X95 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	20	15	55
I/D 1.1 kV XLPE 4X95 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	10	10	0	20

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O/D 1.1 kV XLPE 4X95 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	10	20	40
ST.TH.1.1 kV XLPE 4X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	40	40
O/D 1.1 kV XLPE 4X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	20	20
ST.TH.1.1 kV XLPE 4X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	20	40	80
O/D 1.1 kV XLPE 4X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	10	40	60
I/D 1.1 kV XLPE 4X150 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	10	10	0	20
ST.TH.1.1KV XLPE 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60	10	40	110
O/D 1.1 kV XLPE 4X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30	10	40	80
I/D 1.1 kV XLPE 4X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	40	10	0	50
ST.TH.1.1 kV XLPE 4X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30	20	40	90
I/D 1.1 kV XLPE 4X300 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20	20	0	40
O/D 1.1 kV XLPE 4X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	20	40	70
ST.TH.1.1 kV XLPE 4X400 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	0	30	50
I/D 1.1 kV XLPE 4X400 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20	0	0	20
O/D 1.1 kV XLPE 4X400 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20	0	30	50
ST.TH.1.1 kV LT ABC XLPE 1X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	10	20	0	30
O/D 1.1 kV LT ABC XLPE 1X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	20	0	30
ST.TH.1.1KV XLPE 3.5X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50	0	0	50
O/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30	0	0	30
I/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	30	0	0	30
ST.TH.1.1KV XLPE 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X185 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X185 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30

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ST.TH.1.1KV XLPE 3.5X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV PVC 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV PVC 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X240 to 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60	0	0	60
Installation Part of Jointing Kit						
ST.TH. 11kV HT ABC XLPE 1X55 HS	HT ABC ST. THROUGH JOINTING KIT	EA	80	10	0	90
O/D 11kV HT ABC XLPE 1X55 HS	HT ABC O/D TERMINATION KIT	EA	30	10	0	40
ST.TH. 11kV HT ABC XLPE 1X95 HS	HT ABC ST. THROUGH JOINTING KIT	EA	40	10	0	50
O/D 11kV HT ABC XLPE 1X95 HS	HT ABC O/D TERMINATION KIT	EA	20	20	0	40
ST.TH. 11kV HT ABC XLPE 1X150 HS	HT ABC ST. THROUGH JOINTING KIT	EA	20	20	0	40
O/D 11kV HT ABC XLPE 1X150 HS	HT ABC O/D TERMINATION KIT	EA	10	10	0	20
ST.TH 1.1 kV XLPE 4X50 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	15	15
O/D 1.1 kV XLPE 4X50 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	20	20
ST.TH 1.1 kV XLPE 4X95 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	20	15	55
I/D 1.1 kV XLPE 4X95 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	10	10	0	20
O/D 1.1 kV XLPE 4X95 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	10	20	40
ST.TH.1.1 kV XLPE 4X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	40	40
O/D 1.1 kV XLPE 4X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	20	20
ST.TH.1.1 kV XLPE 4X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	20	40	80
O/D 1.1 kV XLPE 4X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	10	40	60
I/D 1.1 kV XLPE 4X150 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	10	10	0	20
ST.TH.1.1KV XLPE 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60	10	40	110

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O/D 1.1 kV XLPE 4X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30	10	40	80
I/D 1.1 kV XLPE 4X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	40	10	0	50
ST.TH.1.1 kV XLPE 4X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30	20	40	90
I/D 1.1 kV XLPE 4X300 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20	20	0	40
O/D 1.1 kV XLPE 4X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	20	40	70
ST.TH.1.1 kV XLPE 4X400 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	20	0	30	50
I/D 1.1 kV XLPE 4X400 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20	0	0	20
O/D 1.1 kV XLPE 4X400 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20	0	30	50
ST.TH.1.1 kV LT ABC XLPE 1X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	10	20	0	30
O/D 1.1 kV LT ABC XLPE 1X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	10	20	0	30
ST.TH.1.1KV XLPE 3.5X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50	0	0	50
O/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30	0	0	30
I/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	30	0	0	30
ST.TH.1.1KV XLPE 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X185 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X185 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV XLPE 3.5X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV PVC 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	0	0	30	30
O/D 1.1 kV PVC 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	0	0	30	30
ST.TH.1.1KV XLPE 3.5X240 to 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60	0	0	60

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Termination Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	90	0	30	120
Single Straight Thru Pit Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	80	0	30	110
Two Straight Thru Pit Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	140	0	10	150
Cable Laying in excess of 06 Mtr in Open Trench	BA shall provide required manpower with necessary tools & tackles for cable laying work	M	2000	0	0	2000
Cable Laying in excess of 10 Mtr in Open Trench		M	0	0	20	20
Cable Laying in excess of 10 Mtr in closed Trench		M	0	0	20	20
Use of JCB	BA shall provide JCB for excavation of joint pit / cable trench as per SLA	Hours	80	0	10	90
Provision of 7.5Ton crane service	PROVD/OPERT Farana 7.5 Ton for 12Hr for loading & unloading of material.Farana will be used at TPCODL Store/Site &same farana will be used at site for unloading.	TRP	60	0	0	60
Service of pneumatic hammer	BA shall provide pneumatic hammer to break road, asphalt, PCC for cable repair work. Required manpower will provided by BA	Hours	800	0	10	810
Usage of dewatering pump	BA will provide Dewatering pump set of 5HP / 10HP with required accessories for water drainage in cable trench	Hours	80	0	80	160
Laying PCC M20 for road repair	Providing and laying Plain Cement Concrete (PCC) of proportion (1:1.5:3). laying concrete, ramming, watering and curing etc. complete to required levels. including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work	M3	60	0	0	60

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Excavation of open trench with backfilling	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.	M3	700	0	0	700
Laying of HDPE from size 110mm to 200mm	Laying of HDPE from size 110mm to 200mm in open trench, ground etc.Laying of HDPE pipe inside open trench / Pole mounting/Tower mounting.Scope also includes providing# and laying all required consumable etc. for collar fixing and sealing of Pipe. (Excavation is excluded)	M	300	0	0	300
Supply & installation of cable/joint protective covering slab	Supply and Installation of covering slab including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPCODL specifications and drawing.	EA	300	0	0	300
Supply & Installation of cable/joint marker	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPCODL specifications and drawing.	EA	500	0	0	500
Transport through Tempo upto 70 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tempo (Magic, ACE,etc..) with labours as required (price per trip). Scope of work also include loading and unloading of materials.	EA	20	0	0	20
Sand Work in joint pit	Supplying and spreading, filling other works with fine sand under floors,ground etc as per EIC instruction. Scope of work also includes watering, ramming, consolidating and dressing complete and other works if required at site .	M3	150	0	0	150

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Supply & install earthing system	Bidder has to provide necessary civil material for construction of Earthing chamber, excavation & installation of incuding earthingpipe dia up to 40mm dia for length of 3Mtr.Scope also includes necessary nutbolt, 25 Kg Bentonide Power , connection & welding with incoming earth flat. The work to be executed as per TPCODL drawing & design	EA	30	0	0	30
S&I GI Flat for earthing (Flat 25X6)	SITC including loading , unloading & transportation of GI earthing Flat 25X6 including bending,welding and painting of joints with red oxide & bituminous paint on welded area	KG	200	0	0	200
Providing unskilled labor	Providing unskilled labor for Misc activities. One man-day i.e. for 12hr.	D	30	0	0	30
Vermin proofing of RMU & CSS cable compartment	BA will supply necessary manpower and material like M-Seal , bakelite sheet, glass putty, etc for Vermin Proofing of RMU/CSS Cable compartment.	EA	500	0	0	500
Preventive repair of LT Cable/joint	To attain for minor repair work of LT cable outer jacket repair, termination sleeve repairing, socket replacement, cable clamping etc. BA will provide all required manpower, tools & tackles for installation . Material will provide by TPCODL.	EA	100	0	0	100
Danger Sign writing on Pole	BA shall arrange for sign writing on pole/RMU/ CSS/Wall. BA shall provide paint, stensil and required manpower for sign writing.	EA	500	0	0	500
Thermal scanning of Cable Termination (each phase)	BA shall arrange to thermal scanning of cable end terminations and share report in said format. Required man and materials shall provided by BA. Thermal Camera shall provide by TPCODL.	EA	1000	0	0	1000
TRENCHLESS DIGGING WITH 200 MM DIA HDPE PIPE USING HDD MACHINE (INCLUDING SUPPLY OF HDPE PIPE AS PER IS 4894,PN4 CLASS PE 80		EA	0	0	20	20

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TRENCHLESS DIGGING WITH 200 MM DIA HDPE PIPE MANUALLY (INCLUDING SUPPLY OF HDPE PIPE AS PER IS 4894,PN4 CLASS PE 80	EA	0	0	20	20
Cable Laying in Excess of 20 meters	EA	0	0	20	20
33 kV GIS Termination Plug in / Plug Out services (3 X 400 Sqmm)	EA	0	0	20	20

^Note:**Odisha MSME Preferential Norms**

- **Tender Fees Relaxation:** To participate in the tender, MSMEs registered in the State of Odisha shall pay Rs.1,000/- including GST towards cost of tender paper.
- **Earnest Money Deposit (EMD) Exemption:** EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.
- **Qualification Requirement Relaxation:** Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.
- **Past Experience Relaxation:** instead of relying on the volumes / value of earlier Supplies / Projects, assessment of the Bidder shall be done on the basis of feedback from Customers. Past performance experience at Tata Power and its Group Companies shall supersede feedback from other Customers.
- **Reservation for MSME :** TP DISCOM shall procure at least 20% of the total volume of the procurement from MSME registered in the State of Odisha (however, it shall not apply where goods/services are not available with the MSME), subject to matching L1 discovered prices and meeting technical specifications including quality requirements.
- **Performance Bank Guarantee (PBG) Relaxation:** Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.

1.2 Availability of Tender Documents

The bidder can get primary information about the tender from the Newspaper advertisement. Tender documents can be downloaded from TP Odisha DISCOMs' websites: -

www.tpcentralodisha.com, www.tpnodl.com, www.tpwesternodisha.com, www.tpsouthernodisha.com

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Non-Refundable Tender Participation Fee, as indicated in tender document, to be submitted before last date of tender fee payment, in the form of direct deposit / NEFT / RTGS in the following bank account.

Account Name: TP Central Odisha Distribution Limited
Bank Name: State Bank of India,
IDCO Towers, Bhubaneswar
Bank Account No. : 10835304915
IFSC Code : SBIN007891

To receive online bidding link, eligible and Interested bidder shall send an email to Package Owner (Ref. Clause 4.0 for details) attaching duly signed and stamped letter on Bidder's letterhead, with following details, expressing their intent to bid against above tender in following format:

Sr No	Description	Bidder's Response
i)	Tender Enquiry No.	
ii)	Description of materials / Works Tendered	
iii)	Name and address of the bidding company	
iv)	Name of the authorized contact person	
v)	Contact No. of authorized person	
vi)	E-mail Id to which online ARIBA link to be sent	
vii)	Tender Fee details (Amount / NEFT-RTGS UTR No / Date) (Ref sec 1.2)	
viii)	GST No. of bidder	
ix)	MSME Certificate (if applicable)	
x)	Postal address of bidder for return of EMD BG	

E-mail has to be sent to <rajib.bhattacharya@tpwesternodisha.com> with copy to HOD-CCG < Umesh.Bhardwaj7@tpcentralodisha.com > before last date and time for payment of tender participation fee (Clause 1.3).

On receipt of the above letter, after due verification, ARIBA link for participation in the tender will be sent to bidder's e-mail address from ARIBA system. Bids shall be submitted only through online e-procurement platform, ARIBA. Any other form of bid submission shall not be accepted. **(Ref. Annexure XII for detailed instructions on bid submission in ARIBA)**

1.3 Calendar of Events

(a)	Date of sale/ availability of tender documents from Website	02.08.2024
(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in "Procedure to Participate in Tender"	07.08.2024, 17:00 Hours
(c)	Date & Time of Pre-Bid Meeting (If any)	NA

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(d)	Due Date of receipt of pre-bid queries by e-mail, if any	10.08.2024, 17:00 Hours
(e)	Due Date of Posting Consolidated replies to all the pre-bid queries as received	12.08.2024, 18:00 Hours
(f)	Due date and time of receipt of Bids	15.08.2024, 17:00 Hours
(g)	Date & Time of opening technical bids	15.08.2024, 17:00 Hours
(h)	Date & Time of opening of Price of qualified bids	To be notified to the successful bidders

Note: In the event of last date specified for submission of bids and date of opening of bids is declared as a closed holiday for TP Discom's office, the last date of submission of bids and date of opening of bids will be the day following working day at appointed times.

2.0 Pre- Qualification Criteria

Sr No	Parameter	Owner Requirement	Documents to be submitted by Bidder
A	Technical Pre-Qualification Requirements		
1	Technical Experience / Performance	<p>The bidder should have its own manufacturing facility to manufacture cable joints of the same or higher voltage level. Self-undertaking to be submitted in this regard. TP Odisha Dsicom reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.</p> <p>The bidder should have performance certificates for 2 years of satisfactory performance from at least 2 reputed companies (Any PSU, Govt Ulility sectors or power sectors in India) for similar or higher voltage rating of similar works. The work against these issued certificates should be completed in the last seven years from the date of bid submission. In case the bidder has a previous association with TP Odisha discom for similar products and services, the performance feedback for that bidder by TPC's User Group shall only be considered irrespective of performance certificates issued by any third organization. Copy of performance certificates to be submitted in this regard.</p>	<p>Factory License Certificate / MoA mentioning nature of Business.</p> <p>The performance certificate and contact details of the client need to be submitted</p>
B	Financial Pre-Qualification Requirements		
1	Commercial Capability	a) The average annual turnover of the bidder shall be a minimum of Rs. 5.0 Crs for any three of last five financial years. (FY 18-19, FY 19-20, FY 20-21, FY 21-22 & FY22-23) Copy of audited	Copy of audited P&L Account (with UDIN no.) to be submitted in this regard

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		Balance Sheet and P&L Account to be submitted in this regard. (UDIN no is mandatory for balance sheet.) b) Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.	
2	Experience	a)The bidder should have executed 100% of the tender quantity or a single order for 50% of tender quantity or 2 orders each for 30% tender quantity or 3 orders each for 25% tender quantity during last 3 years. Order copies /completion certificates to be submitted. The company should have their own service engineer and jointers on their role for giving demonstrations / training in case required on a short notice. b) Bidder should have the In-house testing facilities for acceptance test as per technical specifications enclosed with this tender document. Self-undertaking to be submitted in this regard. TPC reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.	Order copy to be provided
3	Statutory Compliances	The prospective Bidder(s) should be have following certificates- a. Valid GST Registration Certificate. b. Valid PAN No. c. Odisha State MSME Certificate (if applicable)	Certificate to be submitted

3.0 Evaluation Criteria

- The bids will be evaluated techno-commercially and on qualifying criteria of tender terms and conditions.
- The bids will be evaluated commercially on lot Basis for all-inclusive lowest cost as calculated in Schedule of Items [Annexure I]).
- Bidder has to mandatorily quote against each item of Schedule of Items [Annexure I]. Failing to do so, CCG may reject the bids.
- In case the bidder has a previous association with Odisha DISCOM for similar products, the performance feedback for that bidder from Odisha DISCOM's User Group shall only be considered irrespective of performance certificates issued by any third organization.

However, Odisha DISCOMs reserve the right to scrutinize and reject any of such existing vendors without assigning reason what so ever may be.

- Based on latest / previous years experiences of Tata Power / Tata Power group companies with BA, Odisha DISCOM reserves the right to disqualify the bidders during techno - commercial evaluation of the bid.

NOTE: In case a new bidder is not registered with DISCOM, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However, DISCOM reserves the right to carry out factory inspection and evaluation for any bidder prior to technical qualification.

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In case a bidder is found as Disqualified in the factory evaluation, their bid shall not be evaluated any further and shall be summarily rejected. The decision of DISCOM shall be final and binding on the bidder in this regard.

3.1 Price Basis

Price shall be fixed and firm during the contractual period.

4.0 Contact Information

All the bidders are requested to send their pre-bid queries (if any) against this tender through e-mail within the stipulated timelines. The consolidated reply to all the queries received shall be posted on website by the stipulated timelines as detailed in calendar of events.

Communication Details:

Package Owner:

Name: Rajib Bhattacharya
Contact No.: 9434210425
E-Mail ID: rajib.bhattacharya@tpwesternodisha.com

Escalation Level I:

Name: Umesh Bhardwaj, HoD- CCG
E-Mail ID: Umesh.Bhardwaj7@tpcentralodisha.com

Escalation Level II:

Name: Mr. Vipin Chauhan, Head -CCG
E-Mail ID: Vipin.Chauhan@tpnodl.com

5.0 Submission of Bid Documents

5.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document through e-tendering process.

All future correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc. shall be through E-Tender system (Ariba).

Bids shall be submitted in 3 (Three) parts:

5.1.1 First Part : EMD

EMD as applicable shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of Bank Guarantee / Bank Draft / Bankers Pay Order (issued from a Scheduled Bank) online NEFT/ RTGS transfer favoring 'TP Central Odisha Distribution Limited' payable at Bhubaneswar. The EMD BG has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted by CCG and the bid as submitted shall be liable for rejection. A separate **non-refundable tender fee** of the stipulated amount also needs to be transferred **online through NEFT/ RTGS** in case the tender document is downloaded from our website.

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TPCODL Bank Details for transferring Tender Fee and EMD is as below:

Account Name: TP CENTRAL ODISHA DISTRIBUTION LIMITED

Bank Name: SBI, IDCO Towers, Bhubaneswar

Bank Account No.: 10835304915

IFSC Code: SBIN0007891

Note- EMD is preferred in form of Bank Guarantee and to be delivered at the following address. However, in view of present situation if Bidder is finding it difficult to submit BG for EMD amount, they can do online transfer of EMD amount in the above-mentioned Account and submit proof of the same as part of Bid Submission.

-In such case, Tender Fee and EMD should be strictly 2 separate transactions else bids shall be rejected.

-Return of EMD from Bank Account is non-standard practice and the same may take more time than return of EMD BG.

EMD Original Hard Copy shall be delivered at the following address in Envelope clearly indicating Tender Reference/ Enquiry Number, Name of Tender and Bidder Name

“EMD (Earnest Money Deposit)”

“Two Years Rate Contract for SITC of HT Jointing KIT at TPCODL, TPNODL & TPWODL

Chief –Centralized Contracts Group

TP Central Odisha Distribution Limited

1st Floor, Anuj Building, Plot No. 29,

Satya Nagar, Bhubaneswar- 751007

Kind Attn.: Mr. Rajib Bhattacharya, Mob No.: 9434210425

**EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.*

The bidder shall furnish, as part of its bid, an EMD amounting as specified in the tender. The EMD is required to protect DISCOM against the risk of bidder's conduct which would warrant forfeiture.

The EMD shall be denominated in any of the following form:

- Bank Guarantee in favor of TP Central Odisha Distribution Limited payable at Bhubaneswar.
- Online transfer of requisite amount through NEFT/ RTGS.
- Bank Guarantee valid for 210 days after due date of submission.

Ref. GCC for Forma of Bank Guarantee

The EMD shall be forfeited in case:

- a) The bidder withdraws its bid during the period of specified bid validity.

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Or

- b) The successful Bidder does not
- accept the Purchase Order, or
 - furnish the required Performance Security Bank Guarantee

5.1.2 Second Part : Techno-Commercial Bid

Techno-Commercial bid shall contain the following documents. Absence of any of these may attract bid rejection:

1. Index Stating Document name & Page No./Document No. in bid. As illustrated below:

Index of Techno Commercial documents for Supply of HT Cables		
Tender Inquiry No- TPCODL/CCG/23-24/.....		
SI No	Description	Page No
1	Index of Documents *	
2	Formal Forwarding Letter to CCG- Odisha Discom	
3	EMD Scanned Copy	
4	Tender Fees Documentation (Scanned Copy)	
5	Self- attested PAN certificate (Scanned Copy)	
6	Self- attested GSTIN certificate(Scanned Copy)	
7	Self- attested MSME certificate (Scanned Copy)	
8	Stamped and Signed Tender Document (Page-1 to Page 20)	
9	Stamped and Signed Copy of Annexure II to Annexure XII (Page-22 to Page 30)	
10	Stamped and Signed Pre-bid Query Response -1	
11	Stamped and Signed Pre-bid Query Response -2	
12	Stamped and Signed Technical Specifications	
	Any Doc as applicable	
	GTPs & DRAWINGS	
13	Drawings As applicable	
14	QAP and Inspection Test Plan	
15	Undertaking regarding in house acceptance testing facility, GTP** & manufacturing facility and other as applicable duly signed with seal.	
16	Factory License duly self- attested.	

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17	Self- attested Organizational structure with Key persons	
18	List of man power department wise duly signed with seal.	
19	List of Plant & Machinery duly signed with seal.	
20	Copy of ISO 9001-2015 duly signed with seal. (as applicable)	
21	Copy of BIS Certification duly signed with seal. (as applicable)	
22	Any Other Technical Documents (as applicable)	
	Commercial Criterion	
23	PO Copies as per Tender Clause	
24	PO Completion Certificates	
25	Audited P&L Account / Co. Turnover Certificates with UDIN	
26	Self declaration for non-blacklisting duly signed with seal.	
27	Banker's Certificate duly self- attested.	
28	Xerox copy of cancelled cheque duly signed with seal.	
29	Authorization Letter / Power of Attorney (1 page)	
30	Any Other Documents (as applicable)	

***The type tests specified in technical specifications should have been carried out **within five years** (unless otherwise explicitly stated) prior to the date of opening of technical bids and test reports are to be submitted along with the bids. If type tests carried out are not within the five years prior to the date of bidding, the bidder will arrange to carry out type tests specified, at his cost. The decision to accept/ reject such bids rests with DISCOM.*

2. Indexing of the Content of Techno-commercial Bid may also be furnished per the Bidder's preference. But in that case, the above- mentioned table as well as the **Corresponding Page Nos.** need to be modified and furnished accordingly.

The technical bid shall be submitted through E-tender System (Ariba) only. Hard Copy of Technical Bids need not be submitted unless specifically asked for.

5.1.3 Third Part : Price Bid

Price Bid shall contain only the price details and strictly in format as mentioned in Annexure I along with explicit break up of basic prices and Taxes & duties etc. In case any discrepancy is observed between the item description

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stated in Schedule of Items mentioned in the tender and the price bid submitted by the bidder, the item description as mentioned in the tender document (to the extent modified through Corrigendum issued if any) shall prevail. The price bids containing any deviations/conditions shall be liable to be rejected.

Price Bid is to be submitted in soft copy through E-Tendering system (Ariba) only. Hard copy of Price Bid shall not be submitted.

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and CCG, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

5.2 Signing of Bid Documents

The bid must contain the name, residence and place of business of the person or persons making the bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.

The Bid being submitted must be signed by a person holding a **Power of Attorney** authorizing him to do so, certified copies of which shall be enclosed.

The Bid submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Bid on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Bid on behalf of the Company. Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with bid.

A bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent' or other designation without disclosing his principal will be rejected.

The Bidder's name stated on the Proposal shall be the exact legal name of the firm.

5.3 Mandatory documents required along with the Bid

1. EMD of requisite value and validity
2. Tender Fee.
3. Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.
4. Acceptance of Specification, drawing with filled in GTP as per Annexure II.
5. Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.
6. Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.
7. Duly filled in Annexure V and VI.
8. Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.
9. Copy of PAN, GST registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

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Please note that in absence of any of the above documents (as applicable), the bid submitted by a bidder shall be liable for rejection.

5.4 Deviation from Tender

Normally, the deviations to tender terms are not admissible and the bids with deviation are liable for rejection. Hence, the bidders are advised to refrain from taking any deviations on this Tender. Still in case of any deviations, all such deviations shall be set out by the Bidders, clause by clause in the 'Annexure III - Schedule of Deviations' and same shall be submitted as a part of the Technical Bid.

6.0 Bid Related Details**6.1 Bid Prices**

Bidders need to quote for all items as per the Price schedule attached in Annexure I. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various DISCOMs' sites. The all-inclusive prices offered shall be inclusive of all costs –Insurance, Transport, duties, taxes, levies paid or payable etc. during the execution of the supply work. Applicable GST to be specified clearly.

The quantity break up shown else-where other than Price Schedule may tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications/ Scope of Work/ SLA mentioned in the tender, shall be deemed to be included in prices quoted.

6.2 Bid Currencies

Prices shall be quoted in Indian Rupees Only unless otherwise stated explicitly.

6.3 Period of Validity of Bids

Bids shall remain valid for **180 days** from the due date of submission of the bid.

Notwithstanding clause above, CCG may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and responses thereto shall be made in writing.

6.4 Alternative Bids

Bidders shall submit Bids, which comply with the Bidding documents. Alternative bids will not be considered. The attention of Bidders is drawn to the provisions regarding the rejection of Bids in the terms and conditions, which are not substantially responsive to the requirements of the bidding documents.

6.5 Modifications and Withdrawal of Bids

The bidder is not allowed to modify or withdraw its bid after the Bid's submission. The EMD as submitted along with the bid shall be liable for forfeiture in such event.

7.0 Bid Opening & Evaluation**7.1 Bid Confidentiality**

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Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence CCG in processing of Bids or award decisions may result in rejection of the Bidder's Bid.

7.2 Technical Bid Opening

Technical Bids shall be opened online as per schedule mentioned in section 1.3, in CCG Office (1st Floor Conference room, Plot -29, Anuj Building Satya Nagar, Bhubaneswar). Bidders having authorization letter (format Annexed- XI) for attending bid opening from competent authority of respective Organizations, who may choose to be present physically / online at the time of tender opening. If the office is closed on the specified date of opening of the bids, the opening shall be done on the next working day at the same time. A technical bid must not contain any cost information whatsoever, else bids shall be liable to be rejected.

First the envelope marked "EMD" will be opened. Bids without EMD/cost of tender (if applicable) of required amount/ validity in prescribed format, shall be rejected.

Next, the technical bid of the bidders who have furnished the requisite EMD will be opened, one by one.

7.2.1 Preliminary Examination of Bids/Responsiveness

CCG will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are in order & format as detailed elsewhere in this document. CCG may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.

Prior to the detailed evaluation, CCG will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation. CCG reserves the right to reject non-responsive bids.

7.2.2 Techno Commercial Clarifications

Bidders need to ensure that the bids submitted by them are complete in all respects. To assist in the examination, evaluation and comparison of Bids, CCG/Engineering may at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to specifications and attempt will be made to bring all bids on a common footing. Any such clarification as sought shall have to be responded to bidder **within two working days**, post which the bids shall be liable to be rejected. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted owing to any clarifications sought.

7.2.3 Right of Acceptance/Rejection

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Bids are liable for rejection in absence of following documents:

- i. EMD of requisite value and validity.
- ii. Tender fee of requisite value.
- iii. Price Bid as per the Price Schedule mentioned in Annexure I (BOQ)
- iv. Necessary documents against compliance to Qualification Requirements mentioned in Clause 2.0 of this Tender Document.
- v. Filled in Schedule of Deviations as per Annexure III.
- vi. Filled in Schedule of Commercial Specifications as per Annexure IV.
- vii. Signed and filled in Specification and GTP as per Annexure II.
- viii. Duly filled and signed Annexure V and VI.
- ix. Receipt of Bid within the due date and time.

CCG reserves the right to accept/reject any or all the bids without assigning any reason thereof.

7.3 Price Bid Opening

Price Bids will be opened online for all technically qualified bidders on the dates as shall be informed to qualified bidders in CCG Office (First Floor Conference room, Plot -29, Anuj Building Satya Nagar, and Bhubaneswar). Bidders having authorization letter (format annexed) for attending bid opening from competent authority of respective Organizations shall be allowed to be present physically/online at the time of bid opening. If the office is closed on the specified date of opening of the bids, the opening shall be done on the next working day at the same time. The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of DISCOM without any further correspondence in this regard.

8.0 Market Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts. Bidders must agree to these rules prior to participating. In addition to other remedies available, CCG reserves the right to exclude a bidder from participating in future markets due to the bidder's violation of any of the rules or obligations contained in the General Condition of Contracts. A bidder who violates the market place rules or engages in behavior that disrupts the fair execution of the marketplace, may result in restriction of a bidder from further participation in the marketplace for a length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

- Failure to honor prices submitted to the marketplace
- Breach of terms as published in TENDER / NIT

9.0 Supplier Confidentiality

All information contained in this tender is confidential and shall not be disclosed, published or advertised in any manner without written authorization from CCG. This includes all bidding information submitted to the DISCOM. All tender documents remain the property of DISCOM and all suppliers are required to return these documents to DISCOM upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

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10.0 Reverse Auctions

CCG reserves the right to conduct the reverse auction for the products/ services being asked for in the tender. The terms and conditions for such reverse auction events shall be as per the Acceptance Form attached as Annexure VI of this document. The bidders along with the tender document shall mandatorily submit a duly signed copy of the Acceptance Form attached as Annexure VI as a token of acceptance for the same.

Bidders shall be allowed to participate in Reverse auction as per following criteria hence bidders are advised to quote their most competitive rates while submitting the bids to avoid disqualification from participation in Reverse Auction.

Reverse Auction shall be as per the below approach:

No of bidders allowed to participate in RA process shall be: Total No of bidders on whom tender would be split PLUS 2 more bidders

Illustrative example: Total no of qualified bidders is 10 & tender needs to split amongst 4 bidders.

PLUS 2 means (04 + 02 = 06) means lowest 6 bidders i.e., L1 to L6 bidders would be allowed in the RA process. Balance, H1 to H4 bidders would not be allowed in the RA process.

In case – Total no of qualified bidders is equal to or less than the **PLUS 2** number, all qualified bidders shall be allowed in the RA process.

Illustrative example: Total no of qualified bidders is 4 & tender needs to split amongst 2 bidders. PLUS 2 means (02 + 02 = 04), so all 4 qualified bidders would be allowed in the RA process

Illustrative example: Total no of qualified bidders is 3 & tender would be awarded to single party only. PLUS 2 means (01 + 02 = 03), so all 3 qualified bidders would be allowed in the RA process

11.0 Award Decision

DISCOM will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 3.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 7.2.1. The decision to place purchase order/LOI solely depends on CCG on bidder qualification & cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that CCG may deem relevant.

CCG reserves the right to split the order quantity wise/Line item wise among a minimum of 2 Nos. of Bidders. All bidders are advised to quote their most competitive rates against each line item. However, CCG reserves the right to adjust the splitting as per bidders' participation/qualification/any other unforeseen condition in tender.

DISCOM reserves the rights to award contract to one or more bidders so as to meet the delivery requirement or nullify award decision without assigning any reason thereof.

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In case any supplier is found unsatisfactory during delivery process, the award will be cancelled and DISCOM reserves right to award contract to other suppliers who are found fit.

12.0 Order of Preference / Contradiction

In case of contradiction in any part of various documents in tender, following shall prevail in order of preference:

1. Schedule of Items – Price Bid (Annexure I)
2. Technical Specifications (Annexure II)
3. Special Conditions of Contract (Clause 13.1)
4. Submission of Bid Documents (Clause 5.0)
5. Acceptance Form for Participation in Reverse Auction (Annexure VI)
6. General Conditions of Contract (Annexure VII)

13.0 Post Award Contract Administration

13.1 Special Conditions of Contract

1. Rate Contract shall be valid for a period of 24 months from the placement of the Contract. Release Order (RO) shall be placed as per the requirement of respective TP Odisha Discom. Rates shall remain firm throughout RC period.
2. Prices shall be on FOR Basis, inclusive of Transit Insurance/ Packing & Forwarding charges and shall be inclusive of unloading & stacking at Discom site / store locations.
3. Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 21 days of issuance of order. PBG applicable shall be 5% of RC as per GCC. PBG submitted shall be released after completion of applicable guarantee period plus one month. Guarantee period shall be 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract which ever is earlier.
4. BA shall submit GTP/ Drawing within 07 days from issuance of rate contract. If drawing is not approved by competent authority due to document shortfall or any changes are suggested, vendor has to resubmit new drawing/GTP/documents within 03 days of such intimation. BA shall offer for prototype inspection within 15 days of issuance of approved Drawings/GTP (if applicable). In case BA does not get necessary approvals for issuance of manufacturing clearances /CAT-A within mentioned / mutually agreed timelines, then CCG/TP Odisha Discoms reserve the right to cancel issued rate contract / release order and also reserve the right to forfeit EMD/PBG.
5. **Delivery Period** shall be 45 + 7 days (considering the approval of CAT-A / drawing / GTP) from date of receipt of release order for the first lot however for remaining lots the delivery period will be 45 days from RO date.

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6. **Payment Terms:** Supply Part:- On delivery of the materials in good condition and certification of acceptance by certified official, Associate shall submit the Bills/ Invoices in original in the name of respective Odisha Discom to Invoice Desk. The payment shall be released within 60 days from the date of submission of certified bills/ invoices
7. Service Part: - 100% Payment for Installation/repair shall be done within 30 days after successful Installation and certification from TP Discom's-In- Charge.
8. Pre-dispatch inspection, MDCC and LD shall be applicable as per GCC.
9. TP Odisha Discom reserves right to short close the issued Release Order / Rate contract, in case of any quality issues.
10. Any change in statutory taxes, duties and levies during the contract period shall be borne by respective TP Odisha Discom. However, in case of delay in supply owing to reasons not attributable to TP Odisha Discom, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TP Odisha Discom.
11. All other terms of GCC – Supply shall be applicable.

13.2 Drawing Submission and Approval

As per SCC, Clause number 13.1

13.3 Payment Terms

As per SCC, Clause number 13.1

14.0 Climate Change

Significant quantities of waste are generated during the execution of a project and an integrated approach for effective handling, storage, transportation, and disposal of the same shall be adopted. This would ensure the minimization of environmental and social impact to combat climate change. Please refer to the attached Environment Policy and Sustainability Policy (Annexure-X).

15.0 Ethics

TP DISCOMs are ethical organizations bound by Tata Code of Conduct. As a policy we lay emphasis on ethical practices across its entire domain. Bidder should ensure that they should abide by all the ethical norms and in no form either directly or indirectly be involved in unethical practice.

DISCOM work practices are governed by the Tata Code of Conduct which emphasizes on the following:

- We shall select our suppliers and service providers fairly and transparently.
- We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.

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- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.

Bidder is advised to refer Tata Code of Conduct (TCOC) attached for more information. For details, refer link: <https://www.tata.com/about-us/tata-code-of-conduct>

Any ethical concerns with respect to this tender can be reported to the following:

Mr. Pradip Sil (Chief Central Contracts Group): pradip.sil@tpcentralodisha.com

16.0 Specification and standards

As per Annexure II

17.0 General Condition of Contract

Any condition not mentioned above shall be applicable as per GCC attached as Annexure VII along with this tender.

18.0 Safety Policy and Safety Terms & Conditions

Annexure VIII attached along with this tender.

19.0 Tata Code of Conduct

Annexure IX attached along with this tender.

20.0 Environment & Sustainability Policy

Annexure X attached along with this tender.

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ANNEXURE-I : Price Schedule

Services	Description	UOM	QTY	Unit Price	Tax	Total unit price with Tax	Total Price
Supply Part of Jointing Kit			Total	(A)	(B)	(c)=A+B	(D)=(C)*Qty
ST.TH. 11kV HT ABC XLPE 1X55 HS	HT ABC ST. THROUGH JOINTING KIT	EA	90				
O/D 11kV HT ABC XLPE 1X55 HS	HT ABC O/D TERMINATION KIT	EA	40				
ST.TH. 11kV HT ABC XLPE 1X95 HS	HT ABC ST. THROUGH JOINTING KIT	EA	50				
O/D 11kV HT ABC XLPE 1X95 HS	HT ABC O/D TERMINATION KIT	EA	40				
ST.TH. 11kV HT ABC XLPE 1X150 HS	HT ABC ST. THROUGH JOINTING KIT	EA	40				
O/D 11kV HT ABC XLPE 1X150 HS	HT ABC O/D TERMINATION KIT	EA	20				
ST.TH 1.1 kV XLPE 4X50 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	15				
O/D 1.1 kV XLPE 4X50 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20				
ST.TH 1.1 kV XLPE 4X95 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	55				
I/D 1.1 kV XLPE 4X95 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
O/D 1.1 kV XLPE 4X95 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	40				
ST.TH.1.1 kV XLPE 4X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	40				
O/D 1.1 kV XLPE 4X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20				
ST.TH.1.1 kV XLPE 4X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	80				
O/D 1.1 kV XLPE 4X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	60				
I/D 1.1 kV XLPE 4X150 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
ST.TH.1.1KV XLPE 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	110				
O/D 1.1 kV XLPE 4X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	80				
I/D 1.1 kV XLPE 4X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	50				

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ST.TH.1.1 kV XLPE 4X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	90				
I/D 1.1 kV XLPE 4X300 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	40				
O/D 1.1 kV XLPE 4X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	70				
ST.TH.1.1 kV XLPE 4X400 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50				
I/D 1.1 kV XLPE 4X400 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
O/D 1.1 kV XLPE 4X400 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	50				
ST.TH.1.1 kV LT ABC XLPE 1X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV LT ABC XLPE 1X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50				
O/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
I/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X185 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X185 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV PVC 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV PVC 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X240 to 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60				
ST.TH. 11kV HT ABC XLPE 1X55 HS	HT ABC ST. THROUGH JOINTING KIT	EA	90				
O/D 11kV HT ABC XLPE 1X55 HS	HT ABC O/D TERMINATION KIT	EA	40				

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ST.TH. 11kV HT ABC XLPE 1X95 HS	HT ABC ST. THROUGH JOINTING KIT	EA	50				
O/D 11kV HT ABC XLPE 1X95 HS	HT ABC O/D TERMINATION KIT	EA	40				
ST.TH. 11kV HT ABC XLPE 1X150 HS	HT ABC ST. THROUGH JOINTING KIT	EA	40				
O/D 11kV HT ABC XLPE 1X150 HS	HT ABC O/D TERMINATION KIT	EA	20				
ST.TH 1.1 kV XLPE 4X50 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	15				
O/D 1.1 kV XLPE 4X50 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20				
ST.TH 1.1 kV XLPE 4X95 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	55				
I/D 1.1 kV XLPE 4X95 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
O/D 1.1 kV XLPE 4X95 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	40				
ST.TH.1.1 kV XLPE 4X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	40				
O/D 1.1 kV XLPE 4X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	20				
ST.TH.1.1 kV XLPE 4X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	80				
O/D 1.1 kV XLPE 4X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	60				
I/D 1.1 kV XLPE 4X150 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
ST.TH.1.1KV XLPE 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	110				
O/D 1.1 kV XLPE 4X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	80				
I/D 1.1 kV XLPE 4X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	50				
ST.TH.1.1 kV XLPE 4X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	90				
I/D 1.1 kV XLPE 4X300 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	40				
O/D 1.1 kV XLPE 4X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	70				
ST.TH.1.1 kV XLPE 4X400 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50				
I/D 1.1 kV XLPE 4X400 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	20				
O/D 1.1 kV XLPE 4X400 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	50				
ST.TH.1.1 kV LT ABC XLPE 1X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				

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O/D 1.1 kV LT ABC XLPE 1X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	50				
O/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
I/D 1.1 kV XLPE 3.5X240 HS	LT XLPE HS INDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X185 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X185 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X150 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X150 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X300 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV XLPE 3.5X300 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV PVC 3.5X120 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	30				
O/D 1.1 kV PVC 3.5X120 HS	LT XLPE HS OUTDOOR TERMINATION KIT	EA	30				
ST.TH.1.1KV XLPE 3.5X240 to 4X240 HS	ST. THROUGH LT XLPE HS JOINTING KIT	EA	60				
Termination Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	120				
Single Straight Thru Pit Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	110				
Two Straight Thru Pit Digging	BA shall provide required manpower with necessary tools & tackles for digging work	EA	150				
Cable Laying in excess of 06 Mtr in Open Trench	BA shall provide required manpower with necessary tools & tackles for cable laying work	M	2000				
Cable Laying in excess of 10 Mtr in Open Trench		M	20				
Cable Laying in excess of 10 Mtr in closed Trench		M	20				

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Use of JCB	BA shall provide JCB for excavation of joint pit / cable trench as per SLA	Hours	90				
Provision of 7.5Ton crane service	PROVD/OPERT Farana 7.5 Ton for 12Hr for loading & unloading of material.Farana will be used at TPCODL Store/Site &same farana will be used at site for unloading.	TRP	60				
Service of pneumatic hammer	BA shall provide pneumatic hammer to break road, asphalt, PCC for cable repair work. Required manpower will provided by BA	Hours	810				
Usage of dewatering pump	BA will provide Dewatering pump set of 5HP / 10HP with required accessories for water drainage in cable trench	Hours	160				
Laying PCC M20 for road repair	Providing and laying Plain Cement Concrete (PCC) of proportion (1:1.5:3). laying concrete, ramming, watering and curing etc. complete to required levels. including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work	M3	60				
Excavation of open trench with backfilling	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.	M3	700				
Laying of HDPE from size 110mm to 200mm	Laying of HDPE from size 110mm to 200mm in open trench, ground etc.Laying of HDPE pipe inside open trench / Pole mounting/Tower mounting.Scope also includes providing# and laying all required consumable etc. for collar fixing and sealing of Pipe. (Excavation is excluded)	M	300				
Supply & installation of cable/joint protective covering slab	Supply and Installation of covering slab including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPCODL specifications and drawing.	EA	300				

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Supply & Installation of cable/joint marker	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPCODL specifications and drawing.	EA	500				
Transport through Tempo upto 70 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tempo (Magic, ACE,etc..) with labours as required (price per trip). Scope of work also include loading and unloading of materials.	EA	20				
Sand Work in joint pit	Supplying and spreading, filling other works with fine sand under floors,ground etc as per EIC instruction. Scope of work also includes watering, ramming, consolidating and dressing complete and other works if required at site .	M3	150				
Supply & install earthing system	Bidder has to provide necessary civil material for construction of Earthing chamber, excavation & installation of incuding earthingpipe dia up to 40mm dia for length of 3Mtr.Scope also includes necessary nutbolt, 25 Kg Bentonide Power , connection & welding with incoming earth flat. The work to be executed as per TPCODL drawing & design	EA	30				
S&I GI Flat for earthing (Flat 25X6)	SITC including loading , unloading & transportation of GI earthing Flat 25X6 including bending,welding and painting of joints with red oxide & bituminous paint on welded area	KG	200				
Providing unskilled labor	Providing unskilled labor for Misc activities. One man-day i.e. for 12hr.	D	30				
Vermin proofing of RMU & CSS cable compartment	BA will supply necessary manpower and material like M-Seal , bakelite sheet, glass putty, etc for Vermin Proofing of RMU/CSS Cable compartment.	EA	500				

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Preventive repair of LT Cable/joint	To attain for minor repair work of LT cable outer jacket repair, termination sleeve repairing, socket replacement, cable clamping etc. BA will provide all required manpower, tools & tackles for installation . Material will provide by TPCODL.	EA	100				
Danger Sign writing on Pole	BA shall arrange for sign writing on pole/RMU/ CSS/Wall. BA shall provide paint, stensil and required manpower for sign writing.	EA	500				
Thermal scanning of Cable Termination (each phase)	BA shall arrange to thermal scanning of cable end terminations and share report in said format. Required man and materials shall provided by BA. Thermal Camera shall provide by TPCODL.	EA	1000				
TRENCHLESS DIGGING WITH 200 MM DIA HDPE PIPE USING HDD MACHINE (INCLUDING SUPPLY OF HDPE PIPE AS PER IS 4894,PN4 CLASS PE 80		EA	20				
TRENCHLESS DIGGING WITH 200 MM DIA HDPE PIPE MANUALLY (INCLUDING SUPPLY OF HDPE PIPE AS PER IS 4894,PN4 CLASS PE 80		EA	20				
Cable Laying in Excess of 20 meters		EA	20				
33 kV GIS Termination Plug in / Plug Out services (3 X 400 Sqmm)		EA	20				

**Mandatory to quote in all line items.*

NOTE:

- Prices shall be firm till the validity of the contract (As applicable).
- The bids will be evaluated commercially on lot basis. Lot will be decided on the basis of final evaluation.
- The unit price to be entered in column "F" of above table is unit price of the tendered item and exclusive of GST.

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All itemized prices are to be quoted on FOR basis at TPCODL Store -Cuttack or Bhubaneswar, TPWODL Store-Burla, Sambalpur and TPNODL Store- Sovarampur, Balia, Balasore, Odisha, should be inclusive of freight, insurance, loading & unloading, handling charges and any other charges which may be applicable.

- Issuance of Release Orders (RO) shall be done by respective Discoms as per their requirement.
- The material shall be delivered as per the location captured in the release order.
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- The bidder must fill each and every column of the above format. ***Mentioning “extra/inclusive”/other conditions in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.
- The quantity mentioned above are for evaluation purpose only and may vary as per actual site requirement.

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ANNEXURE-II : Technical Specification

Attached separately with Tender.

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CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893****ANNEXURE III : Schedule of Deviations**

Bidders are advised to refrain from taking any deviations on this TENDER. Still in case of any deviations, all such deviations from this tender document shall be set out by the Bidders, Clause by Clause in this schedule and submit the same as a part of the **Technical Bid**.

Unless specifically mentioned in this schedule, the tender shall be **deemed** to confirm the specifications:

S. No.	Clause No.	Tender Clause Details	Details of deviation with justifications

By signing this document we hereby withdraw all the deviations whatsoever taken anywhere in this bid document and comply to all the terms and conditions, technical specifications, scope of work etc. as mentioned in the standard document except those as mentioned above.

Seal of the Bidder:

Signature:

Name:

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(The bidders shall mandatorily fill in this schedule and enclose it with the offer Part I: Technical Bid. In the absence of all these details, the offer may not be acceptable.)

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
a.	If variable price variation on clause given	Yes / No
b.	Ceiling	----- %
c.	Inclusive of GST	Yes / No (If Yes, indicate % rate)
d.	Inclusive of transit insurance	Yes / No
2.	Delivery Clause acceptable	Yes / No
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of bid)	Yes / No
8.	Inspection during stage of manufacture	Yes / No
9.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg'n No.)

Seal of the Bidder:***Signature:******Name:***

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CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893****ANNEXURE V : Checklist of all the documents to be submitted with the Bid**

Bidder has to mandatorily fill in the checklist mentioned below:

S. No.	Documents attached	Yes / No / Not Applicable
1	EMD of required value	
2	Tender Fee as mentioned in this tender	
3	Signed copy of this tender as an unconditional acceptance	
5	Duly filled schedule of commercial specifications (Annexure IV)	
6	Sheet of commercial/technical deviation if any (Annexure III)	
7	Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/IEC (CPRI/ERDA/other certified agency) if applicable	
14	Project/supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/Performance Certificates	
17	Credit rating/solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/untrained Manpower	

Seal of the Bidder:***Signature:******Name:***

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CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893****ANNEXURE VI : Acceptance form for Participation in Reverse Auction Event***(To be signed and stamped by the bidder)*

In a bid to make our entire procurement process more fair and transparent, CCG intends to use the reverse auctions as an integral part of the entire tendering process. All the bidders who are found as technically qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. CCG shall provide the user id and password to the authorized representative of the bidder. *(Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).*
2. CCG will make every effort to make the bid process transparent. However, the award decision by CCG would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of CCG, bid process, bid technology, bid documentation and bid details.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. In case of bidding through Internet medium, bidders are further advised to ensure availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitch, internet response issues, software or hardware hangs, power failure or any other reason shall not be the responsibility of CCG.
6. In case of intranet medium, CCG shall provide the infrastructure to bidders. Further, CCG has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case of an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out-rightly rejected.
8. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR at Discom site / store.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for event time extension of auction event shall be considered by CCG.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all-inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

[Signature & Stamp of Bidder]

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CENTRALIZED CONTRACTS GROUP

NIT No.: TPCODL / CCG / 23-24 / 100000893

ANNEXURE VII : General Conditions of Contract

Attached Separately with Tender

ANNEXURE VIII : Safety Policy and Safety Terms & Conditions

Attached Separately with Tender

ANNEXURE IX : Tata Code of Conduct

Attached Separately with Tender

Also Refer: <https://www.tata.com/about-us/tata-code-of-conduct>

ANNEXURE X : Environment & Sustainability Policy

Attached Separately with Tender

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893****ANNEXURE XI : Authorization Letter Format**

(To be presented by the authorized person at the time of opening of Bid on the letter head of Bidder and should be signed by an Authorized Signatory with Name and Seal of the Company)

Chief - Central Contracts Group

Tata Power Odisha DISCOMs

Plot-29 Anuj Building

Satya Nagar Bhubaneshwar

SUB: Tender for**Ref: Tender No.**..... **dated.**

Dear Sir,

This has reference to your above Tender. Mr. / Miss / Mrs. _____ is hereby authorized to attend the bid opening of the above Tender on _____ on behalf of our organization.

The specimen signature is attested below:

Specimen Signature of Representative

Signature of Authorizing Authority
Name & Designation of Authorizing Authority

NOTE: This Authorization letter is to be carried at the time of Bid Opening
--

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893****ANNEXURE XII : Instructions to Bidder for participation in ARIBA System**

Step 1: Eligible and Interested bidder shall send an email to Package Owner (Ref. Clause 4.0 for details) attaching duly signed and stamped letter on Bidder's letterhead, with following details, expressing their intent to bid against above tender:

Sr No	Description	Bidder's Response
i)	Tender Enquiry No.	
ii)	Description of materials / Works Tendered	
iii)	Name and address of the bidding company	
iv)	Name of the authorized contact person	
v)	Contact No. of authorized person	
vi)	E-mail Id to which online ARIBA link to be sent	
vii)	Tender Fee details (Amount / NEFT-RTGS UTR No / Date) (Ref sec 1.2)	
viii)	GST No. of bidder	
ix)	MSME Certificate (if applicable)	
x)	Postal address of bidder for return of EMD BG	

E-mail has to be sent to <Rajib.bhattacharya@tpwesternodisha.com> with copy to <Umesh.Bhardwaj7@tpcentralodisha.com > before “Last date and time for payment of Tender Participation Fee”.

Step 4: On receipt of the document as mentioned in Step 3 above and after due verification of the same, ARIBA link for participation in the tender will be sent to bidder's e-mail address from ARIBA system.

Step 5: In this e-mail online link as “**Click Here**” shall be there to access the event & participate in the tender.

Step 6: First time bidders need to **Sign Up** for accessing the event. Create User Name and password as mentioned in Sign Up page. A one-page registration screen will open for first time user. All * mark mandatory field to be filled in.

Those who are already having User Name and password for accessing events, may LOGIN using same User Name and password. (Bidder's user name and password for their other customer shall not be applicable for TPCODL / TPWODL / TPNODL / TPSODL)

Step 7: Post login, access the RFQ

Step 8: After review and downloading of all documents click on “**Review Pre-requisites**”

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 23-24 / 100000893**

Step 9: Review and accept **“Bidder Agreement”**.

Step 10: Tender document (PDF) can be downloaded from relevant section in Ariba Portal

Step 11: Technical Bid Submission: Bidder has to attach pdf version of technical bid in section relevant to technical bid submission. Uploading any price related information in this section shall lead to bidder rejection.

Step 12: Price Bid Submission: Price schedule as attached in relevant section has to be downloaded. Price and tax details to be filled-in as per the format. PDF version of duly filled price bid to be uploaded in relevant section. Price bid to be mandatorily signature & sealed by authorized person on Company letter head. For Price Bid put all the unit price and taxes and duties in provided field. Put "NA" in not applicable field.

Step 13: After successfully uploading Techno commercial offer and price part, click - **“Submit Entire Response”**

STANDARD TECHNICAL SPECIFICATION COVER SHEET

Specification No. : ENG-HV-2016

Specification Name : Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11KV Power Cable

BARSHA BANDITA	MILAN MAITY	K GOVINDARAJ	Syed Mohammed Yousuf Raja	KHAJAN BHARDWAJ	POURUSH GARG
Prepared by	Reviewed by	Reviewed by	Reviewed by	Approved by	Released by
TPCODL	TPNODL	TPWODL	TPSODL	TPCODL	TPCODL
10-01-2023	10-01-2023	11-01-2023	12-01-2023	12-01-2023	12-01-2023

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Specification No: [ENG-HV-2016](#)

Specification Name:

Technical Specification For Heat Shrinkable
Straight through Joint & Termination for 11kV
Power Cable

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Specification No: [ENG-HV-2016](#)

Specification Name:

Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

1. SCOPE:

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of 11 kV Heat Shrink Cable Straight through Joints and Terminations with all accessories and necessary training for trouble free & efficient performance.

2. APPLICABLE STANDARDS:

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with latest revisions of relevant Indian Standards/ IEC and shall conform to the regulations of local statutory authorities.

SL. No.	IEC/IS	Description
1	IS-13573(part2): 2011	Test requirements - Cable accessories for extruded power cables (for working voltages 3.3 kV and up to including 33 kV)
2	IS 7098(part2):2011	Cross-linked polyethylene insulated thermoplastic sheathed cables (for working voltages from 3.3 kV up to and including 33 kV)
3	IS 692 : 1994	Paper insulated lead sheathed cables for rated voltages up to and including 33 kV
4	IEC 60502 : 2009	Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 30 kV
5	ASTM D-2303	Standard Test Methods for Liquid Contaminant, Inclined-plane tracking and Erosion of insulating materials
6	ASTM D-2671	Standard Test Methods for Heat Shrinkable Tubing
7	ENA TS 09-13:1981	High Voltage Heat Shrinkable Components for use with HV solid type cables up to and including 33 kV
8	IEC 61238(part1) : 2003	Test methods and requirements - Compression and mechanical connectors for power cables for rated voltages up to 30 kV
9	IS 8308 : 2003	Compression type tubular in-line connectors for Aluminium conductors of insulated cables
10	IS 8309 : 2003	Compression type tubular terminal ends for Aluminium conductors of insulated cables
11	IS 2633:1986	Method for testing of uniformity of zinc coating
12	IS 4826 : 1979	Hot dipped galvanized coatings on round steel wires
13	IS 12444:1988	Continuously Cast and Rolled Electrolytic Copper Wire Rods for electrical conductors



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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

SL. No.	IEC/IS	Description
14	IS 191	Copper
15	IS 10810	Methods of test for cables
16	IEC 60216 part 2	Determination of thermal endurance properties of electrical insulating materials
17	IEC 60216 part 8	Instructions for calculating thermal endurance characteristics using simplified procedures

3. CLIMATIC CONDITIONS:

SL.NO.	CONDITONS	VALUES
1	Max. altitude above sea level	1200m
2	Max. Ambient Temperature	50 °C
3	Max. Daily average ambient temp	35 °C
4	Min Ambient Temp	0 °C
5	Maximum temperature attainable by an object exposed to sun	60 °C
6	Maximum Humidity	95%
7	Minimum Humidity	10%
8	Average No. of thunderstorm days per annum	70
9	Average Annual Rainfall	150 cm
10	Average No. of rainy days per annum	120
11	Thermal Resistivity of soil	150 Deg. Ccm/W
12	Wind Pressure	126 kg/sq. m up to an elevation of 10 meter.
14	Earthquakes of intensity in horizontal direction	equivalent to seismic acceleration of 0.3g
15	Earthquakes of intensity in vertical direction	equivalent to seismic acceleration of 0.15g
16	Wind velocity	300 km/hr.

Environmentally, some of the regions, where the work will take place include coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor insulators. Some places are in heavily industrial polluted areas. Therefore, Outdoor material

and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive and humid coastal atmosphere.

The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1 g.

4. GENERAL TECHNICAL REQUIREMENTS:

4.1 TYPES OF CABLES

A. 11 kV XLPE Insulated Underground Cables as per IS 7098 – 2: 11 kV ('E)

- a) A2XCWY- (Aluminium stranded compacted conductor, XLPE insulation, copper tape screen, wire GI armour, PVC sheath)
- b) A2XCWaY -(Aluminium conductor, XLPE insulation, copper tape screen, Aluminium wire armour, PVC sheath)
 - i) 3CX70 sq.mm. A2XCWY/A2XFY
 - ii) 3CX95 sq.mm. A2XCWY/A2XFY
 - iii) 3CX120 sq.mm. A2XCWY/A2XFY
 - iv) 3CX150 sq.mm. A2XCWY/A2XFY
 - v) 3CX185 sq.mm. A2XCWY/A2XFY
 - vi) 3CX240 sq.mm. A2XCWY/A2XFY
 - vii) 3CX300 sq.mm. A2XCWY/A2XFY
 - viii) 3CX400 sq.mm. A2XCWY/A2XFY
 - ix) 1CX400 sq.mm A2XCWaY
 - x) 1CX300 sq.mm A2XCWaY
 - xi) 1CX630 sq.mm. A2XCWaY
 - xii) 1CX1000 sq.mm. A2XCWaY
 - xiii) HT AB- 55/95/120/150 sq.mm. – Straight Through Jointing/ Outdoor Jointing

B. HT Aerial Bunched Cables with Aluminium alloy catenary : 11 kV (E)

- a) A2XCY- (Aluminium stranded compacted conductor, XLPE insulation, copper tape screen, PVC sheath)
- b) A2XC2Y- (Aluminium stranded compacted conductor, XLPE insulation, copper tape screen, HDPE sheath)



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- c) A2XWaY- (Aluminium stranded compacted conductor, XLPE insulation, Aluminium wire screen, PVC sheath)
 - i) 3CX95 sq.mm. A2XC2Y/ A2XC2Y/ A2XWaY
 - ii) 3CX150 sq.mm. A2XC2Y/ A2XC2Y/ A2XWaY
 - iii) 1CX55 sq.mm. A2XC2Y/ A2XC2Y/ A2XWaY
 - iv) 1CX95 sq.mm. A2XC2Y/ A2XC2Y/ A2XWaY
 - v) 1CX150 sq.mm. A2XC2Y/ A2XC2Y/ A2XWaY

C. PILCA Insulated Cables as per IS 692: 11 kV, (E) Belted APLST

(Al stranded sector shaped, paper insulated, lead sheath, steel tape sheath).

- i) 3CX150 sq.mm. Belted APLST
- ii) 3CX240 sq.mm. Belted APLST
- iii) 3CX300 sq.mm. Belted APLST

4.2 According to standard sizes of cables, following types of cable joints and terminations shall be required:

Type & size of cable	Type of Joint	Type of connector
3CX70, 3CX95, 3CX120, 3CX150, 3CX185, 3CX240, sq.mm. XLPE insulated cable	Indoor termination	Compression lug
	Outdoor termination	Compression lug
	Straight through joint	Compression lug
3CX95, 3CX120, 3CX185 sq.mm. XLPE insulated cable	Indoor termination RMU	Mechanical connector
3CX300, 3CX400 sq.mm. XLPE insulated cable	Indoor termination	Mechanical connector
	Outdoor termination	Compression lug
	Straight through joint	Mechanical connector
1CX300, 1CX400, 1CX630, 1CX1000 sq.mm. XLPE insulated cable	Indoor termination	Mechanical connector
	Outdoor termination	Mechanical connector
	Straight through joint	Mechanical connector
1CX55, 1CX95, 1CX150 sq.mm. HT AB insulated cable	Outdoor termination joint	Compression lug
	Straight through joint	Compression lug
3CX185 – 400 sq.mm. XLPE	Straight through joints between XLPE insulated cables	Mechanical connector

4.3 General requirement for Heat Shrinkable Jointing and Termination kit:

- a) The jointing kit containing heat shrinkable tubing, mastics and other accessories for making a complete joint and termination shall be designed to meet TPCODL/TPWODL/TPNODL/TPSODL specification, ENA TS 09-13, IEC 60502 and IS 13573, part-2 and other relevant standards.
- b) Cable joint and termination material shall not be adversely affected in any manner even after contact with material used in cable construction and material used as accessories in the construction of cable joints and terminations and there will be no chance of corrosion developing on any metal surface.
- c) Assembled jointing kit components shall perform without distress in system with parameters (mentioned below):

S. No.	Parameter	Units	Requirement
1	Max. Withstand System Voltage	kV	12
2	Partial Discharge at 1.73 U _o	pC	<10
3	Impulse Peak Withstand	kV	75 kV
4	Continuous operation withstand Temperature	°C	90
	Short Circuit withstand temperature	°C	250
5	Withstand short circuit current	kA/1Sec	As per Size of Conductors
6	Storage Temperature Range	°C	-10°C to + 45°C
7	Shelf life of kit components excluding mastic and solution	Years	Min. 5
8	Shelf life of mastic and solution	Years	Min. 2

4.4 General Technical Particulars for Heat Shrinkable Insulation Tubing/ Sleeves/ Wrap around Sleeve:

SL. No.	Parameter	Requirement
1	Visual Examination	Free from protrusions, pinholes, cracks, nicks and other visible defects.
2	Wall thickness Ratio	0.6 or 60% (Minimum at any two points of measurements)
3	Internal diameter of tube after full recovery	Shall not be higher than as specified in approved BOM / GTP
4	Longitudinal change	10% Max.



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SL. No.	Parameter	Requirement
5	Electric Strength	10 KV /mm (Minimum)
6	Tensile Strength	10 N/mm ² (Minimum) and (8 N/mm ² for anti-tracking)
7	Ultimate Elongation	200% (Minimum)
8	Heat Shock	No splitting, cracking, dripping or flowing after 30 minutes at 200°C Min. (For stress control tube: 30 Minutes at 250°C Min.)
9	Low Temperature Flexibility	No cracking after 4 hrs. at minus -20°C Max.
10	Volume Resistivity	1x 10 ¹⁰ Ohm- meter (Minimum) (For stress control, tube VR: 1x 10 ⁷ Ohm-meter min.)
11	Tracking resistance	No tracking, erosion to top surface or flame failure after 1hr @ 2.5KV 1hr @2.7KV 1Hr@ 3.0 KV 20 min@ 3.25KV
12	Flame Retardant (Applicable only for Anti tracking Tubes/ sleeves)	After 1-minute burn: Burnt or charred length 250 mm max.

4.5 General Technical Particulars for Heat Shrinkable moulded components/ Breakouts/Weather sheds

Sl. No.	Parameter	Specified limit
1	Visual Examination	Free from protrusions, pinholes, cracks, nicks and other visible defects.
2	Wall thickness Ratio	0.6 or 60% (Minimum at any two points of measurements)
3	Internal diameter of tube after full recovery	Shall not be higher than as specified in approved BOM / GTP.
4	Longitudinal change	25% Max.
5	Dielectric Strength	10 KV /mm (Minimum)
6	Tensile Strength	8 N/mm ² (Minimum)
7	Ultimate Elongation	200% (Minimum)
8	Heat Shock	No splitting, cracking, dripping or flowing after 30 minutes at 250°C Min.



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Specification Name:

Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

Sl. No.	Parameter	Specified limit
9	Low Temperature Flexibility	No cracking after 4 hrs. @ minus -20°C Max.
10	Volume Resistivity	1x 10 ¹⁰ Ohm- meter (Minimum)
11	Flame Retardant (For anti-tracking moulded components)	After 1-minute burn: Burnt or charred length 250mm max.

4.6 Service Support:

Bidder shall have own setup in Odisha for jointing and termination services along with supervision and other necessary allied services for ensuring quality of installed jointing and terminations.

5. GENERAL CONSTRUCTION:

5.1 Components of Indoor/ Outdoor Termination Kit:

Termination kit shall be designed based on heat shrink technology and shall be suitable for installation for 11 kV, three core and single core aluminum conductor, XLPE insulated (in line with TPCODL/TPWODL/TPNODL/TPSODL Specification for underground and AB cable, IS 7098-part 2, and IS 13573 Part 2 &3).

Length of 11KV terminations (from bottom of breakout to center of lughole) shall be:

- i) HT ABC - 450mm
- ii) 1core cable I/D & O/D - 550 mm
- iii) 3 core cable I/D & O/D - 1000 mm
- iv) 3 core cable I/D RMU - 1000 mm

S. No.	Components	Requirement
1	Compression Lugs/ Tinned coated Mechanical Lugs	<p><u>Compression Lugs:</u></p> <ul style="list-style-type: none"> a) Material: Aluminium b) All Aluminum lugs with anti-corrosive paste shall be long barrel type as per IS 8309: 2003. c) Dimensions shall be as annexure-I of this specification. d) 1000mm² Aluminum lugs shall be without palm hole. e) Conductivity of ferrule shall be as per IS 8309:2003. <p><u>Mechanical Lugs:</u></p> <ul style="list-style-type: none"> a) Tinned coated Aluminium 185-400 mm²/ 630mm²/1000mm² b) Type Test as per IEC 61238(part1):2003 c) Dimensions shall be as annexure-I of this specification.

S. No.	Components	Requirement																																				
		<p>d) Approved make NILLED, PFISTERER, NEXANS, TYCO (GERMANY).</p> <p>e) Dimensions shall be as annexure-I of this specification.</p>																																				
2	Lug Seal, Anti-tracking tube, weather sheds, Stress control tube	<p>a) Heat Shrinkable</p> <p>b) Fire resistant and weather resistant as per ENA TS 09-13 – for lug seals, weather sheds and Anti-tracking tubes</p> <table border="1"> <thead> <tr> <th>Sl. no</th> <th>Size</th> <th>Tube type</th> <th>Qty</th> <th>Size (min in mm)</th> <th>OD (Before/After shrinking) mm</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3C 300/400 sqmm I/D & O/D</td> <td>Stress control tube</td> <td>3</td> <td>130</td> <td>50/25</td> </tr> <tr> <td>2</td> <td>3C 300/400 sqmm O/D</td> <td>Anti tracking tube</td> <td>3</td> <td>600</td> <td>55/20</td> </tr> <tr> <td>3</td> <td>1C 630 sqmm O/D & ID</td> <td>Stress control tube</td> <td>1</td> <td>130</td> <td>65/30</td> </tr> <tr> <td>4</td> <td>1C 630 sqmm O/D & ID</td> <td>Anti tracking tube</td> <td>1</td> <td>400</td> <td>70/30</td> </tr> <tr> <td>5</td> <td>1C 630 sqmm O/D & ID</td> <td>Insulating tube</td> <td>3</td> <td>300</td> <td>35/12</td> </tr> </tbody> </table> <p>For lower sizes length & OD of tubes should be adjusted suitably. BOM approval is mandatory before supply.</p>	Sl. no	Size	Tube type	Qty	Size (min in mm)	OD (Before/After shrinking) mm	1	3C 300/400 sqmm I/D & O/D	Stress control tube	3	130	50/25	2	3C 300/400 sqmm O/D	Anti tracking tube	3	600	55/20	3	1C 630 sqmm O/D & ID	Stress control tube	1	130	65/30	4	1C 630 sqmm O/D & ID	Anti tracking tube	1	400	70/30	5	1C 630 sqmm O/D & ID	Insulating tube	3	300	35/12
Sl. no	Size	Tube type	Qty	Size (min in mm)	OD (Before/After shrinking) mm																																	
1	3C 300/400 sqmm I/D & O/D	Stress control tube	3	130	50/25																																	
2	3C 300/400 sqmm O/D	Anti tracking tube	3	600	55/20																																	
3	1C 630 sqmm O/D & ID	Stress control tube	1	130	65/30																																	
4	1C 630 sqmm O/D & ID	Anti tracking tube	1	400	70/30																																	
5	1C 630 sqmm O/D & ID	Insulating tube	3	300	35/12																																	
3	Mastic tape	<p>a) Mastic tape shall be electrically insulating, non-tracking and water/humidity resistant.</p> <p>b) Volume resistivity of mastic shall not be less than volume resistivity of insulating tube as specified in ENA TS 09-13.</p> <p>c) Stress grading mastic should be provided for both connector portion and semicon portion.</p> <p>d) Water resistant sealing mastic shall also be provided for end sealing in straight through kit and lug sealing in termination kit.</p>																																				
4	Heat Shrink Breakout & Lug seal	<p>a) Fire resistant and weather resistant as per ENA TS 09-13.</p> <p>b) Adhesive coated Breakouts shall be provided on outer sheath of the cable to prevent water ingress.</p> <p>c) Anti tracking lug seal with adhesive coated, flame retardant.</p>																																				



Specification No: [ENG-HV-2016](#)

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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

S. No.	Components	Requirement
5	Tinned coated copper braid	<p>a) Shall be completely insulated by adhesive coated fire retardant and weather resistant HS tube/sleeve up to copper lug.</p> <p>b) Fire resistant and weather resistant as per ENA TS 09-13.</p> <p>c) Size and length is as follows:</p> <p>d) 25 mm² x 500 mm x 1 Run for 3C 70, 95, 120 & 150 mm² cables.</p> <p>e) 50 mm² X 600 mm X 1 Run for above 150 mm² & up to 400 mm² cables.</p> <p>f) 70 mm² X 500 mm X 1 Run for 630 mm² & 1000mm² cables. Additionally 3 nos. X 150mm² Al lugs with sealing sleeves/ mastic for armor back fold earth bonding.</p> <p>For Copper screened HT ABC, continuity of armor shall be through 25 sq.mm. X 500mm insulated tinned copper braid.</p> <p>Additionally 1 no. 95 mm² Al long barrel lugs with sealing sleeves/ mastic shall be provided for armor back fold earth bonding in Aluminum armored 150 mm² HT ABC.</p>
6	Tinned coated copper braid as a Leakage Current Collector	<p>a) Leakage current collector tinned copper braid</p> <p>b) 1R X 7 mm² X 150 mm per core shall be provided for terminations.</p>
7	Tinned copper wire mesh	<p>a) Minimum 2.5mm² tinned copper mesh shall be provided on armour circumference beneath the copper braid.</p> <p>b) For 3 core cable 1R X 0.5mtr</p> <p>c) For 1 core cable 1R X 0.7mtr</p>
8	Sub-kit components	<p>a) GI Solid Collet dia of dia as per cable OD (1no only in 3C cables),</p> <p>b) Worm drive clip/ Jubilee clip of stainless steel (2 nos),</p> <p>c) Compatible support rings (Aluminium for single core and GI for three core cables)</p> <p>d) Soldering on copper screen is not acceptable</p> <p>e) Constant pressure roll spring shall be provided for screen connections as per compatible size. For 3 core- 3nos, for 1C - 1nos.</p> <p>f) Plumb earthing on PILCA side is unacceptable. Constant pressure roll spring should be used for same</p> <p>g) Tinned copper binding wire 20 SWG, qty 50gms</p> <p>h) Nylon string OD 1mm, 2mtr</p> <p>i) Silicone grease, 30 gms</p> <p>j) Cleaning liquid</p> <p>k) Vinyl tape</p> <p>l) Al oxide cloth</p> <p>m) Other necessary items</p>



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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

S. No.	Components	Requirement
9	Submission of BOM and instruction sheet	<p>a) Participating bidder shall submit BOM (during pre-bid) with dimensions of each size and quantity of HS joint and termination. Also instruction sheet shall be provided in each kit.</p> <p>*Note: BOM shall be approved by TPCODL/TPWODL/TPNODL/TPSODL authorized official at the time of pre-bid.</p>

5.2 Components of Straight Through jointing kit:

S. No.	Components	Requirement																																										
1	Heat Shrinkable insulating tube/ Sleeve	<p>a) Surface of material: shall be smooth and free from protrusion, voids and nicks.</p> <p>b) Recovered thickness: Recovered thickness of insulation tubes over ferrule or connector circumference shall not be less than 4.32 mm at any point of measurement.</p> <p>c) Wall thickness ratio (before recovery) of all sleeves/ tubes shall not be less than 60% at any two points of measurement.</p> <table border="1" data-bbox="722 1024 1469 1696"> <thead> <tr> <th>Sl no</th> <th>Size</th> <th>Tube type</th> <th>Qty</th> <th>Size (min in mm)</th> <th>OD (Before/After shrinking) mm</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3C 300/400 sqmm</td> <td>Stress control tube</td> <td>3</td> <td>470</td> <td>45/20</td> </tr> <tr> <td>2</td> <td>3C 300/400 sqmm</td> <td>Red Insulating tube</td> <td>3</td> <td>460</td> <td>55/20</td> </tr> <tr> <td>3</td> <td>3C 300/400 sqmm</td> <td>Dual wall tube</td> <td>3</td> <td>450</td> <td>65/21</td> </tr> <tr> <td>4</td> <td>1C 630 sqmm</td> <td>Stress control tube</td> <td>1</td> <td>500</td> <td>65/30</td> </tr> <tr> <td>5</td> <td>1C 630 sqmm</td> <td>Red Insulating tube</td> <td>1</td> <td>490</td> <td>70/30</td> </tr> <tr> <td>6</td> <td>1C 630 sqmm</td> <td>Dual wall tube</td> <td>1</td> <td>480</td> <td>85/30</td> </tr> </tbody> </table> <p>d) For lower sizes length & OD of tubes should be adjusted suitably. BOM approval is mandatory before supply.</p>	Sl no	Size	Tube type	Qty	Size (min in mm)	OD (Before/After shrinking) mm	1	3C 300/400 sqmm	Stress control tube	3	470	45/20	2	3C 300/400 sqmm	Red Insulating tube	3	460	55/20	3	3C 300/400 sqmm	Dual wall tube	3	450	65/21	4	1C 630 sqmm	Stress control tube	1	500	65/30	5	1C 630 sqmm	Red Insulating tube	1	490	70/30	6	1C 630 sqmm	Dual wall tube	1	480	85/30
Sl no	Size	Tube type	Qty	Size (min in mm)	OD (Before/After shrinking) mm																																							
1	3C 300/400 sqmm	Stress control tube	3	470	45/20																																							
2	3C 300/400 sqmm	Red Insulating tube	3	460	55/20																																							
3	3C 300/400 sqmm	Dual wall tube	3	450	65/21																																							
4	1C 630 sqmm	Stress control tube	1	500	65/30																																							
5	1C 630 sqmm	Red Insulating tube	1	490	70/30																																							
6	1C 630 sqmm	Dual wall tube	1	480	85/30																																							



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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

S. No.	Components	Requirement
2	Compression lugs/ Mechanical Connectors	<p>a) Material : 99% Electrolytic grade Aluminium with Anti-corrosive paste</p> <p>b) Shape: As per IS 8308</p> <p>c) Dimensions as per Annexure-I of this Specification</p> <p>d) Conductivity of ferrules/mechanical connectors shall be as per IS 8309: 2003.</p> <p>e) Conductivity of Aluminium shall be min. 60% of IACS.</p> <p><u>Mechanical Lugs:</u></p> <p>a) Tinned coated Aluminium 185-400 mm²/ 630mm²/1000mm²</p> <p>b) Type Tested as per IEC 61238(part1):2003</p> <p>c) Dimensions shall be as annexure-I of this specification.</p> <p>d) Approved make NILLED, PFISTERER, NEXANS, TYCO (GERMANY).</p> <p>Dimensions shall be as annexure-I of this specification.</p>
3	Mastic Tape	<p>a) Mastic tape shall be electrically insulating, non-tracking and water/humidity resistant.</p> <p>b) Volume resistivity of mastic shall not be less than volume resistivity of insulating tube as specified in ENA TS 09-13.</p> <p>c) Stress grading mastic should be provided for both conductor portion and semicon portion.</p> <p>d) Water resistant sealing mastic shall also be provided for end sealing in straight through kit and lug sealing in termination kit.</p>
4	Tinned coated copper braid for GI armour continuity and Ferrules for Aluminium armour continuity	<p>a) Uniformly tinned coated copper braid shall be provided for armor continuity</p> <p>b) Size and length as per below:</p> <p>c) Wrap tinned copper wire mesh with 50% overlap around the joint area and continue 25 mm over the copper screen on both sides. Bind the copper wire mesh on copper screen.</p> <p>d) Size of tinned copper braid shall be: 50 mm² x 1 Run for 150-400 sq.mm. three core cables. 25 mm² x 1 Run for below 150 sq.mm. three core cables.</p> <p>Ferrules for Aluminum armor continuity:</p> <p>a) In single core cables, 1CX400, 1CX630 and 1CX1000 sq.mm., Aluminum armor continuity shall be done using 2 nos. long barrel type of size 150 sq.mm. and 185 sq.mm. ferrules respectively. Additionally 70 mm² x 1 Run tinned copper braid to be provided.</p>



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S. No.	Components	Requirement
		b) For Copper screened HT ABC, continuity of armor shall be through 2.5 sq.mm. copper wire mesh.
5	Tinned copper wire mesh	a) Uniformly tinned coated copper mesh shall be provided for screen continuity shall be provided on both sides of armor circumference beneath the copper braid. b) For 3C cable: 2.5mm ² (2" X 6mtr) c) For 1C cable: 2.5mm ² (2" X 7mtr), (2" X10mtr) & (2"X12mtr)
6	GI wire mesh/ Copper wire mesh	a) Mechanical protection shall be provided in GI armored cables by means of heavily zinc coated GI mesh as per IS 4826. b) Minimum 3" X 15mtr GI wire mesh for 3C cable c) In 1C Aluminium armored cables, for mechanical protection, copper wire mesh shall be provided as mentioned in SL. No 5.
7	Breakouts	a) Adhesive coated Breakouts shall be provided on outer sheath at both sides on the cable to prevent water ingress.
8	Nesting & end sealing tube	a) Hot melted adhesive coated bested end sealing tube for protection of moisture ingress in cores. b) Length 200mm minimum c) 6 nos for 3C, 2 nos for 1C
9	Wrap around insulating tube/Sleeve as outer most tube	a) Material: cross-linked polyolefin (Heat Shrinkable) as a waterproof seal. b) Shape: Wrap around form with hot-melt adhesive liner on the inner surface of the sleeve (Upon heating, the sleeve shrinks and the adhesive melts, creating a water-tight bond between the sleeve and the cable). c) Stainless steel channel shall be provided along the wrap around to close the sleeve during installation. d) Excellent mechanical and corrosion protection, and atmospheric sealing. e) High split resistance. f) *Note: Overlapping of wrap around sleeve is not acceptable. Length of one sleeve: Minimum 1000mm, Qty. 2nos Insulating sleeve of 500 mm should be provided to cover mid joints Portion
10	Sub-kit Components	a) GI Solid Collet dia of dia as per cable OD (2nos only in 3C cables), b) Worm drive clip/ Jubilee clip of stainless steel (3 core- 6nos, 1C 2nos), c) Compatible support rings (Aluminium for single core and GI for three core cables) d) Soldering on copper screen is not acceptable e) Constant pressure roll spring (size 4) shall be provided for screen connections. For 3 core- 6nos, for 1C -2nos



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S. No.	Components	Requirement
		f) Plumb earthing on PILCA side is unacceptable. Constant pressure roll spring should be used for same g) Tinned copper binding wire 20 SWG, qty 50gms h) Nylon string OD 1mm, 2mtr i) Silicone grease, 30 gms j) Cleaning liquid k) Vinyl tape l) Al oxide cloth m) Other necessary items
11	Submission of BOM and instruction sheet	a) Participating bidder shall submit BOM (during pre-bid) with dimensions of each size and quantity of HS joint and termination. Also instruction sheet shall be provided in each kit. b) *Note: BOM shall be approved by TPCODL/TPWODL/TPNODL/TPSODL authorized official at the time of pre-bid.

6. MARKING:

Following details shall be printed in the box:

- a) Manufacture’s name and address.
- b) Month & Year of Manufacturing
- c) Voltage Grade
- d) PO No.
- e) “TPCODL/ TPWODL/ TPNODL/ TPSODL” Name

HS Sleeves/tubes and breakout components shall be embossed with:

- a. Manufacture’s name and address.
- b. Month & Year of Manufacturing
- c. Batch No. / Lot No.
- d. Shrink Ratio
- e. Size
- f. Type
- g. “TPCODL/ TPWODL/ TPNODL/ TPSODL” Name

7. TESTS:

All Routine, Acceptance & Type tests shall be carried out in accordance with the Relevant IS/IEC/ ENA TS 09-13. All the components shall also be type tested as per the relevant



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standards mentioned below. Following tests shall be necessarily conducted on the Joint and Termination Kits In addition to others specified in IS/IEC/ENA-TS 09-13 standards:

7.1 ACCEPTANCE TESTS:

Test	Clause No.	Reference Standard
Visual inspection	3.15	ENA -TS 09-13
Physical verification of kit contents and dimensions	As per TPCODL/TPWODL/TPNODL/TPSODL approved BOM	
Electric Strength test	3.4	ENA -TS 09-13
Ultimate Elongation tests	3.12	ENA -TS 09-13
Tensile Strength	3.12	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Wall thickness ratio	3.3	ENA -TS 09-13
Expanded and recovered diameters	3.3	ENA -TS 09-13
Longitudinal change after recovery	3.3	ENA -TS 09-13
Heat shock test	3.7.1/3.7.2	ENA -TS 09-13
Low temperature flexibility	4.5	ENA -TS 09-13
Insulation build up thickness after shrink on Ferrule	8.1	IS 10810 -6
Flame retardant test on anti-tracking tubes and anti-tracking moulded components and earth braid protective tube after shrink on mandrill for terminations	3.5.1/ 3.5.2	ENA -TS 09-13
Area measurement of tinned copper braids (Area of one wire x no. of wires x no. of carriers)	As per TPCODL/TPWODL/TPNODL/TPSODL approved BOM	
Conductivity test on ferrules/ connectors/ lugs	8.3	IS 8309/ As per IEC 61238 part 1
Uniformity of zinc coating on GI mesh (Manufacturer's TC to be provided)	4.1	IS 2633

7.2 ROUTINE TESTS

Test	Clause No.	Reference Standard
Visual inspection of tubing and moulded components for free from pin holes, cracks, nicks, protrusion and	3.15	ENA -TS 09-13



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Test	Clause No.	Reference Standard
other defects		
Dimension check		As per TPCODL/TPWODL/TPNODL/TPSODL approved BOM
Electric Strength	3.4	ENA -TS 09-13
Ultimate Elongation	3.12	ENA -TS 09-13
Tensile Strength	3.12	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Wall thickness ratio	3.3	ENA -TS 09-13
Expanded and recovered diameters of tubes	3.3	ENA -TS 09-13

7.3 TYPE TESTS:

(i) Terminations & Straight Through joints

Test	Clause No.	Reference Standard
Conductor resistance with Ferrule/Lugs/Mechanical connectors	4.1	IS 13573(Part-2)
AC Voltage withstand Test (Air)	4.2	IS 13573(Part-2)
AC Voltage withstand test (under wet conditions) (for outdoor termination only)	4.2	IS 13573(Part-2)
Partial Discharge	7.0	IS 13573(Part-2)
Impulse voltage test	6	IS 13573(Part-2)
Heat Cycle test in air and water	9.1 and 9.2	IS 13573(Part-2)
Thermal Short Circuit Test for Screen	10	IS 13573(Part-2)
Thermal Short Circuit Test for Conductor	11	IS 13573(Part-2)
DC Voltage Withstand	5	IS 13573(Part-2)
Dynamic short circuit test	12	IS 13573(Part-2)
Thermal Endurance test		IEC 60216 part 2 & 8
Salt fog test (Only for Outdoor terminations only)	13	IS 13573(Part-2)



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(II) Kit Components

a) For Tubing and Moulded Components

Test	Clause No.	Reference Standard
Corrosion Resistance	3.1	ENA -TS 09-13
Density	3.2	ENA -TS 09-13
Dimensions	3.3	ENA -TS 09-13
Electric Strength	3.4	ENA -TS 09-13
Flame Retardance	3.5	ENA -TS 09-13
Heat Shock	3.7	ENA -TS 09-13
Low temperature flexibility	3.8	ENA -TS 09-13
Relative Permittivity	3.9	ENA -TS 09-13
Tensile strength and Ultimate elongation	3.12	ENA -TS 09-13
Thermal Ageing	3.13	ENA -TS 09-13
Tracking Resistance	3.14	ENA -TS 09-13
Visual Examination	3.15	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Water Absorption	3.17	ENA -TS 09-13

b) For Compression Lugs, Compression Ferrules and Mechanical connectors

Test	Reference Standard
Mechanical Pull Test	IEC 61238, part - 1
Heat cycle Test (1000 Nos.)	IEC 61238, part - 1
Short circuit Test	IEC 61238, part - 1

8. TYPE TEST CERTIFICATES:

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at **CPRI/ERDA** as per relevant IS. However, TPCODL/ TPWODL/ TPNODL/ TPSODL/ TATA-POWER reserves the right to allow any other NABL accredited/ Govt. lab report/ Lab having accreditation from ILAC Signatory under exceptional circumstances after due diligence/ scrutiny by DISCOM. Type tests should have been conducted during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPCODL/ TPWODL/ TPNODL/ TPSODL.

9. PRE-DISPATCH INSPECTION:

The material shall be subject to inspection by a duly authorized representative of the TPCODL/ TPWODL/ TPNODL/ TPSODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or



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material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPCODL/ TPWODL/ TPNODL/ TPSODL's representatives at all times when the work is in progress. Inspection by the TPCODL/ TPWODL/ TPNODL/ TPSODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPCODL/ TPWODL/ TPNODL/ TPSODL.

Following documents shall be sent along with material.

- a) Test reports
- b) MDCC issued by TPCODL/ TPWODL/ TPNODL/ TPSODL
- c) TPCODL/ TPWODL/ TPNODL/ TPSODL Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable).

10. INSPECTION AFTER RECEIPT AT STORE:

The material received at TPCODL/ TPWODL/ TPNODL/ TPSODL store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Project Engineering department.

11. GUARANTEE:

Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Company up to a period of at least 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract whichever is later.

Further Bidder shall also stand guarantee towards poor workmanship in installation of straight through joint and terminations installed by bidder's joiner up to 60 months from the date of installation.

Bidder shall be liable to undertake to replace/rectify such defects at own costs, within mutually agreed time frame, and to the entire satisfaction of TPCODL/TPWODL/TPNODL/TPSODL, failing which TPCODL/TPWODL/TPNODL/TPSODL shall be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the



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Company's own charges (@ 20% of expenses incurred), from the bidder or from the "Security cum Performance Deposit" as the case may be. Bidder shall further be responsible for free replacement for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Company.

12. PACKING AND TRANSPORT:

Supplier shall ensure that all material covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

13. TENDER SAMPLE:

Bidder shall be submit the sample of material during tender evaluation process with the offer (in case of first supply to TPCODL/TPWODL/TPNODL/TPSODL).

14. QUALITY CONTROL:

The bidder shall submit QAP indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections.

15. TESTING FACILITIES:

Supplier/ Manufacturer shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant Indian standards.

16. MANUFACTURING FACILITIES:

The successful bidder shall submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer.

17. SPARES, ACCESSORIES AND TOOLS

Not applicable.



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18. DRAWINGS AND DOCUMENTS:

Following drawings and documents shall be submitted in line with the requirement of Tender specifications:

- a) Completely filled in Schedule "A" Guaranteed Technical Particulars & Schedule "B" Deviations
- b) BOM
- c) Work Experience details
- d) Type test certificates.
- e) Drawing 1 Set of Hard Copy & Soft Copy PDF File containing complete information about manufacturing.

19. SCHEDULE- "A" GUARANTEED TECHNICAL PARTICULARS:

S. No.	Parameter	Units	To be Furnished by Bidder
1	Max. Withstand System Voltage	KV	
2	Partial Discharge at 1.73 U _o	pC (Pico-coulombs)	
3	Impulse Peak Withstand	KV	
4	Continuous operation withstand Temperature	°C	
	Short Circuit withstand temperature	°C	
5	Withstand short circuit current	KA/1Sec	
6	Storage Temperature Range	°C	
7	Shelf life of kit components excluding mastic and solution	Years	
8	Shelf life of mastic and solution	Years	

A. General Technical Particulars for Heat Shrinkable Insulation Tubing/ Sleeves/ Wrap around Sleeve:

S.No.	Parameter	To be Furnished by Bidder
1	Visual Examination	
2	Wall thickness Ratio	



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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

S.No.	Parameter	To be Furnished by Bidder
3	Internal diameter of tube after full recovery	
4	Longitudinal change	
5	Electric Strength	
6	Tensile Strength	
7	Ultimate Elongation	
8	Heat Shock	
9	Low Temperature Flexibility	
10	Volume Resistivity	
11	Tracking resistance	
12	Flame Retardant (Applicable only for Anti tracking Tubes/ sleeves)	

B. General Technical Particulars for Heat Shrinkable moulded components/ Breakouts/ Weather sheds

Sl.No.	Parameter	To be Furnished by Bidder
1	Visual Examination	
2	Wall thickness Ratio	
3	Internal diameter of tube after full recovery	
4	Longitudinal change	
5	Dielectric Strength	
6	Tensile Strength	
7	Ultimate Elongation	
8	Heat Shock	
9	Low Temperature Flexibility	
10	Volume Resistivity	



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Technical Specification For Heat Shrinkable Straight through Joint & Termination for 11kV Power Cable

Sl.No.	Parameter	To be Furnished by Bidder
11	Flame Retardant (For anti-tracking moulded components)	

20. SCHEDULE "B" DEVIATIONS:

(TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

SL. No	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.

Seal of the Company:

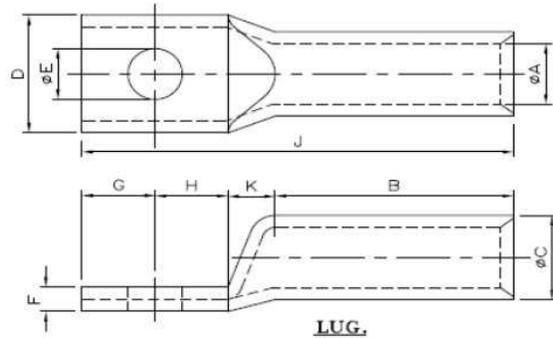
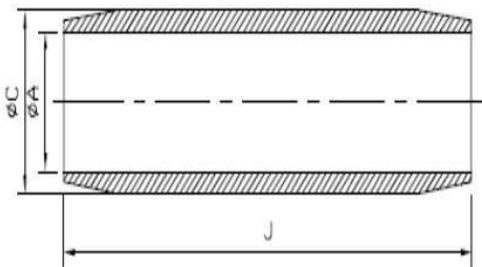
Signature

Designation

Annexure- Dimensions Ferrules & Lugs HT

Dimensional details of Aluminum ferrules for HT AL circular stranded compacted XLPE cables			
Cable Size in MM ²	φA (mm) +0.3mm	φC (mm) +0.3 mm	J (mm) ±3mm
95	12	16.9	108
150	15.1	21.2	116
300	21.8	30.2	150
400	25	34.8	150
630	31.7	44.4	200
1000	41	56	250

Dimensional details of Aluminum Lugs for HT circular stranded compacted XLPE cables							
Cable Size in MM ²	φE (mm) ±0.1mm in centre of palm	φA (mm) +0.5mm	φC (mm) +0.5 mm	D (mm) ±1.5mm	F (mm) ±0.5mm	B±3.0mm	J (mm) ±5mm
95	13	12	16.9	23.5	4.9	73	109
150	13	15.1	21.2	29.5	6	83	128
300	17	21.8	30.2	42	8.4	89	157
400	17	25	34.8	48	9.8	113	187
630	17	31.7	44.4	61	12.7	140	225
1000	-	41	56	77.5	15	160	280

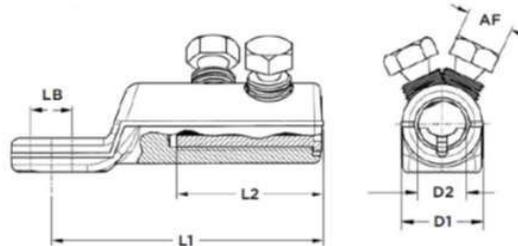
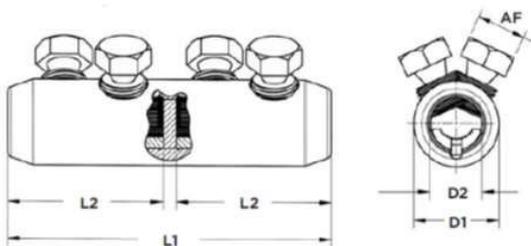


For remaining cable sizes, dimensions of Ferrules & Lugs shall be as per IS.

Annexure- Dimensions Mechanical connectors & Mechanical Lugs

Aluminium Mechanical connectors			
Cable Size in MM ²	φD1 (mm)	φD2 (mm)	L (mm)
185-400	50	25.5-26	440- 450
185-400	42	25.5-26	170-200
500- 630	50	33- 33.5	180-230
1000	60	40	180-230

Tinned Aluminium Mechanical Lugs				
Cable Size in MM ²	φLB (mm)	φD1 (mm)	φD2 (mm)	L (mm)
185-400	17	42	25.5-26	137-150
500- 630	17	50	33- 33.5	150-180
1000	2x17	60	40- 40.5	180- 240



STANDARD TECHNICAL SPECIFICATION COVER SHEET

Specification No. : ENG-LV-3008

Specification Name : Technical Specification For Heat Shrinkable Straight through Joint & Termination for 1.1KV Cable

BARSHA BANDITA	MILAN MAITY	K GOVINDARAJ	Syed Mohammed Yousuf Raja	KHAJAN BHARDWAJ	POURUSH GARG
Prepared by	Reviewed by	Reviewed by	Reviewed by	Approved by	Released by
TPCODL	TPNODL	TPWODL	TPSODL	TPCODL	TPCODL
10-01-2023	10-01-2023	11-01-2023	12-01-2023	12-01-2023	12-01-2023

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TPWODL*



Specification No: [ENG-LV-3008](#)

Specification Name:

Technical Specification For Heat Shrinkable
Straight through Joint & Termination for 1.1KV
Cable

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Specification No: [ENG-LV-3008](#)

Specification Name:

Technical Specification For Heat Shrinkable Straight through Joint & Termination for 1.1KV Cable

1. SCOPE:

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of 1.1 kV Heat Shrink Cable Straight through Joints and Terminations with all accessories and necessary training for trouble free & efficient performance.

2. APPLICABLE STANDARDS:

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with latest revisions of relevant Indian Standards/ IEC and shall conform to the regulations of local statutory authorities.

SL. No.	IEC/IS	Description
1	IS-13573: 2011(Part-1)	Cable Accessories for extruded power cables, for working voltages for 1.1 kV up to and including 3.3 kV – test methods and test requirements
2	IS 7098- 2003 (Part1)	Cross linked polyethylene insulated PVC sheathed cables up to and including 1.1 kV Cable.
3	IS 14255	LT Aerial Bunched cable working up to 1.1 kV
4	ENA TS 09-13	High voltage heat shrinkable material components for use up to and including 36 kV
5	IEC 61238-1: 2003	Compression and Mechanical Connectors for Power Cables
6	IS 8308 : 2003	Compression type tubular inline connector for Aluminium conductors of insulated cables
7	IS 8309 : 2003	Compression type tubular terminal ends for Aluminium conductors of insulated cables
8	IS 2633	Methods for testing uniformity of coating of zinc coated articles
9	IS 4826	Hot dipped galvanized coatings on round steel wires
10	IS 12444	Continuous Cast and Rolled electrolytic copper wire rods for electrical conductors
11	IS 191	Copper Specification
12	IS 10810	Methods of test for cables



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SL. No.	IEC/IS	Description
13	EN 50393	European Cable Jointing Standard
14	ASTM D-2303	Standard Test Methods for Liquid-Contaminant, Inclined-Plane Tracking and Erosion of Insulating Materials
15	ASTM G 154-12a	Exposure to UV radiation
16	IS 10810 (Pt.7): 1984	Tensile strength and elongation before & after UV exposure

3. CLIMATIC CONDITIONS:

SL.NO.	CONDITONS	VALUES
1	Max. altitude above sea level	1200m
2	Max. Ambient Temperature	50 °C
3	Max. Daily average ambient temp	35 °C
4	Min Ambient Temp	0 °C
5	Maximum temperature attainable by an object exposed to sun	60 °C
6	Maximum Humidity	95%
7	Minimum Humidity	10%
8	Average No. of thunderstorm days per annum	70
9	Average Annual Rainfall	150 cm
10	Average No. of rainy days per annum	120
11	Thermal Resistivity of soil	150 Deg. Ccm/W
12	Wind Pressure	126 kg/sq. m up to an elevation of 10 meter.
14	Earthquakes of intensity in horizontal direction	equivalent to seismic acceleration of 0.3g
15	Earthquakes of intensity in vertical direction	equivalent to seismic acceleration of 0.15g
16	Wind velocity	300 km/hr.



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Environmentally, some of the regions, where the work will take place include coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor insulators. Some places are in heavily industrial polluted areas. Therefore, Outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive and humid coastal atmosphere.

The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1 g.

4. GENERAL TECHNICAL REQUIREMENTS:

4.1 TYPES OF CABLES

A. Four Core Cables, 1.1KV A2XWY (Aluminium conductor stranded sector shaped, XLPE insulation, PVC inner sheath, GI round wire armour, PVC outer sheath) & A2XFY

- i) 4CX400 sq.mm.
- ii) 4C X 300 sq.mm.
- iii) 4CX240 sq.mm.
- iv) 4C X 185 sq.mm
- v) 4C X 150 sq.mm.
- vi) 4C X 95 sq.mm.
- vii) 4C X 50 sq.mm.
- viii) 4C X 35 sq.mm.
- ix) 4C X 25 sq.mm.

B. Three & half core cables

- i) 3.5C x 95 sq. mm.
- ii) 3.5C x 150 sq. mm.
- iii) 3.5C x 240 sq. mm.
- iv) 3.5C x 300 sq. mm.
- v) 3.5C x 400 sq. mm.



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4.2 According to standard sizes of cables, following types of cable joints and terminations shall be required:

Type & size of cable	Type of Joint
4C & 3.5C Cables – all sizes	Straight through joints/ Indoor/ Outdoor termination

4.3 General requirement for Heat Shrinkable Jointing and Termination kit:

- The jointing kit containing heat shrinkable tubing, mastics and other accessories for making a complete joint and termination shall be designed to meet TPCODL/ TPWODL/ TPNODL/ TPSODL/ specification, ENA TS 09-13 and IS 13573 and other relevant standards.
- Cable joint and termination material shall not be adversely affected in any manner even after contact with material used in cable construction and material used as accessories in the construction of cable joints and terminations and there will be no chance of corrosion developing on any metal surface.
- Assembled jointing kit components shall perform without distress in system with parameters (mentioned below):
- Insulating tube for outdoor termination should be of black colour & type tested for UV rays protection.

S. No.	Parameter	Units	Requirement
1	Max. Withstand System Voltage	kV	1.1
2	Continuous operation withstand Temperature	°C	90
	Short Circuit withstand temperature	°C	250
3	Withstand short circuit current	kA/1Sec	As per Size of Conductors
4	Storage Temperature Range	°C	-10°C to + 45°C
5	Shelf life of kit components excluding mastic and solution	Years	Min. 5
6	Shelf life of mastic and solution	Years	Min. 2

4.4 General Technical Particulars for Heat Shrinkable Insulation Tubing/ Sleeves/ Wrap around Sleeve:



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SL. No.	Parameter	Requirement
1	Visual Examination	Free from protrusions, pinholes, cracks, nicks and other visible defects.
2	Wall thickness Ratio	0.6 or 60% (Minimum at any two points of measurements)
3	Internal diameter of tube after full recovery	Shall not be higher than as specified in approved BOM / GTP
4	Longitudinal change	10% Max.
5	Dielectric Strength	10 KV /mm (Minimum)
6	Tensile Strength	10 N/mm ² (Minimum) and (8 N/mm ² for anti-tracking)
7	Ultimate Elongation	200% (Minimum)
8	Heat Shock	No splitting, cracking, dripping or flowing after 30 minutes at 200°C Min. (For stress control tube: 30 Minutes at 250°C Min.)
9	Low Temperature Flexibility	No cracking after 4 hrs. at minus -20°C Max.
10	Volume Resistivity	1x 10 ¹⁰ Ohm- meter (Minimum) (For stress control, tube VR: 1x 10 ⁷ Ohm-meter min.)
11	Flame Retardant (Applicable only for Anti tracking Tubes/sleeves)	After 1-minute burn: Burnt or charred length 250 mm max.

4.5 General Technical Particulars for Heat Shrinkable moulded components/ Breakouts/Weather sheds

Sl. No.	Parameter	Specified limit
1	Visual Examination	Free from protrusions, pinholes, cracks, nicks and other visible defects.
2	Wall thickness Ratio	0.6 or 60% (Minimum at any two points of measurements)
3	Internal diameter of tube after full recovery	Shall not be higher than as specified in approved BOM / GTP.
4	Longitudinal change	25% Max.
5	Dielectric Strength	10 KV /mm (Minimum)
6	Tensile Strength	8 N/mm ² (Minimum)
7	Ultimate Elongation	200% (Minimum)



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Sl. No.	Parameter	Specified limit
8	Heat Shock	No splitting, cracking, dripping or flowing after 30 minutes at 250°C Min.
9	Low Temperature Flexibility	No cracking after 4 hrs. @ minus -20°C Max.
10	Volume Resistivity	1x 10 ¹⁰ Ohm- meter (Minimum)
11	Flame Retardant (For anti-tracking moulded components)	After 1-minute burn: Burnt or charred length 250mm max.

5. GENERAL CONSTRUCTION:

5.1 Components of Indoor/ Outdoor Termination Kit:

S. No.	Components	Requirement
1	Compression Lugs/ Tinned coated Mechanical Lugs	<u>Compression Lugs:</u> a) Material: Aluminium b) All Aluminum lugs with anti-corrosive paste shall be long barrel type as per IS 8309: 2003. c) Dimensions shall be as annexure-I of this specification.
2	Lug Seal	a) Fire resistant and weather resistant as per ENA TS 09-13
3	Heat Shrinkable insulating tube/ Sleeve	a) Surface of material: shall be smooth and free from protrusion, voids and nicks. b) Wall thickness ratio (before recovery) of all sleeves/ tubes shall not be less than 60% at any two points of measurement. c) For outdoor kits all 4 tubes should be of black colour with UV radiation protective coating. d) Length of insulating tube: Outdoor- 600mm, Indoor- 400mm
4	Mastic tape	a) Mastic tape shall be electrically insulating, non-tracking and water/humidity resistant. b) Volume resistivity of mastic shall not be less than volume resistivity of insulating tube as specified in ENA TS 09-13.
5	Heat Shrink Breakout	a) Fire resistant and weather resistant as per ENA TS 09-13. b) Adhesive coated Breakouts shall be provided on outer sheath of the cable to prevent water ingress.
6	Tinned coated copper braid	a) Shall be completely insulated by adhesive coated fire retardant and weather resistant HS tube/sleeve up to copper lug. b) Fire resistant and weather resistant as per ENA TS 09-13. c) Size and length is as follows: d) 25 mm ² x 500 mm x 1 Run for below 300 mm ² cables. e) 50 mm ² x 500 mm x 1 Run for above 300 mm ² cables f) Compatible Supporting ring with SS jubilee clips shall be provided to connect tinned copper braids



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S. No.	Components	Requirement
7	Tinned copper wire mesh	a) Minimum 2.5mm ² x 500 mm shall be provided for wrapping over armor circumference beneath the copper braid
8	Sub-kit components	a) Tapes, Mastic, GI back-up rings, Worm Drive clip/ Jubilee clip of stainless steel, adhesive cloth, cleaning solvents and other necessary items.
9	Submission of BOM and instruction sheet	a) Participating bidder shall submit BOM (during pre-bid) with dimensions of each size and quantity of HS joint and termination. Also instruction sheet shall be provided in each kit. *Note: BOM shall be approved by TPCODL/ TPWODL/ TPNODL/ TPSODL authorized official at the time of pre-bid.

5.2 Components of Straight Through jointing kit:

S. No.	Components	Requirement
1	Heat Shrinkable insulating tube/ Sleeve	a) Surface of material: shall be smooth and free from protrusion, voids and nicks. b) Recovered thickness: Recovered thickness of insulation tubes over ferrule circumference shall not be less than 2.5 mm at any point of measurement. c) Wall thickness ratio (before recovery) of all sleeves/ tubes shall not be less than 60% at any two points of measurement. d) Length Shall be suitable to cover all exposed insulation in jointing part.
2	Ferrule	a) Material : 99% Electrolytic grade Aluminium with Anti-corrosive paste b) Shape: As per IS 8308 c) Dimensions as per Annexure-I of this Specification d) Conductivity of Aluminium shall be min. 60% of IACS. e) Suitable reducer type ferrule shall be provided for jointing neutral core incase of 4C to 3.5C cable jointing.
3	Mastic Tape	a) Mastic tape or sealant shall be electrically insulating, non-tracking and water/humidity resistant. b) Volume resistivity of mastic shall not be less than volume resistivity of insulating tube as specified in ENA TS 09-13.
4	Tinned coated copper braid	a) Uniformly tinned coated copper braid shall be provided for armor continuity b) Size of tinned copper braid shall be: 50 mm ² x 1 Run for 4CX 400 sq.mm, 4CX 300 sq.mm. & 4CX 240 sq.mm. cable. 25 mm ² x 1 Run for 4CX 150 sq.mm. and 4C X 95 sq.mm. cable 10 mm ² x 1 Run for 50 sq.mm. cable and below sizes. c) Length of tinned copper braid shall be as per approved BOM



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S. No.	Components	Requirement
5	Tinned copper wire mesh	a) Minimum 2.5 mm ² X 1000 mm for 4CX400 mm ² , 4CX300mm ² , 4CX240 mm ² and 4C X 150 mm ² . b) 2.5 mm ² X 300 mm – 95 sq.mm. and below sizes c) shall be provided for wrapping over armour circumference beneath the copper braid
6	GI wire mesh	a) Mechanical protection shall be provided in GI armored cables by means of heavily zinc coated GI mesh as per IS 4826.
7	Breakouts	a) Adhesive coated Breakouts shall be provided on outer sheath at both sides on the cable to prevent water ingress.
8	Wrap around insulating tube/Sleeve as outer most tube	a) Material: cross-linked polyolefin (Heat Shrinkable) as a waterproof seal. b) Shape: Wrap around form with hot-melt adhesive liner on the inner surface of the sleeve (Upon heating, the sleeve shrinks and the adhesive melts, creating a water-tight bond between the sleeve and the cable). c) Stainless steel channel shall be provided along the wrap around to close the sleeve during installation. d) Excellent mechanical and corrosion protection, and atmospheric sealing. e) High split resistance. f) *Note: Overlapping of wrap around sleeve is not acceptable. g) Additionally, adhesive coated sleeve approx. 300 mm length shall be provided at ferrule joint area beneath the wrap around sleeve.
9	Sub-kit Components	a) Tapes, Mastic, GI back-up rings, Worm Drive clip/ Jubilee clip of stainless steel, adhesive cloth, cleaning solvents and other necessary items.
10	Submission of BOM and instruction sheet	a) Participating bidder shall submit BOM (during pre-bid) with dimensions of each size and quantity of HS joint and termination. Also instruction sheet shall be provided in each kit. b) *Note: BOM shall be approved by TPCODL/ TPWODL/ TPNODL/TPSODL authorized official at the time of pre-bid.

6. MARKING:

Following details shall be printed in the box:

- a) Manufacture's name and address.
- b) Month & Year of Manufacturing
- c) Voltage Grade
- d) PO No.



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e) "TPCODL/ TPWODL/ TPNODL/ TPSODL" Name

HS Sleeves/tubes and breakout components shall be embossed with:

- a. Manufacture's name and address.
- b. Month & Year of Manufacturing
- c. Batch No. / Lot No.
- d. Shrink Ratio
- e. Size
- f. Type
- g. "TPCODL/ TPWODL/ TPNODL/ TPSODL" Name

7. TESTS:

All Routine, Acceptance & Type tests shall be carried out in accordance with the Relevant IS/IEC/ ENA TS 09-13. All the components shall also be type tested as per the relevant standards mentioned below. Following tests shall be necessarily conducted on the Joint and Termination Kits In addition to others specified in IS/IEC/ENA-TS 09-13 standards:

7.1 ACCEPTANCE TESTS:

Test	Clause No.	Reference Standard
Visual inspection	3.15	ENA -TS 09-13
Physical verification of kit contents and dimensions	As per TPCODL/ TPWODL/ TPNODL/ TPSODL approved BOM	
Electric Strength test	3.4	ENA -TS 09-13
Ultimate Elongation tests	3.12	ENA -TS 09-13
Tensile Strength	3.12	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Wall thickness ratio	3.3	ENA -TS 09-13
Expanded and recovered diameters	3.3	ENA -TS 09-13
Longitudinal change after recovery	3.3	ENA -TS 09-13
Heat shock test	3.7.1/3.7.2	ENA -TS 09-13
Low temperature flexibility	4.5	ENA -TS 09-13
Insulation build up thickness after shrink on Ferrule	8.1	IS 10810 -6



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Test	Clause No.	Reference Standard
Flame retardant test on anti-tracking tubes and anti-tracking moulded components and earth braid protective tube after shrink on mandrill for terminations	3.5.1/ 3.5.2	ENA -TS 09-13
Area measurement of tinned copper braids (Area of one wire x no. of wires x no. of carriers)	As per TPCODL/ TPWODL/ TPNODL/ TPSODL specification/ approved BOM	
Conductivity test on ferrules/ connectors/ lugs	8.3	IS 8309/ As per IEC 61238 part 1
Uniformity of zinc coating on GI mesh (Manufacturer's TC to be provided)	4.1	IS 2633

7.2 ROUTINE TESTS

Test	Clause No.	Reference Standard
Visual inspection of tubing and moulded components for free from pin holes, cracks, nicks, protrusion and other defects	3.15	ENA -TS 09-13
Dimension check	As per TPCODL/ TPWODL/ TPNODL/ TPSODL approved BOM	
Electric Strength	3.4	ENA -TS 09-13
Ultimate Elongation	3.12	ENA -TS 09-13
Tensile Strength	3.12	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Wall thickness ratio	3.3	ENA -TS 09-13
Expanded and recovered diameters of tubes	3.3	ENA -TS 09-13

7.3 TYPE TESTS:

(i) Terminations & Straight Through joints

Test	Clause No.	Reference Standard
AC Voltage withstand Test (Air)	8.6	IS 13573(Part-1)
AC Voltage withstand test (Immersed)	8.6	IS 13573(Part-1)
Impulse voltage withstand at ambient Temp.	8.2	IS 13573(Part-1)
Heat Cycle test (in air and water)	8.3	IS 13573(Part-1)
Insulation Resistance (in air)	8.4	IS 13573(Part-1)
Insulation Resistance (immersed)	8.4	IS 13573(Part-1)
Visual Examination	8.8	IS 13573(Part-1)



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(II) Kit Components

a) For Tubing and Moulded Components

Test	Clause No.	Reference Standard
Corrosion Resistance	3.1	ENA -TS 09-13
Density	3.2	ENA -TS 09-13
Dimensions	3.3	ENA -TS 09-13
Electric Strength	3.4	ENA -TS 09-13
Flame Retardance	3.5	ENA -TS 09-13
Heat Shock	3.7	ENA -TS 09-13
Low temperature flexibility	3.8	ENA -TS 09-13
Relative Permittivity	3.9	ENA -TS 09-13
Tensile strength and Ultimate elongation	3.12	ENA -TS 09-13
Thermal Ageing	3.13	ENA -TS 09-13
Tracking Resistance	3.14	ENA -TS 09-13
Visual Examination	3.15	ENA -TS 09-13
Volume Resistivity	3.16	ENA -TS 09-13
Water Absorption	3.17	ENA -TS 09-13

b) For Compression Lugs and Compression Ferrules

Test	Clause No.	Reference Standard
Conductivity test	8.3	as per IS 8309/ IEC 61238, part - 1

8. TYPE TEST CERTIFICATES:

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at **CPRI/ERDA** as per relevant IS. However, TPCODL/ TPWODL/ TPNODL/ TPSODL. TATA-POWER reserves the right to allow any other NABL accredited/ Govt. lab report / Lab having accreditation from ILAC Signatory under exceptional circumstances after due diligence/ scrutiny by DISCOM. Type tests should have been conducted during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPCODL/ TPWODL/ TPNODL/ TPSODL.

9. PRE-DISPATCH INSPECTION:

The material shall be subject to inspection by a duly authorized representative of the TPCODL/ TPWODL/ TPNODL/ TPSODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or



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material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPCODL/ TPWODL/ TPNODL/ TPSODL's representatives at all times when the work is in progress. Inspection by the TPCODL/ TPWODL/ TPNODL/ TPSODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPCODL/ TPWODL/ TPNODL/ TPSODL

Following documents shall be sent along with material.

- a) Test reports
- b) MDCC issued by TPCODL/ TPWODL/ TPNODL/ TPSODL
- c) TPCODL/ TPWODL/ TPNODL/ TPSODL Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable).

10. INSPECTION AFTER RECEIPT AT STORE:

The material received at TPCODL/ TPWODL/ TPNODL/ TPSODL store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Project Engineering department.

11. GUARANTEE:

Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Company up to a period of at least 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract whichever is later.

Further Bidder shall also stand guarantee towards poor workmanship in installation of straight through joint and terminations installed by bidder's joiner up to 60 months from the date of installation.

Bidder shall be liable to undertake to replace/rectify such defects at own costs, within mutually agreed time frame, and to the entire satisfaction of TPCODL/ TPWODL/ TPNODL/ TPSODL, failing which TPCODL/ TPWODL/ TPNODL/ TPSODL shall be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the



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Company's own charges (@ 20% of expenses incurred), from the bidder or from the "Security cum Performance Deposit" as the case may be. Bidder shall further be responsible for free replacement for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Company.

12. PACKING AND TRANSPORT:

Supplier shall ensure that all material covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

13. TENDER SAMPLE:

Bidder shall be submit the sample of material during tender evaluation process with the offer (in case of first supply to TPCODL/ TPWODL/ TPNODL/ TPSODL).

14. QUALITY CONTROL:

The bidder shall submit QAP indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections.

15. TESTING FACILITIES:

Supplier/ Manufacturer shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant Indian standards.

16. MANUFACTURING FACILITIES:

The successful bidder shall submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer.

17. SPARES, ACCESSORIES AND TOOLS

Not applicable.



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18. DRAWINGS AND DOCUMENTS:

Following drawings and documents shall be submitted in line with the requirement of Tender specifications:

- a) Completely filled in Schedule "A" Guaranteed Technical Particulars & Schedule "B" Deviations
- b) Work Experience details
- c) BOM
- d) Type test certificates.
- e) Drawing 1 Set of Hard Copy & Soft Copy PDF File containing complete information about manufacturing.

19. SCHEDULE- "A" GUARANTEED TECHNICAL PARTICULARS:

S. No.	Parameter	Units	To be Furnished by Bidder
1	Max. Withstand System Voltage	KV	
2	Continuous operation withstand Temperature	°C	
	Short Circuit withstand temperature	°C	
3	Withstand short circuit current	KA/1Sec	
4	Storage Temperature Range	°C	
5	Shelf life of kit components excluding mastic and solution	Years	
6	Shelf life of mastic and solution	Years	

A. General Technical Particulars for Heat Shrinkable Insulation Tubing/ Sleeves/ Wrap around Sleeve:

S.No.	Parameter	To be Furnished by Bidder
1	Visual Examination	
2	Wall thickness Ratio	
3	Internal diameter of tube after full recovery	
4	Longitudinal change	



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S.No.	Parameter	To be Furnished by Bidder
5	Electric Strength	
6	Tensile Strength	
7	Ultimate Elongation	
8	Heat Shock	
9	Low Temperature Flexibility	
10	Volume Resistivity	
11	Tracking resistance	
12	Flame Retardant (Applicable only for Anti tracking Tubes/ sleeves)	

**B. General Technical Particulars for Heat Shrinkable moulded components/ Breakouts/
Weather sheds**

SI.No.	Parameter	To be Furnished by Bidder
1	Visual Examination	
2	Wall thickness Ratio	
3	Internal diameter of tube after full recovery	
4	Longitudinal change	
5	Dielectric Strength	
6	Tensile Strength	
7	Ultimate Elongation	
8	Heat Shock	
9	Low Temperature Flexibility	
10	Volume Resistivity	
11	Flame Retardant (For anti-tracking moulded components)	



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20. SCHEDULE “B” DEVIATIONS:

(TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

SL. No	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.

Seal of the Company:

Signature

Designation



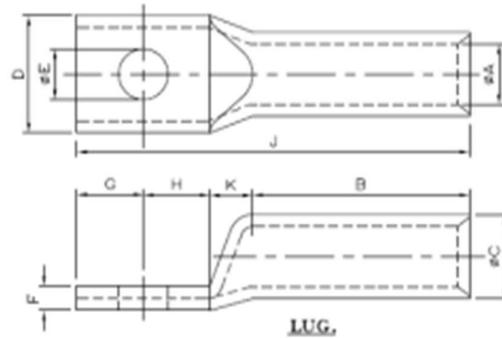
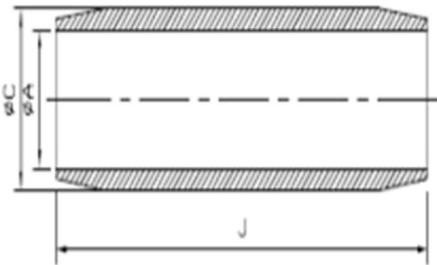
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Cable Size in MM ²	ΦA (mm) +/ -0.3mm	ΦC (mm) +/ -0.3 mm	J (mm)
16	5.4	8.3	65-75
25	7.2	9.7	65-75
50	10	13.5	80-90
95	12.9	17.3	100-110
150	16.3	21.5	120-130
300	23.6	31	140-150

Cable Size in MM ²	ΦE (mm) ±0.1mm in centre of palm	ΦA (mm) ±0.3mm	ΦC (mm) +0.5 mm	D (mm) ±1.5mm	F (mm) -0mm	B±3.0mm	J (mm) ±5mm
300	17	23.9	31	45	7	89	157



For remaining cable sizes, dimensions of Ferrules & Lugs shall be as per IS.

Annexure- II

Inspection Test Plan for HS Jointing kit components

S. No.	Name of test	Specified value(Range)	Reference documents	Test Result	Pass/Fail
1	Visual inspection	Free from pin holes, cracks, nicks, protrusion and other visible defects.	ENA-TS-09-13 Clause No. 3.15 & TPCODL/ TPWODL/ TPNODL/ TPSODL/ specification		
2	Physical verification of kit contents and dimensions	Dimensions as per TPCODL/ TPWODL/ TPNODL/ TPSODL approved BOM			
3	Electric Strength test	10 KV /mm (Minimum)	ENA-TS-09-13		



Specification No: [ENG-LV-3008](#)

Specification Name:

Technical Specification For Heat Shrinkable Straight through Joint & Termination for 1.1KV Cable

S. No.	Name of test	Specified value(Range)	Reference documents	Test Result	Pass/Fail
			Clause No. 3.4		
4	Ultimate Elongation tests	200% (Minimum)	ENA-TS-09-13 Clause No. 3.12		
5	Tensile Strength	10 N/mm ² (Minimum) For anti-track tube-8 N/mm ²	ENA-TS-09-13 Clause No. 3.12		
6	Tracking resistance test(Anti-tracking Tube)	NO Tracing erosion to top surface /flash failure after 1 hr 2.5 KV 1hr 2.75KV 20 min 3.5 KV	ENA-TS-09-13 Clause No. 3.14		
7	Volume Resistivity	1x10 ¹⁰ Ohm- meter (Minimum)	ENA-TS-09-13 Clause No. 3.16		
8	Wall thickness ratio	0.6 or 60% (Minimum at any two points of measurements)	ENA-TS-09-13 Clause No. 3.3		
9	Expanded and recovered diameters	As per TPCODL/ TPWODL/ TPNODL/ TPSODL approved BOM	ENA-TS-09-13 Clause No. 3.3(i)		
10	Longitudinal change after recovery	10% max	ENA-TS-09-13 Clause No. 3.3(ii)		
11	Heat shock test	No splitting, cracking, dripping or flowing after 30 min @200°C min	ENA-TS-09-13 Clause No. 3.7.1/ 3.7.2		
12	Low temperature flexibility	No cracking after 4 Hrs @ Minus 20°C max	ENA-TS-09-13 Clause No. 4.5		
13	Insulation build up thickness after shrink on Ferrule as per IS 10810 -6	Not less than as specified in specification	as per IS 10810 -6 Clause No. 8.1		
14	Flame retardant test	After one min burn: burnt or charred length 250 mm max.	ENA-TS-09-13 Clause No. 3.5.1/ 3.5.2		



Specification No: [ENG-LV-3008](#)

Specification Name:

Technical Specification For Heat Shrinkable Straight through Joint & Termination for 1.1KV Cable

S. No.	Name of test	Specified value(Range)	Reference documents	Test Result	Pass/Fail
15	Area measurement of tinned copper braids (Area of one wire x no. of wires x no. of carriers)	As per TPCODL/ TPWODL/ TPNODL/ TPSODL/ Specification/ approved BOM			
16	Ferrules/ connectors/ lugs dimension and conductivity test	As per annexure-I in this specification	as per IS 8309 Clause 8.3		
17	Uniformity of zinc coating on GI mesh as per IS 2633	No reddish color after one dip for ½ minute in CuSO4 solution	as per IS 2633 Clause 4.1		

CENTRALIZED CONTRACTS GROUP

NIT No.: TP-ODISHA DISCOM / CCG / 23-24 / 100000539

SLA & Scope of Work for HT ABC & LT Cable Fault Repair & Jointing Services**1.0 Introduction:**

TP-ODISHA DISCOMs is a joint venture between Tata Power and the Government of Odisha. We have total 4nos. of Discoms namely TPCODL, TPNODL, TPSODL & TPWODL. We provides power supply distribution of 33kV, 11kV & 0.440V rated across the Odisha.

2.0 Purpose:

The purpose of this contract is as follow for each DISCOMs:

1. To avail dedicated team for LT underground cable fault repair services 24x7.
2. To attend LT cable fault repair work within timeline as per SLA.
3. To attend preventive/condition based maintenance of UG cables.
4. To deploy skilled jointers for installation of HT ABC & LT joint/termination kits for O&M and project work.
5. To supply and install necessary materials as per scope of work for LT underground cable repair work.

3.0 Scope of Work**3.1 Digging / Excavation of Fault Locations:**

1. To ensure availability of dedicated team to register, coordinate and execute the excavation work 24 X 7 across each DISCOMs.
2. To deploy team with all necessary T&P (as per Clause no 4.1.C) for fault location digging work as per SLA.
3. To provide sufficient manpower for excavation work to expose the faulty part for cable repair work as per SOP.

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4. To arrange for open trench digging and cable laying work as per standard in case of fault location bypass require.
5. To provide JCB / pneumatic hammer / dewatering pump as per site requirement for excavation work on approval from Engineer-in-charge (EIC) of respective DISCOMs as per SOP.
6. JCB / Pneumatic hammer shall be used only for hard surface excavation with minimum one metre cube area excavation in an hour.
7. Arrangement of shoring & planking inside excavation pit in case of depth exceeding 1.5m to ensure worker safety.
8. To submit report on digging work by site supervisor in TP-ODISHA DISCOM standard format at periodic intervals or on daily basis as per requirement of EIC of respective DISCOM.
9. **Standard Pit Dimension (Single straight thru Joint / Two Straight thru joint)**
BA has to adhere the below mentioned pit dimensions at all time for proper placing of joints and loop cables.

Cable Details	Single ST Thru. Digging Pit L*W*D (M)	Two ST Thru. Digging Pit L*W*D (M)
1.1 kV Cable	3 * 1 * 0.8	7 * 1.5 * 0.8

Actual Depth, length and width of the faulty cable may vary on site due to Terrain/Civic activities/Site constraint.

3.2 Cable Jointing / Termination work:

1. To ensure deployment of highly skilled & OEM certified cable jointers for installation of cable jointing kit and accessories in each DISCOMs for O&M and Project work as per SLA.
2. To coordinate and monitor the installation activities of cable and accessories, one experienced site supervisor shall be deployed.
3. To commence installation of HT ABC / LT cable jointing kit & accessories as

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per SOP.

4. To provide all necessary tools & tackles as per Clause no. 4.1.C and consumable items like cotton waste, cleaning cloth, kerosene, etc. to each jointers for installation work as per TP-ODISHA DISCOM standard.
5. To attain for preventive repair of cables / joints / terminations as per SOP.
6. To maintain a record of all the jointing work attend in a computerized data base format (MS excel) and shall be shared on daily and monthly basis or as per required by EIC of each DISCOMs.
7. To arrange the healthiness (IR) check of both side cables before making joints as per SOP.
8. To arrange for spiking through spiking tool before cutting the cable during jointing work as per SOP.
9. To arrange for transportation of cable & required accessories from Division store/section store to sites for cable repair work.
10. To arrange for the delivery of faulty part of cables / joints back to the Sub Division/Section Stores/head office for failure analysis.
11. To arrange all necessary tools & manpower for cable / joint failure analysis.
12. To ensure all scraps to submit in section's store after work completion.
13. To arrange for supply & installation of all require materials for cable (preventive/breakdown) repair work as per SOP.
14. Cable tags made of Aluminium sheets are to be installed on the repaired cable. Tags shall have following information engraved with metal engraving device.
 - i) Vendor Name
 - ii) Voltage level & size
 - iii) Date of repairing
 - iv) Jointer name

Dimension of tag: 0.5mm X 7cm x 3cm.

3.3 Backfilling & Reinstatement of Digging Place:

1. To arrange all necessary man & materials for backfilling of excavated pit with the unearthed soil after completion the cable jointing work as per

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SLA.

2. To supply and install bricks along the cable joints before backfilling as per SOP.
3. To supply and fill with fine grade sand in joint pits as per SOP.
4. To supply and install RCC slab as per approved drawing above the sand as per SOP.
5. To lay cable warning tape above RCC slab during back filling.
6. To arrange for removal of excess debris from sites after backfilling.
7. To arrange for reinstatement of damaged road/civil part by concreting of M20 grade PCC as per SOP.
8. To supply & install cable route/joint marker at each joint place for identification of cable route/pit.

3.4 Preventive Work:

1. To attain minor repair work of 1.1 kV UG cable including outer jacket repairing, termination sleeve repairing, socket replacement, etc as per SOP. All required manpower, tools & tackles for installation shall provide by BA. Material will be provided by respective DISCOM.
2. To deploy team for vermin proofing of RMU (Ring Main Units) / CSS (Compact Sub Stations). Scope is including supply & installation of all required manpower & necessary materials for vermin proofing like M-seal, Glass putty, Bakelite sheet, etc.
 - a) Monthly planning for vermin proofing jobs will be provided by TP-ODISHA DISCOM.
 - b) Vermin Proofing of RMU(3W, 4W, 5W & 6W)- 1 EA
 - c) Vermin proofing of both HT & LT side of CSS- 2 EA
3. To arrange for sign writing on poles near cable route for cable marking. All required man & material shall provide by BA.
4. To supply and install the below mentioned material & accessories for preventive work:
 - a) New earthing system including GI flat, 3Mtr GI Pipe, Bentonite powder and other necessary materials for cable earthing.

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- b) Fine grade sand fill inside joint pits to enhance joint life.
- c) M20 RCC covering slab (600 X 300 X 25 mm) as per TP-ODISHA DISCOM standard to cover cables/joints during repair work.
- d) M25 grade Cable / Joint Marker (800 X 350 X 120 mm) for marking the cable route and each joint place.

4.0 Performance Standard and Measurement

4.1 Service level agreement:

1. In the event of any performance based measurement criteria not reported/ reported partially in the appropriate format, would lead to deduction of 100% marks specific to the criteria.
2. TP-ODISHA DISCOM reserves the right to change/ add to the list of existing performance base measurements, at any point of time during the execution of the contract. This will be communicated in writing to the BA by EIC of respective DISCOM on mutually agreed terms.
3. All engaged site supervisors by BA must have minimum ITI (Electrical) level with 2years experience or Diploma (in Electrical) with 1year experience in relevant field.
4. All engaged jointers by BA must be certified from TP-ODISHA DISCOM approved OEM (Jointing kit) with min. 2years jointing experience.
5. Competency assessment of all skilled & semi-skilled manpower by BA shall be conducted by EIC of respective DISCOM before joining. Further assessment will be carried out on timely basis as per requirement.
6. The performance system shall comprise measurement of BA's performance on the parameters listed under Performance Measurement (4.B). The total marks for the performance will be 100 in a month.

a) Safety aspects, Statutory Compliances

1. All jobs shall be carried out after taking necessary Permit to work (PTW) or valid caution order number from respective section

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incharge.

2. All jobs shall be carried out by using PPEs and safety equipment. List of PPEs as per the specifications mentioned in CSM to be allocated to all the BA personnel.
3. All jobs shall be carried out as per approved standard operating procedure (SOP). Copy of latest SOP shall be provided after award of contract.
4. All statutory compliances as mentioned in attached GCC and applicable laws to be complied to.

The performance measurement parameters along with sub measures and penalty are mentioned under "Performance Measurement Parameter (4.B)".

For safety incidents/violations, Contractor Safety Management shall be applicable.

b) Timeline for Team Deployment & Restoration Period

1. **To adhere the below mentioned timeline to deploy manpower for cable repair work across each DISCOMs.**

- a. **Critical cable:** for **Urban** Section within 3hrs. from receiving the call and for **Rural** Section within 6hrs from receiving the call.
- b. **Non-critical cable:** within 24hrs. of receiving the call.
- c. In case of area/consumer has no power supply due to fault, Team has to be deployed within min. possible time (not more than 2hrs.)

2. **To adhere the below mentioned restoration period for cable fault repair:**

- a. Critical Location: 8 Hrs.
- b. Non-Critical Location: 12hrs.

Restoration period will be calculated as below:

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T1: Time at which call is received by BA from Cable & Switchgear Management Team for cable repair.

T2: Time at which Back-filling/Removal of Debris is completed after jointing work.

Restoration Period = (T2-T1) Hrs.

However if due to site conditions or factors beyond the control of TP-ODISHA DISCOM and BA, the job is delayed, then the target timeline will be revised by TP-ODISHA DISCOM. The delay may be for any of the following reasons.

- a) More cable depth, due to which the excavation has to be extended.
- b) Cable is near to the other utilities and difficult to expose the cable.
- c) Job is suspended due to external interference like traffic police, R&B, NHAI, Municipal Corporation or public.
- d) Non-receipt of required material from respective DISCOM.
- e) Any of the consent/approvals not being granted by the relevant authorities.

c) Supply and Use of Testing equipment and Tools & Plant (T&P)

Following testing equipment and T&P must be available with BA for carrying out the jobs. At any given point of time regular replenishment is the responsibility of BA. The below mentioned list may be considered as requirement for each.

Tools	Make	Specification
Hydraulic Crimping Tools	Dowll, Jainson or Equivalent	50 sq mm to 800 sqmm
Gas cylinder with torch	Any Make	Portable type
Jointer Knife	Any Make	Heavy Duty
Multimeter / continuity test	Rishab or equivalent	0-650 Volts
Digital IR Tester	Megger or equivalent	Min. 5kV range
Extension cord (3core) with ELCB & MCB Board	GE, Ligrand , L&T or equivalent	Rating : 30 mA
Halogen/LED Light	Any Suitable Make	Wide focus for night
Dewatering Pump	Any Suitable Make	High Discharge head, -2HP

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Pneumatic Hammer	Any Suitable Make	Heavy Duty
Hand Cutter	Any Make	Suitable for cable work
Hack Saw	Any Make	Insulated rubber handle
Hammer	Taparia / Pye	0.5 KG
Lineman Tester	Taparia / Pye	Suitable of LT cable
Industrial Search Light	Any Make	Heavy Duty
Lineman's Insulated pliers	Taparia / Pye	8 Inch
Screw Driver of different heads	Taparia / Pye	One sided fixed only.
Box Spanner set	Taparia / Pye	Suitable for fixing lugs up to 300 sq mm
Tool box / Tool Bag	Taparia / Pye	Suitable for keeping required equipment
Safety Cone with Caution tape	Any Make	Suitable for work site
Measuring Tape	Any Make	30 M
All required suitable digging tools for manual excavation	Any Make	All suitable tools handle should be well insulated and of good condition.
Other necessary tools as per requirement	-	-

d) Supply & Usage of PPEs

As per PPE Matrix shared by TP-ODISHA DISCOM:

- Safety helmet (IS:2925-1984) with visor (EN: 166 CE marked)
- Safety shoes (IS:15298), insulated gloves(EN: 60903 CE marked),
- Face Visor (big enough to cover up to neck)
- Reflector Jacket.
- Hand Cotton Gloves.
- Gum Boot.

Any other PPE as per Engineer In-charge requirement.

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4.2 Performance Measurement

EIC at his discretion will deduct marks for mentioned below:

e) Statutory Compliances (Total Weightage: 15 Marks) :

Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	Non-Compliance w.r.t. to PF, ESIC related Statutory norms	15	Monthly	15

f) Team deployment timeline as per SLA (Total Weightage: 15 Marks):

Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	1-2 instance violation to the timeline	15	Monthly	5
2	3-4 instance violation to the timeline			10
3	5 or more instance violation to the timeline			15

g) Restoration period as per SLA (Total Weightage: 15 Marks):

Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	1-2 instance violation to the target period	15	Monthly	5
2	3-4 instance violation to the target period			10
3	5 or more instance violation to target period			15

h) Compliance of T&P as per SLA (Total Weightage: 15 Marks):

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Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	1 instance non-compliance of T&P	15	Monthly	5
2	2-3 instance non-compliance of T&P			10
3	3 or more instance non-compliance of T&P			15

Note:- One mark count as one percentage of each month bill value.

5.0 Documentations:

- a) BA must properly document the location, landmark & GPS coordinates of the joint pit and jointer details.
- b) GPS location must be captured with a very high precision GPS device.
- c) All documentation has to be shared weekly with EIC of respective DISCOM along with shared MIS format.
- d) Job cards for each cable accessory installation work.

6.0 Record Keeping:

BA shall also maintain the following records:

- a) Details of the Digging Calls/Work received/executed as per TP-ODISHA DISCOM MIS format (Daily/Monthly).
- b) Detailed job cards for the repairs undertaken.
- c) Details of the cable accessories installed as per TP-ODISHA DISCOM format (Daily/Monthly).
- d) GPS location of each joint made.

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7.0 TP-ODISHA DISCOM's Scope:

1. Respective DISCOMs will provide the required materials like cables, jointing/term kits, clamps, HDPE pipes, cable end sealing caps to the jointing BA in free of cost for cable repair work.
2. Respective DISCOMs will provide testing facility related to cable and accessories in case of low IR value or fault not visible during cable repair.
3. Concerned section of respective DISCOM will issue "**Caution Order/PTW**" before commencement of Digging & associated work. (Any work which is not covered under the scope of this agreement shall be carried out only based on the specific written request).
4. Any cable identification and Hi-pot test shall be done by respective DISCOM.
5. Permission for excavation of road / place from concern dept. will raised by the concerned section / sub division officer of respective DISCOM.

8.0 Guarantees

Guarantee/Warranty period shall be sixty months from the date of installation. In case of failure of cable joints or terminations installed by jointing BA within the guarantee period will result in following deduction:

- i. Deduction of all expenses incurred including cost of jointing kit, pit excavation, installation & reinstatement work for fault restoration.

Monthly joints failure analysis has to be carried out by the BA in the presence of cable management team of respective DISCOM. In the analysis of the failure of joint is attributed to manufacturing defect in cable joint then no penalty will be imposed on BA. Report of the previous month is to be submitted with the subsequent month bills baring which the joints would be deemed to have failed in the guarantee period.

9.0 Special Instruction:

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1. The above mentioned activities of the scope are indicative in nature. However, BA shall ensure that the deployment of resource will be made in such a way that the activities to ensure power supply reliability as defined in SLA.
2. BA shall arrange for required resources in shift/rest/leave reliever as applicable laws.
3. BA shall provide good uniform with all required PPEs to their all engaged manpower.
4. BA shall deploy adequate manpower, vehicles and T&P at no extra cost for adherence to the scope and SLA of this tender document based on the direction of EIC of respective DISCOM.
5. BA must deploy a single person of contact (SPOC) for day to day co-ordination with Sections and cable management team for each DISCOM.
6. Provision of adequate two wheeler or four wheeler vehicles for BA staff to carry out their official duties as asked by EIC shall be completely in the scope of BA.
7. BA must maintain daily attendance of his/her manpower & submit the monthly attendance report duly verified by EIC along with monthly bill.

10.0 Schedule of Items (BOQ)

Refer the Annexure – I

11.0 List of Circles/Divisions/Sub-Div./Sections of each DISCOMs:

Circle, Division, Sub Division & Section Office of TPNODL			
Circle	Division	Sub Division	Section
Balasore	BED Balasore	Supply S/D-I Balasore	No. I
			Gopalgaon
			No.II
			Chandipur

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		Supply S/D-II Balasore	Mathasahi	
			No. III	
			Ganeswarpur	
			No.IV	
	CED Balasore	RE S/D-I Balasore		Remuna
				Durgadevi
				Rupsa
		RE S/D-II Balasore		Odangi
				Saragoan
				Srijung
		Nilgiri S/D		Fuladi
				Nilgiri
	Sergarh			
	Mitrapur			
	BED Basta	Basta S/D		Barahampur
				No.I
		Jamsuli S/D		No.II
				Rajghat
				Baliapal
	JED Jaleswar	Jaleswar S/D		Langaleswar
Jamsuli				
No.I				
No.II				
Bhograi S/D			Nampo	
			Hatigarh	
			Kamarda-I	
			Kamarda-II	
SED Soro	Soro S/D		Bhograi	
			Dehurda	
			Chandaneswar	
			No.I	
	Bahanaga S/D		No.II	
			Anantapur	
			Sabira	
			Bahanaga	
			Khantapada	
			Gopalpur	

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			Avana
		Markona S/D	Markona
			Adabazar
			Balikhanda
		Khaira S/D	Khaira
			Dungura
			Oupada
			Gandibeda
		No. I S/D	No.I
			Tahasil
			No.II
			Charampa
		No. II S/D	No.III
			Rahanja
			No.IV (Randia)
		Basudevpur S/D	Eram
			No.I
			No.II
		Dhamra S/D	Bedeipur
			Dhamra
		Tihidi S/D	Tihidi
			Jashipur
			Chandbali
			Dolasahi
		Rural S/D Bhadrak	Bonth
			Agarpada
		Asurali S/D	Arnabal
			Asurali
			Betaligaon
		Dhamanagar S/D	Dhamanagar
			Bhandaripokhari-I
			Bhandaripokhari-II
		Duburi S/D	Duburi
			Sukinda
Jajpur Road	JRED Jajpur Road	Jajpur Road S/D	Dala
			Chorda Chhaka
			Danagadi

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NIT No.: TP-ODISHA DISCOM / CCG / 23-24 / 100000539

		Jajpur Road S/D	Korei	
		Panikoili S/D	Panikoili B.T. Road (Baitarani Rd)	
	JTED Jajpur Town	Jajpur Town S/D	No.I	No.II
			No.III	Dasarathpur
		Dasarathpur S/D	Mangalpur	Ahiyas
			Binjharpur S/D	Binjharpur No.I Binjharpur No.II Balmukuli Madhusudanpur
	KED, Kuakhia	Kuakhia S/D	Mathasahi	Brahmabarada
			Kuakhia	Jaraka
		Dharmasala S/D	Kundapatna	Neulpur
			Kabatabandha	No.I, Bari
		Bari S/D	Sujanpur	No.II
			Amathpur	
	Keonjhar	KED Keonjhar	No. I Keonjhar S/D	No.I
				No.II
No.III				
No. II Keonjhar S/D		RE-1	Telkoi	
		Banspal	Turumunga	
		Saharpada	Patna	
JED Joda		Joda S/D	Joda	Jurudi
			Barbil S/D	Barbil No.I Bhadrasahi

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		Champua S/D	Barbil No.II
			Champua
			Jhumpura
			Remuli
	AED, Anandpur	Anandpur S/D	Ramachandrapur
			Anandapur
			Ghasipura
			Kesudurapal
		Ghatagaon S/D	Ghatagaon
			Harichandanpur
Bidyadharpur S/D		Dhenkikote	
		Bidyadharpur	
Baripada	BED Baripada	Baripada S/D	No.I
			No.II
		Rural S/D	Bhanjapur
			Chhancha
			No.III (Shamakhunta)
			No.IV (Suliapada)
	Betnoti S/D	Raghunathpur	
		Betnoti	
	Morada S/D	Baisinga	
		Kochilakhunta	
		Morada	
		Rasgobindapur	
	Kuliana S/D	Gaon Amarda	
		Kuliana	
		Bangiriposi	
		Jharpokharia	
	RED Rairangpur	Rairangpur-I S/D	Sarsakana
			Rairangpur
			Bahalda
		Rairangpur-II S/D	Kantabani
Tiringi			
Kusumi			
			Bisoi
			Jamda

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

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		Karanjia S/D	No.I
			No.II
			Thakurmunda
		Joshiipur S/D	Joshiipur
			Sukuruli
			Raruan
	UED Udala	Khunta S/D	Khunta
			Badasahi
		Udala S/D	Manatri
			Kaptipada
			Udala
Circle, Division, Sub Division & Section Office of TPCODL			
Circle	Division	Sub Division	Section
Circle-BBSR-I (Cir-I)	BCDD-I BBSR	Sub-Division No.I	P.H-I
			P.H-II
			Unit-VI
			Delta
			Brit Colony
		Sub-Division No.II	Unit-I
			Unit-II
			Kharavel Nagar (Unit III)
			Unit-IV
			Unit-IX(Road)
		Sub-Division No.III	Unit-IX(Flat)
			Saheednagar
	Gridco Colony		
	BCDD-II BBSR	Khandagiri	Khandagiri
			Kalingnagar
			Dumuduma
			Bharatpur
		Nayapalli	Nayapalli
			Baramunda
			VSSnagar
Peripheri		Xavier	
	C.S.Pur-I		
	C.S.Pur-II		
			Kananvihar

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	BED BBSR	Rasulgarh	Godisahi
			Baranga
			Kalpana No-I
			Kalpana No-II
			Laxmisagar
			Rasulgarh
			Mancheswar
		Fulanakhara	
		Temple	Old Town No-I
			Old Town No-II
	Old Town No-III		
	NED Nimapara	Kakatpur	Baragada
			Dhauri
			Uttara
		Nimapara	Kakatpur-1
			Kakatpur-2
			Astarang
		Pipli	Nimapara-1
			Nimapara-2
			GOP
Konark			
BBSR-II (Circle -II)	KED, Khurda	Khurda	Pipili-1
			Pipili-2
			Bharatipur
			Balakati
		Jatni	Balipatana
			Khurda No.I
			Khurda No.II
			Khurda No.III
		Jankia	Khurda No.IV
			No.I
			No.II
		Banki	Janla
			Harirajpur
			Jankia
	Malipada		
	Nirakarpur		
	No.I		
	No.II		

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		Begunia	No.III
			Begunia
			Baghamari
			RajSunakhala
	PED, Puri	No.I	Kalaphthar
			Paschimadwar
			Kacheri
			Swargadwar
		No.II	Baliapanda
			Brahmagiri No.I
			Brahmagiri No.II
			Sunamuhin
		No.III	Delang
			Kanas
			Ghodabazar
			Talabania
		Sakhigopal	Charinala
			Power house
			Sakhigopal No.I
			Sakhigopal No.II
	NED, Nayagarh	Nayagarh	Satasankha
			Chandanpur
			Nayagarh
			Periphery
			Sarankul- I
			Sarankul- II
		Itamati	Odagaon- I
			Odagaon- II
		Khandapada	No.I
			No.II
Bolagarh			
Khandapada			
Dasapalla		Bhapur-I	
		Bhapur-II (New)	
		Kantilo	
		Dasapalla	
BED, Balugaon	Tangi	Nuagaon	
		Gania	
		Tangi	

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			Chandapur (Tangi-II)
			Bhusandapur
			Kuhudi
			Ranapur
		Balugaon	No.I
			No.II
			Banapur- I
			Banapur- II
			Nachuni
Cuttack (Circle-III)	CDD-I, Cuttack	Electrical Sub Division-I, Ranihat	Ranihat-I
			Ranihat-II
			Buxi Bazar
			College Square
		Electrical Sub Division-III, Sisubhawan	Kazibazar
			Ganesh Ghat
			City
			Town Hall
		Electrical Sub Division-IV, Kalinga	Cantonment
			Tinikonja Bagicha
			Chandin Chowk
			Tulasipur
	Electrical Sub Division-VI, CDA	CDA	
		Bidanasi	
	CDD-II, Cuttack)	Electrical Sub Division, Badambadi	Badambadi
			Dolamundai
			Khapurja
		Electrical Sub Division, Mahanadi Vihar	Mahanadivihar
Chauliaganj			
Electrical Sub Division, Jobra		Jobra	
		Jagatpur	
		42 Mouza	
		Kandarpur	
		Kishan Nagar	
JOBRA, CUTTACK	Electrical Sub Division, Choudwar	Choudwar-I	
		Choudwar-II (Tangi)	
		Charibatia	
	Electrical Sub Division, Badachana	Badachana	
		Balichandrapur	
		Chhatia	

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		Electrical Sub Division, Gopalpur	Balikuda	
			Adaspur	
			Govindpur	
		Electrical Sub Division, Niali	Niali-I	
			Niali-II	
			Dimiri	
	ATHAGARH (AED, Athagarh)	Electrical Sub Division, Athagarh	Athagarh-I	
			Athagarh-II	
			Khuntuni	
		Electrical Sub Division, Narasinghpur	Tigiria	
			Nuapatana	
			Narasinghpur	
	SALEPUR (SED, Salipur)	Electrical Sub Division, Salipur	Badamba	
			Kanpur	
			Salipur	
		Electrical Sub Division, Nischintakoili	Bahugram	
			Japakuda	
			Raisunguda	
Electrical Sub Division, Mahanga	Nischintakoili			
	Asureswar			
	Orikanta			
	Mahanga			
	Kotapada			
	Erakana			
Dhenkanal (Circle-IV)	DED, Dhenkanal	Dhenkanal	No. - I ,Dhenkanal	
			No. - II ,Dhenkanal	
			No. - III ,Dhenkanal	
		Hindol Road	Bhampur	
			Hindol Road	
			Khajuriakata	
		Gondia	Hindol	
			Gondia	
			Joranda	
	Kamakhyanagar	Nihalprasad		
		Kamakhyanagar		
		R.N. Pur		
		Kankadahad		
				Mathakargola
				Bhuban

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	TED, Chainpal	Pallahara	Kaliapani
			Pallahara
			Khamar
			Rengali
			Parabil
		Talcher	Talcher
			Hatatota
			Balanda
			Kaniha
			Samal
		Chainpal	Chainpal
			Banarpal
	Meramandali		
	Parjang	Parjang-I	
		Parjang-II	
	Angul	Angul	Electrical Section No.I, Angul
			Electrical Section No.II, Angul
			Electrical Section No.III, Angul
			Electrical Section Bantala, Angul
		Boinda	Electrical Section Boinda
Electrical Section Bamur			
Electrical Section Athamallik			
Chhendipada		Electrical Section Chhendipada	
		Electrical Section Kosala	
		Electrical Section Jarapada	
Paradeep (Cir-V)		PED Paradeep	Paradeep
			Bhutamundai
	Kujanga	Kujang	
		Rahama	

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		Tirtol	Chatua	
			Tirtol	
			Erasama	
			Kolar	
	KED-I Kendrapara	Aul	Aul	Aul
				BHUINPUR
				Olaver
				Rajkanika
				Chhata
				Danpur
				Indupur
				Kendrapara
		Kendrapara No II		
		Kendrapara No III		
		Pattamundai	Pattamundai	Pattamundai No I
	Pattamundai No II			
	Choudakulat			
	Dandisahi			
	Patrapur			
	Rajnagar	Rajnagar	Rajnagar No I	
			Rajnagar No II	
			Talchua	
	KED-II Kendrapara	Mahakalapada	Mahakalapada	Mahakalapada
				Luna
Babar				
Marshaghai		Marshaghai	Marshaghai	
			Nuapada	
JED Jagatsinghpur	Balikuda	Balikuda	Balikuda No I	
			Balikuda No II	
			Naugaon	
	Jagatsinghpur	Jagatsinghpur	Jagatsinghpur No I	
			Jagatsinghpur No II	
			Mandasahi	
			Dhasahi	
	Raghunathpur	Raghunathpur	Raghunathpur	
			Biridi	

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Circle, Division, Sub Division & Section Office of TPSODL			
Circle	Division	Sub Division	Section
Berhampur	Ganjam North	Rambha	ESO Rambha
			ESO Malud
			ESO Ganjam
		Khallikote	ESO Khallikote
			ESO Keshpur
			Chatrapur
	ESO Chatrapur-II		
	PSED Purusottampur	Purusottampur	ESO P S Pur
			ESO Taratarini
		Polasara	ESO Polosara
			ESO Chirikipada
		Kodala	ESO Kodala
			ESO Beguniapada
	HED Hinjilicut	Hinjilicut	ESO Hinjilicut
			ESO Kanchuru
			ESO Pitala
		Sheragada	ESO Sheragada
			ESO Pattapur
ESO Konkarada			
Bhanjanagar	BNED Bhanjanagar	Bhanjanagar-I	ESO E S O-I
			ESO Tilisingi
			ESO Bhejiput
		Belaguntha	ESO J N Prasad
			ESO Belaguntha
		Soroda	ESO Soroda
			ESO Badagada
		Bhanjanagar-II	ESO E S O-II
			ESO K B Pur
	ESO Kanteipally		
	PED Phulbani	Phulbani	ESO Phulbani

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			ESO Phiringai	
			ESO Khajuripada	
			G.Udayagiri	ESO G.Udayagiri
				ESO Tikabali
				ESO Raikia
			Balliguda	ESO Balliguda
				ESO Daringibadi
				ESO Tumudibandha
		ESO Nuagaon		
		BOED Boudh	Boudh	ESO Boudh
				ESO Purunakatak
			Manamunda	ESO Manamunda
				ESO Baunsuni
		Berhampur City	Berhampur-I	Sub.Div.No-2
ESO Ambapua				
Gopalpur	ESO Gopalpur			
	ESO University			
	ESO Head Quarter			
Bijipur	ESO Bijipur			
	ESO Lanjipalli			
Berhampur-II	Sub.Division No-1		ESO E.S.O.No.1	
			ESO E.S.O.No.2	
	Sub.Division No-3		ESO E.S.O.No.3	
			ESO G.Nuagam-2	
Berhampur-III	Kanisi		ESO Gandhinagar	
			ESO Kanisi	
			ESO Jagapur	
	Sub.Division No-4	ESO Golanthara		
		ESO Kukudakhandi		
		ESO Lathi		
			ESO Luchapada	
Aska	AED Aska-I	Aska	ESO Aska-1	

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		Nuagaon	ESO Balisira	
			ESO Dharakote	
		K S Nagar	ESO Nuagam-I	
			ESO Nuagam-II	
		AED Aska-II	Buguda	ESO K S Nagar
				ESO Budhaamba
	GSED Digapahandi	Digapahandi	ESO Buguda	
			ESO Balipadar	
		Chikiti	ESO Digapahandi	
			ESO Bomakei	
			ESO Chikiti	
			ESO Patrapur	
Jeypore	JED Jeypore	Jeypore SDO-I	ESO Surangi	
			ESO Nuapada	
			ESO Jyp No.2	
		Jeypore SDO-II	ESO Jyp No.3	
			ESO Baipariguda	
			ESO Jyp No.1	
	Boriguma	ESO Kundra		
		ESO Randhapalli		
		ESO Boriguma		
		ESO Kotpad		
	NED Nabarangapur	Nawarangpur	ESO B.Singipur	
			ESO Nabarangapur	
			ESO T Khunti	
		Umarkot	ESO Nabarangapur Rural	
			ESO Umerkote	
			ESO Raighar	
	MED Malkanagiri	Malkangiri	ESO Jharigam	
			ESO Chandahandi	
ESO Malkangiri				
ESO Kalimela				

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		Balimela	ESO Balimela	
			ESO Mathili	
	KED Koraput	Koraput	ESO Koraput Sec-I	
			ESO Koraput Sec-II	
		Sunabeda	ESO Sunabeda	
			ESO Similiguda	
			ESO Pattangi	
			ESO Nandapur	
			ESO Laxmipur	
		Laxmipur	ESO Bandhugaon	
			ESO Kakiriguma	
	NED Nabarangapur	Papadahandi	ESO Papadahandi	
ESO Kosagumuda				
ESO Dabugaon				
Rayagada	RED Rayagada	Rayagada	ESO Rayagada-1	
			ESO Rayagada-2	
			ESO J.K.Pur	
			ESO Rayagada Rural	
	Theruballi	Theruballi	ESO Therubali	
			ESO Kasipur	
			ESO Sikarpai	
	Bissam Cuttack	Bissam Cuttack	ESO Bissam Ctc	
			ESO Muniguda	
	PKED Parlakhemundi	Parlakhemundi	ESO Parlakhemundi	
			ESO Parlakhemundi Rural	
		Kasinagar	Kasinagar	ESO Kasinagar
				ESO Gumma
		Uppalada	Uppalada	ESO Upalada
				ESO Garabandha
ESO Raigada				
Mohana	Mohana	ESO Mohana		
		ESO Chandragiri		

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		R.Udaygiri	ESO Adaba
			ESO R.Udaygiri
			ESO Khajuripada-I
	GED Gunupur	Gunupur	ESO Gunupur
			ESO Gunupur Rural
		Gumuda	ESO Gumuda
			ESO Padmapur
			ESO Gudari
			ESO Ramnaguda
Circle, Division, Sub Division & Section Office of TPWODL			
Circle	Division	Sub Division	Section
Rourkela	RED	Rourkela - 2	Uditnagar
			Power House Road
			Main Road
			Bisra Road
		Rourkela - 3	Basanti - I
			Basanti - II
			Gopabandhupalli
		Rourkela - 4	Shaktinagar
			Koel Nagar
			Jhirpani
		Rourkela - 6	Nayabazar
			Bandhamuna
	Bisra		
	RSED	Rourkela - 1	Industrial Estate
			Civil Town
			Chhend
			Kaliga Vihar
		Rourkela - 5	Panposh
			Lathikata
			Jalda
		Rourkela - 7	Bonai
			Lahunipara
			Koira
Rajgangpur	Rajgangpur - I	Muhuldiha	
		Rajgangpur - I	
			Rajgangpur - II

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		Rajgangpur - II	Kansbahal	
			Rajgangpur - III	
			Bargaon	
			Kutra	
		Kalunga	Kalunga - I	
			Kalunga - II	
		Kuarmunda	Biramitrapur	
			Hatibari	
			Kuarmunda	
		Sundargarh	Sundargarh	Sundargarh - I
	Sundargarh - II			
	Majha Pada			
	Bhedabahal			
	Ujalpur		Subdega	
			Ujalpur	
Sargipali				
Lephipada				
Burla	Sambalpur	Ainthapali	Hemgir	
			Gopalpur	
			Ainthapali	
			Bareipali	
		Khetrajpur	Hospital Road	
			RE Section	
			Badabazar	
			Balibandha	
		Burla	Burla	PHD Section
				Khetrajpur
	Burla - I			
	SEED	Bhutapada	Hirakud	Burla - II
				Burla - III
			Dhanupali	Hirakud - I
				Hirakud - II
Gosala				
			Chiplima	
			Sakhipada	
			C S Colony	
			Brooks Hill	
			Golebazar	
			Dhanupali	

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			Maneswar
			Dhama
			Padiabahal
			Sahaspur
			Rairakhhol
			Hatibari
		Naktideul	
		Rengali	
		Sason	
		Parmanpur	
		Laida	
		Pahadi	
	Jharsuguda	Jharsuguda - I	Kachery Road
			Beheramal
			Bagdihi
			Jhanda Chowk
		Jharsuguda - II	Sarbahal
			Sahapada
			Laikera
			R N Pali
		Kuchinda	Kuchinda - I
			Kuchinda - II
			Bamra
			Jamankira
	Kusumi		
	Brajrajnagar	Brajrajnagar	Brajrajnagar
			Lamtibahal
			Gandhi Chowk
		Belpahar	Belpahar
			Gumadera
Deogarh	Deogarh	Panchagaon	
		Bandhabahal	
		Deogarh	
		Barkote	
		Riamal	
Bargarh	Bargarh	Bargarh - I	Bargarh - I
			Bargarh - II



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			Bargarh - III
			Bargarh - IV
		Bargarh - II	Tora
			Ambapalli
			Barhaguda
		Bhatli	Bhatli
			Bhukta
		Attabira	Attabira - I
			Attabira - II
			Rengali Camp
	Godbhaga		
	Bheden	Larambha	
		Bheden	
		Thuapali	
	BWED	Barpali	Khuntlipali
			Barpali - I
			Barpali - II
		Padampur	Barpali - III
			Padampur - I
			Padampur - II
Gaisilet			
Paikmal		Melchamunda	
		Paimal	
Sohela		Jharbandh	
	Sohela - I		
	Sohela - II		
	Bijepur - I		
	Bijepur - II		
Bolangir	Bolangir - I	Ghenss	
		Bolangir - I	
		Bolangir - II	
		Bolangir - III	
	Bolangir - II	Bolangir - IV	
		REC	
		Chudapali	
	Tusura	Chhatamakhana	
		Tusura	
	Loisingha	Deogaon	
Loisingha			

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	Sonepur	Sonepur	Agalpur	
			Salebhata	
			Sonepur	
			Khari	
			Trava	
		Tarva	Binka	
			Mahadevpali	
			Rampur	
			Cherupali	
			B M Pur	
	Titlagarh	B M Pur	Subalaya	
			Ullunda	
			Titlagarh - I	
		Titlagarh - I	Sindhikela	
			Titlagarh - II	
			Saitala	
			Belgaon	
			Kantabanji	Kantabanji
				Tureikela
Muribahal				
Patnagarh	Patnagarh - I			
	Patnagarh - II			
	Patnagarh - III			
	Belpada			
	Khaprakhol			
Kalahandi	Nuapada	Nuapada	Nuapara	
			Komna	
			Lakhana	
		Khariar Road	Khariar Road - I	
			Khariar Road - II	
			Khariar	Khariar - I
	Khariar - II			
	Sinapali			
	Boden			
	KEED	Bhawanipatna - I	Bhawanipatna - I	
			Bhawanipatna - IV	
		Bhawanipatna - II	Bhawanipatna - II	
			Bhawanipatna - III	
Narla	Chhatiguda			

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			Narla
			Madanpur
			M Rampur
			Biswanathpur
		Kesinga	Kesinga
			Utkela
			Nunmath
			Borda
	KWED	Junagarh	Junagarh - I
			Junagarh - II
			Junagarh - III
			Kalampur
		Dharamgarh	Dharamgarh - I
			Dharamgarh - II
		Charbahal	Golamunda
			Charbahal
	Badkutru		
	Koksara		

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