

Instructions to Bidder (Two bid)

File Reference: CC26VJS006 (Request to quote the said number in all communication related to this package)

The Tata Power Company Limited (TPCL) invites electronically sealed bid for **“OLA of 2 years for Electrical supply & services activities at Consumer Sub-Stations & LT Metering jobs”**.

Specific Instructions: Following documents form part of RFQ

1. Instruction to Bidders (ITB)
2. General Terms and Conditions Service
3. Agreed T&C (ATC)
4. Scope of work and SLA document
5. Format for Query clarification
6. Price Bid format
7. Safety Bid document
8. Formats

In case of any technical query, you are requested to contact:

Mr. R R Pote rrpote@tatapower.com (Mobile: 9930645775)

General Instructions:

1. Bid package is issued in the name of Bidder and is non-transferable.
2. Bidder shall acknowledge the receipt of the tender in Ariba within two (2) working days from the Date of issue of this Request for Quotation (RFQ)/enquiry.
3. Bidders shall review the entire tender document (including technical documents) and ensure the given objectives expected herein can be achieved or the technical requirements can be met in totality. Any deviation or substitution must be highlighted in a separate document.
4. Bidder must carefully go through all commercial conditions of contract before quoting the price. Any exceptions pertaining to clauses affecting prices or costs either way must be clearly stated.
5. Bidders **must** get all their queries resolved in the RFQ stage.
6. Any deviation taken by Bidder may lead to rejection of the bid.
7. Bidder shall quote a firm price and shall be bound to keep this price firm without any escalation for any reason whatsoever until they complete the service against the tender.
8. Bidder shall give clear break-up of the basic price and the taxes and duties included in the price quoted.
9. The quantities mentioned in the tender are liable for change.
10. The award against the tender may be split among more than one bidder at the discretion of TPCL.
11. Tata Power reserves the right to accept or reject any or all bids or cancel/ withdraw the RFQ without assigning any reason whatsoever. In such an event, no claim shall be made arising out of such action.
12. Any time prior to the deadline for submission of Bid, Tata Power may for any reasons, whether at their own initiative or in response to clarifications requested by Bidders, modify the enquiry including specification by amendment. The amendment will be notified in writing to all qualified Bidders to whom the RFQ has been issued and will be binding on them. The Bidder shall acknowledge the receipt of the amendment promptly

upon the receipt of the same. In order to afford Bidders' time in preparing of Bid due to amendment, Tata Power may, at his discretion, extend the deadline set for submission of the Bid.

13. Tata Power will not be liable for any expenses whatsoever incurred by the Bidder for the preparation, submission and opening of bids.
14. Tata Power reserves the right to go for Reverse Auction (RA) for price negotiation and discover the most competitive price on ARIBA portal, Tata Power's official e-tendering platform. This will be decided after techno-commercial evaluation of the bids. Bidders need to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case Tata Power decides to go for RA.
15. Only those bidders who are techno-commercially qualified shall be eligible to participate further in RA process. However, the original H1 bidder (whose price bid is the highest post techno-commercial evaluation) shall not be allowed to participate in further RA process provided minimum three techno-commercially qualified bids are available.

Submission of Offer:-

Two bid system: Bidder shall submit complete bid including list of deviations if any to the Scope of Work and the terms & conditions of the RFQ if any as well as furnish all required and relevant enclosures and submit the same in two different envelopes as under (online in Ariba system):

➤ Techno-Commercial Bid (Un-priced Bid)

Vendor is requested to submit (upload in Ariba) the following as part of Technical Bid

1. Refer Job Scope for all Technical submissions.
2. Duly filled ATC to be attached.
3. Experience certificates/PO copies.
4. Safety Bid document and supporting files.

➤ Price Bid

Vendor is requested to submit (upload in Ariba) **editable** copy of price bid. Price bid must be in the format given by Tata Power.

Pls refer the ANNEXURE – 1 for Accessing Ariba Sourcing for submitting quotation

1. Kindly, note that the Technical Bid shall contain no price details and offers submitted with price details are liable for rejection.
2. Price shall be entered only in the template / format provided in the Ariba system. The documents submitted along with the technical offer will also contain the undertaking that the authorised personnel are making this bid submission.
3. The bidder shall sign its proposal with the exact name of the entity to which the contract is to be awarded. Each page of the bid shall be duly signed and sealed by an authorized officer of the bidder's organization.
4. The bid must be kept valid for **180 days** from the date of bid submission. In exceptional circumstances TPCL may solicit the bidders' consent for an extension of the validity period.

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5. Last Date of Receipt of Queries may be raised in writing by prospect bidders in order to understand Scope of Work specified in the Tender / RFP Document in case of complex requirements, seek clarity regarding spirit of various provisions specified in the Tender / RFP Document or request necessary modifications to the Tender / RFP Document.

For any clarification or queries associated with accessing the tender or submission of the offer please get in touch with Mr Vinayak Shinde at the contact details mentioned below.

Mr. Vinayak Shinde (Lead Engineer – Corporate Contracts)

The Tata Power Company Limited, Sahar Receiving Station,

Near Hotel Leela, Airport Road, Andheri (E), Mumbai 400059, Maharashtra, India

Mobile: 9029001432

Email: vinayak.shinde@tatapower.com Website: www.tatapower.com

Pre-Bid Queries if any has to be sent through compose message in Ariba System. Pre-Bid Query has to be sent only in the Query / Clarification / Deviation (QCD) Format in editable format	:	21.07.2025
Date for Tata Power to respond to the Queries	:	23.07.2025
Due date and time for submission of bids (if extended, it shall be communicated accordingly)	:	30.07.2025

6. Bidders are advised to upload the offers well before the due date so that any technical problems in doing so are addressed prior to the bid submission date and time. In electronic offer submission, the bidder will not be able to upload the offer after the due date and time of submission of bids and hence will not be eligible for further participation. TPCL shall in no way be responsible for this eventuality.
7. The bids will be evaluated by TPCL based on the information asked in this tender and those submitted by the bidder. TPCL may at its discretion ask the bidder for a clarification of its bid for evaluation and comparison of bids. The request for clarification and response should be in writing and no change in the price or substance of the bid shall be permitted unless asked for by TPCL in writing.

8. Bidder Pre-Qualification Requirement (PQR):

Interested parties to note that Bidder shall be required to fulfil the pre-qualification requirement / criteria mentioned below in order to qualify for the subject tender. This is the same PQR that was mentioned in open tender advertisement as well. Bidder will be required to submit relevant supporting documents against each criterion to demonstrate their qualification during the bid submission stage. Bidders not found meeting the pre-qualification requirements given below will be disqualified from the tender.

Instructions to Bidder (Two bid)

No	Parameter	Tata Power Requirement	Documents to be submitted by vendor to ascertain meeting of Pre-Qualification Requirement
1	Bidder's Technical Capability to handle jobs detailed in the Tender	The Contractor shall have minimum 3 years of experience of working with Utilities in Metro Cities for jobs like installation & commissioning of CSS & DSS, Laying of LT & HT cables on public roads & highways, (in area of Municipal Corporation, MMRDA, PWD, Aarey, Seepz, etc.), executing work of multi metering rooms etc.	Bidder to submit list of jobs and major order executed including Order Copies, Customer Reference Documents
2	Financial Capability	Average annual turnover of the bidder for the last three years shall not be less than 3 crores.	Profit & Loss statement and Balance Sheet of three preceding financial years duly audited and approved by Authorised Audit firm / CA. UDIN Number must be mentioned on all such documents.
3	Experience	Bidder shall have executed above listed jobs of worth Rs 1 Cr in past two years for the utility.	Order copies with details of customer for whom work is done.
4	Performance	Bidder shall submit performance certificate for minimum one year from utility / company where they have worked directly or indirectly. In case the bidder has a previous association with TPC-D for similar products and services, the performance feedback for that bidder by Tata Power user group shall only be considered irrespective of performance certificate issued by any third organisation.	Performance certificates

9. The bid package document shall remain the property of the Company.

10. Bid Security / EMD:

Bidder is required to furnish a Bid Security (EMD) along with their Bid, as a Bank Guarantee (in the format prescribed in this tender) for an amount of **INR 5,00,000/-** (Indian Rupees Five Lakhs Only) as per attached format only. EMD to be valid for 6 months from Bid submission date plus an additional claim period of 6 months. Bids not accompanied by an acceptable Bid Security shall be rejected by the Owner as being non-responsive and returned to the bidder without being opened.

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Pls note Tata Power bank details for EMD BG:-

Beneficiary Name – The Tata Power Co. Ltd.

Bank Name – HDFC Bank Ltd.

Branch Name – Fort Branch, Mumbai

Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

Branch Code – 60

Bank & Branch Code – 400240015

Account No – 00600110000763

Account type – CC

IFSC Code – HDFC0000060

Address for sending original EMD BG:

To

Vinayak Janu Shinde

Lead - Corporate Contracts

The Tata Power Company Limited, 2nd Floor,

Sahar Receiving Station, Near Hotel Leela,

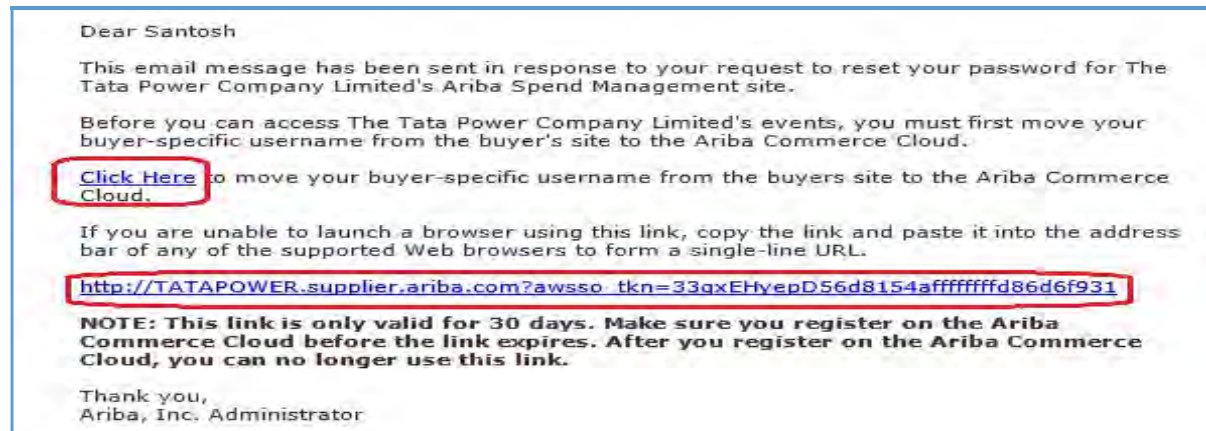
Sahar Airport Road, Andheri East, Mumbai-400059.

Mobile – 9029001432

ANNEXURE 1 –**1. Accessing Ariba Sourcing**

Step 1: You will get an invitation to your email from Ariba System. Keep this email, it contains your login Information and a direct link to Ariba.

Step 2: Click “Click Here” to access the Ariba Web Site.



Step 3: Define your password and secret question. Click “OK”

The screenshot shows the Ariba 'Expired Password' setup screen. The text reads: "Expired Password. Your password has expired. Follow these instructions to complete this step: Create a new password and confirm. Select a secret question and answer it. ...". Below this, there are instructions: "Passwords are case-sensitive, and must be between 8 and 16 characters long. They can include any Latin characters and punctuation marks, and must include at least one numeral between the first and last character. They must also include at least one letter. For example, go2ariba. The current secret answer that you have entered is different from the one that has been recorded for this user." The form fields are: "New Password: *", "New Password (confirm) *", "Secret Question: *", and "Secret Answer: *". The "Secret Question" dropdown is set to "Who is your favorite sports team?". The "Secret Answer" field contains "lives". A red box highlights the "New Password", "New Password (confirm)", "Secret Question", and "Secret Answer" fields. Below the form, there is a checkbox for "I agree" and a link to "Data Policy". At the bottom, there is an "OK" button highlighted with a red box.

Step 4: If it's the first time you are invited to use UPM Ariba, you'll need to accept the “Participant Terms”.

Select “I accept the terms of this agreement”. Click “OK”.

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Participant Terms of the Ariba Site

Please read these Participant Terms of the Ariba Sourcing site ("Agreement") carefully before indicating your acceptance below. By selecting the "I accept the terms of this agreement" button and clicking "OK", you are agreeing to be bound by this agreement. If you do not agree to the terms of this agreement, click "Cancel". You will not be allowed to access the site if you do not accept the terms of this agreement.

PARTICIPANT TERMS

The following terms apply to you if you are a company accessing the Ariba Site because you have been invited to participate in one or more On-Line Events by a Sponsor. If your company has purchased a subscription to this Ariba Site to run Online Events ("Sponsor") these terms do not apply to you.

1. TERMS APPLICABLE TO PARTICIPANTS

1. General. The Ariba Site (the "Ariba Site") is used by Sponsors to conduct sourcing and/or contracting activities, such as online auctions. Site capabilities for a request for proposals, requests for information or other forms of proposal, offer, awarding activities, and drafting and negotiation of contracts (collectively "On-Line Events"). From time to time, Sponsors may invite you to participate in an On-Line Event. If you elect to participate and use the Ariba Site ("Site User"), these Participant Terms (the "Agreement") describe the terms and conditions applicable to such use. Your Site use is strictly subject to your compliance with this Agreement (as updated periodically).

2. Use of the Ariba Site. The Ariba Site and related network services are available only to registered users of the Ariba Site. Ariba retains the sole right to decide whether any entity may be a registered user of the Ariba Site, and whether any entity may use the Ariba Site. If Ariba allows you to use the Ariba Site, you will be deemed a user. No consumer shall act as a user on the Ariba Site.

a. Rules of the Sponsor. For each On-Line Event, you may be presented with the terms and conditions imposed by the Sponsor relating to participation in that specific On-Line Event ("Event Rules"). If the On-Line Event is so configured by the Sponsor, you will only be allowed to participate in the On-Line Event if you agree to the Event Rules.

☒ I accept the terms of this agreement.
☐ I do not accept the terms of this agreement.

2 Submitting Your Answers / Proposal

2.1.1 Review and Approve "Prerequisites"

Step 1: Click "Review Prerequisites"

ARIBA® SPEND MANAGEMENT

Home | References | Help | Logout

Doc24871224 - Hotel RFQ Finland

Time remaining: 4 days 23:00:00

Review and respond to the prerequisites. Prerequisite questions must be answered before you can view event content or participate in the event. Some prerequisites may require the buyer to review and accept your responses before you can continue with the event. If you decline the terms of the prerequisites, you cannot view the event content or participate in this event.

1. Review Event Details

2. Review and Accept Prerequisites

3. Select bids

4. Submit Response

Event Contents

UPM Prerequisites

1.1 Do you accept UPM General Purchasing Conditions for Products and Services?

1.2 Do you accept UPM code of conduct?

If you do not want to submit a bid, please click on the "Decline to respond" and then fill in the reason and click OK.

ARIBA® SPEND MANAGEMENT

Home

Doc9074962 - TEST1000092433 (Invite)

Review the event information and prepare your bid if you wish to participate in this event. Decline to respond if you do not wish to participate.

RDX Information

Name 1

1 RDX Information

In this section it

1.1 RFI and related

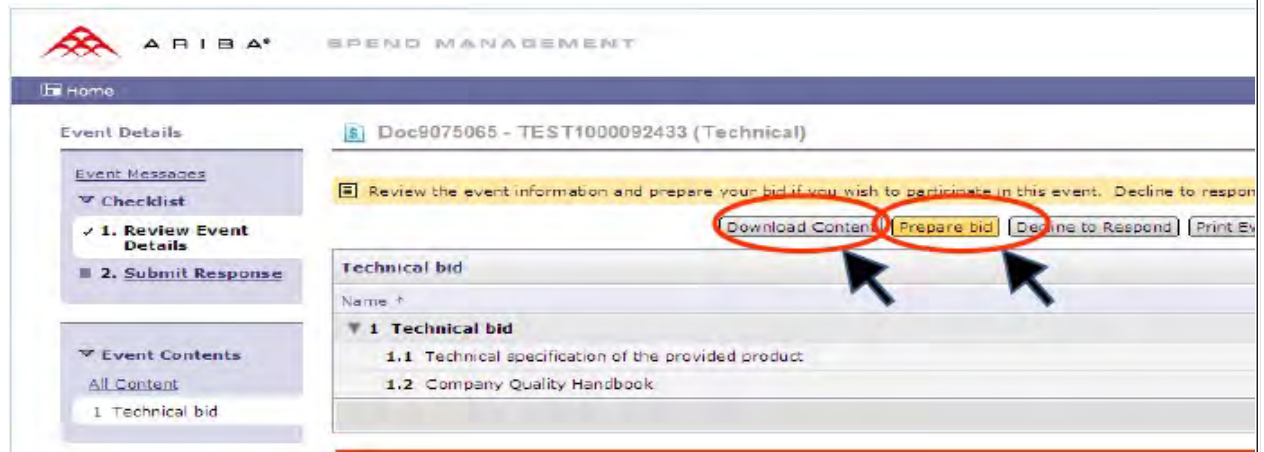
Reason for Declining to Respond

Declining to respond will temporarily remove your accessibility to this event. If you decide to respond to this event later, click the "Respond" button for this event. Please enter the reason for declining.

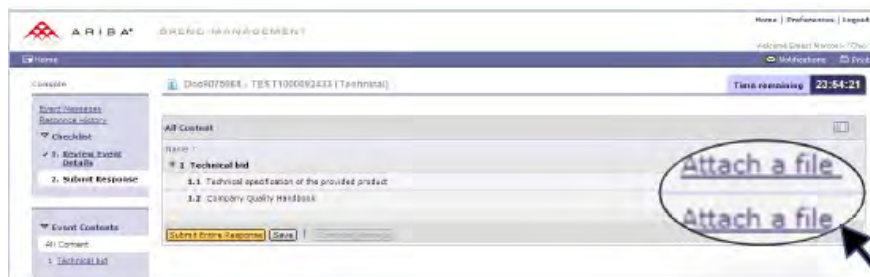
to the RFI

Click on button "Download Content" to download documents provided by buyer.

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Click on “Attach a file” link and then on button “Browse” to search the documents to be uploaded on the system.



For submitting the Techno commercial offer, you can attached the file.

Techno Commercial Bid	
Name ↑	
▼ 2 Techno Commercial Bid	
2.1 Please attach the Techno-Commercial bid	
* indicates required field	
Submit Entire Response Update Totals Save Compose Message Excel Import	

For submitting the Price bid go for 3 Price bid

Instructions to Bidder (Two bid)

Price Bid

Name ↑

▼ 3 Price Bid

▼ 3.1 Ash excavation and transportation

Name ↑	Price	Quantity
Please indicate the unit price for each item		
1.1 Power Packs	100.00 EUR	50 each
Please indicate the unit price for power pack		
1.2 Retaining Rings	500.00 EUR	5 each
Please indicate the unit price for retaining ring		

All Content

Name ↑ Price Quantity

▼ 1 Supply Total

Please indicate the unit price for each item

1.1 Power Packs	100.00 EUR	50 each
Please indicate the unit price for power pack		
1.2 Retaining Rings	500.00 EUR	5 each
Please indicate the unit price for retaining ring		

Click on button “Save” to save the offer and send it afterward or

Click on button “Submit Entire Response” and then on “OK” to send the offer

All Content

Name ↑ Price Quantity

▼ 1 Supply Total

Please indicate the unit price for each item

1.1 Power Packs	100.00 EUR	50 each
Please indicate the unit price for power pack		
1.2 Retaining Rings	500.00 EUR	5 each
Please indicate the unit price for retaining ring		

Submit this response?

Click OK to submit.

OK Cancel

Remember! If necessary you can review and modify your response till the event deadline by clicking on button “Revise Response”

Doc9075069 - TEST1000092433 (Economic)

✓ Your response has been submitted. Thank you for participating in the event.

Revise Response

All Content

Name	Price	Quantity
1 Supply Total		
Please indicate the Unit price for each item		
1.1 Power Packs	95.00 EUR	50 each

Q :- What to do if you have a problem during the e-bidding?

If you have any problem related the system: - **Call first Tata Power e- bidding / Auction Cell**

➤ **e-bidding/auction Cell details:-**

<u>Core team</u>		
<u>Contact Person</u>	<u>E-Mail Id</u>	<u>Contact Details</u>
Ravi Shingare	ravi.shingare@tatapower.com	9029004168

Q Communicating with Tata Power Auction team during auction

Step 1: Click “Compose Message”.

Primary alternative 2

All Content

Name

1 UPM Prerequisites

1.1 Do You accept UPM General Purchasing Conditions for Products and Services ? ✓

1.2 Do you accept UPM code of conduct ? ✓

1.3 Do you accept UPM Environmental Policy ? ✓

1.4 Do you accept UPM CSR ? ✓

1.5 Do you accept UPM Invoicing policy ? ✓

2 Request for Quotation

2.1 Fatty acid Kaipola

More... B

Less... E

Prices

Product reference:

Additional information:

Compose Message

Step 2: Compose Your Message and click “Send”.

SUBJECT: SERVICES FOR INSTALLATION OF CONSUMER SUB STATION AND LT METERING JOBS

CONTENTS:

1. SCOPE OF WORK
2. TECHNICAL SPECIFICATIONS AND CONDITIONS
3. SERVICES
4. TOOLS, TACKLES & SAFETY APPARELS
5. TOOLS AND OTHER ITEMS
 - 5.1 Contractor's Scope of supply
6. SUPERVISION
7. SAFETY
8. MEASUREMENT OF WORK
9. ANNEXURE I- LIST OF JOBS SHORT TEXT AND LONG DESCRIPTION.
10. ANNEXURE II- SPECIAL CONDITION OF CONTRACT
11. ANNEXURE III- PRE-QUALIFICATION REQUIREMENT
12. ANNEXURE IV- TECHNICAL SPECIFICATIONS OF BOUGHT OUT ITEMS
13. ANNEXURE V- CONTRACTOR'S PERFORMANCE EVALUATION & PENALTIES

1. SCOPE OF WORK

- 1.1 The site for installation of consumer substation & LT Metering jobs will be within Mumbai City area, Kalyan, Ambernath, Mira Road, and Bhayandar.
- 1.2 The vendor will be responsible for proper Housekeeping within working premises and co-ordination with customer & Licence Electrical Contractors' for all site related issues, till all equipment are energized.

2. TECHNICAL SPECIFICATIONS AND CONDITIONS:

- 2.1 The work has to be carried out as per Tata Power's Standard & Procedures for erection of consumer substation and LT metering activities. The vendor is advice to study the same by obtaining a copy from TPC before Quoting for the work.
- 2.2 **Installation of CSS equipment**

Installation of CSS equipment like Dry type / Oil filled transformers, [Pad Mounted CSS](#) PSS, [RMU](#), LTP, CT/PT unit, [FRTU](#), FP, Mini Feeder Pillars at site on foundation & on road by making foundation for FP & MP including clearing site, placement of equipment on foundation, anchoring, Fabrication of support structure with MS material including painting as per site requirement, Excavation of soil up to 2.3 Mtr depth for construction of Earth pits, Laying of Hot dip GI strips by excavation of soil & backfilling the excavated earth, formation of Earthing grid by welding GI strips, termination of GI strips to provide earthing connectivity to equipment, making gland plate readiness for termination of HT / LT & Control cables, Vermin proofing, [Stenciling](#) , [Tagging](#) Construction of earth pit chambers with required identifications, providing assistance during [Testing](#), Third Party Inspection, Electrical Inspector [Inspection](#) & charging of equipment.

2.3 Oil filling & Filtration of CSS transformers

Transformer oil (mineral / Ester) filtration with supply of centrifugal filter machine < 1klph and power supply available at site / provision of suitable DG set with fuel and obtaining oil BDV > 60 KV withstanding for 1 min after achieving temperature 60 Deg. with min 3 hours filtration cycle. The necessary required oil top up in main tank and conservator tank shall be taken care by contractor. The Oil BDV report shall be submitted by contractor within 24 Hours of filtration activity. BDV machine electrode gap should be 2.5 mm.

In case of Ester filled Transformer Filters to be changed in Filter machine without any extra cost.

2.3 LT cable and Control cable laying and termination

Laying of LT power and Control cables in excavated trench, cable trench, tray, over surface/wall, dressing, [tagging](#) & cleating, glanding, ferruling and termination.

2.4 Supply & Installation of following items with accessories for fixing at suitable Location

- 1) Supply & Installation of 2 Nos 6 KG DCP fire Extinguisher confirming IS 15683:2006 & 1 No Sand bucket 9 KG volume filled with Sand.
- 2) Supply & Installation of lockable [SLD](#) key box suitable to 1no 4 Way RMU. The key box will be having provision of hook at all isolating points with background of scheme single line diagram.
- 3) Supply & Installation of 1 no [weather proof](#) CPR board, 1 no First Aid Kit
- 4) Supply & Installation of 2 no Danger board of suitable sizes with skull marking as per Voltage level
- 5) Supply & Installation of 1 no Aluminum Etched board 14" x 10" for CSS nameplate.
- 6) Providing 2 no Godrej make 7 lever lock with 3 set of keys
- 7) Insulating mats as per site requirements (1.1 kV/ 22 kV/33 kV)
- 8) Supply & Installation of Exhaust fans for Indoor CSS
- 9) Supply and installation of light fixtures on wall/over fencing with support arrangement, Lighting DB with single phase switch socket, MCB, ELCB etc required for Lighting arrangement for CSS.
- 10) [Installation of FRTU with control cable laying & terminations as per site requirements.](#)

2.5 Supply and Installation of Trays

The scope includes supply and installation of various sizes GI Ladder / Perforated type including jointing and fabrications which required suit at site.

2.6 Board wiring

Complete board wiring including marking on board for meter location, SFU location, [Installation of Modular connectors](#) and wire routing, clip fixing, laying and dressing of 2.5/4/6/10/16 sq.mm Cu multi strand PCV wires, installation of [MCB](#) /fuse boxes and cutouts, termination of wires in [MCB](#)/cut out, earthing of Fuse boxes with 2.5 sq.mm wire.

2.7 Board wiring SFU supply & Installation

The scope includes fabrication, supply and installation of SFU with MS cubicle duly power coated required for board wiring, [with accessories like Flexible pipe and comply to relevant IP class and specification of Tata power Engineering Dept.](#)

2.8 Any other activity which needs to complete CSS installation work and LT metering work will be included in scope.

- 2.9 We reserve the right to depute our site supervisors for QA/QC checks. In case of any deviation and / or bad workmanship, the contract will be terminated immediately and then the balance work will be carried out by us and cost thereof will be recovered from the contractor.
- 2.10 Excavation for Minor Crossings, including taking additional trial pits if necessary, providing one row of earth filled gunny bags at both end of crossings above RCC tiles, supporting and protecting existing utilities, making arrangements for diversion of traffic if necessary, aligning, cutting, laying pipes of various diameter as directed , laying pre cast warning tiles above the pipes and backfilling. Pipes, tiles required will be issued at company's stores located at Sewri Fort/ Chunabhatti/ Pratiksha Nagar, Mahalaxmi R/s, Trombay/ Distribution Division Stores, anywhere in Mumbai region
- 2.11 Contractor should responsible for carefully removing and stacking pavement stones, cub stones, divider blocks, pavers, crazy pattern, chequered tiles etc.
- 2.12 Contractor should do excavation in all types of soils, hard murrum and filled up debris (where other utilities like underground cables, pipes, etc. are likely to be encountered) and stacking of earth at least 3 feet away from the trench. The rate shall include clearing of vegetation, rubbish, removal of slip & falls, setting out profiles, leveling of bed & trimming of sides, supporting the existing utilities at proper spacing with adequate supports to facilitate cable laying & removing the support on completion of work. (Maximum 10 support for 25 m length), stacking the earth in a way to facilitate cable laying / jointing activities. Up to a depth of 2.5 m
- 2.13 Contractor should provide on hire diesel operated dewatering pumps while carrying out excavation work if necessary. The rate includes supplying fuel, operator, delivery/ suction houses of required length, transportation to & from site as well as at site including necessary maintenance/ cleaning of suction valve, repairs to torn/ broken hose pipes, draining into nearest manhole etc. 5 HP & Above but less than 10 HP
- 2.14 The area of activity shall be cleaned of all unwanted materials after completion of work.

3. SERVICES

It is likely that some of the major jobs will be carried out in 2 shifts. It shall be the duty of the contractor to ensure availability of his manpower on the job location (if required in shifts or extended working hours) as per the requirement of the job/activity.

Security of materials, tools and equipment at site will be contractor's responsibility. [Contractor should ensure the Cable /MS scrap recovered from site will be return to Tata power stores.](#) In case of any theft from site, the contractor will have to bear the replacement cost of the missing item.

4. TOOLS, TACKLES & SAFETY APPARELS

All the tools required for execution of job will have to be supplied by contractor. Contractor's tools will have to be declared at the gate with proper challan and certified by the gate security personnel so as to enable issue of exit gate pass after the job is completed. It may not be possible to issue exit gate pass for the equipment in the absence of these documents. The contractor shall take his materials outside the Company's premises with valid gate passes only.

Contractors should carry out Job Hazard analysis for every site and take the necessary precautions. For working in areas other than operational areas, contractors should ensure that non-operational area work permit is obtained from the concerned site engineer and it is validated everyday till the completion of work.

Contractors should use Standard PPEs like proper colored helmets, safety shoes, gumboots with toecaps, safety belts, etc. as per the site requirements.

The contractor shall make his own arrangements for transporting all material required for the work, within the premises of the Company.

In case of working on live system, Tata Power's site engineer/supervisor will identify the live equipment on which job needs to be carry out. After obtaining necessary outages and confirming the system is not charge, he will hand over the same to contractor for further work. The identified equipment / system will be marked with a red tape and the contractor will be issued work permit, authorizing him to start the work.

In case of the work in operational area, Contractor will take extreme care to avoid any occurrence and he will make his manpower aware of the safety hazards.

In case of the work in public places, the care will be taken to comply with MCGM/MMRDA Traffic rules and to cause minimum inconvenience to the people.

5. TOOLS AND OTHER ITEMS

5.1 **CONTRACTOR'S SCOPE OF SUPPLY:**

Contractors are required to procure and maintain necessary tools required for erection of CSS equipment & LT Metering work, Generator set for lighting if work extended in night, Scale for checking earth pit depth, Traffic Signals, Tool Box Talk Register, Ladders, Pliers, and such other materials as may be required in adequate quantities for the work.

The service worthiness of all these tools will be certified by Tata Power site engineer or supervisor before start of execution and if not satisfactory the contractor will not be allowed to [work](#).

Protection and safe custody of these materials will be contractor's responsibility. The contractors are advised in their own interest to insure the materials while being stored by them against theft, pilferage and damage due to any cause whatsoever. Any loss in this regard shall be made good by the contractor.

Along with tools, contractor needs to procure [provide](#) & erect following items as per requirement of CSS & LT Metering scheme given by Tata Power Engineer.

Sr. No	Items/ Material	Approved Makes
1	SFU / Changeover SFU	L&T/ C&S/ Siemens/ ABB or Equivalent
2	ELCB	L&T/ C&S/ Siemens/ ABB / Legrand or Equivalent
3	MCB	L&T/ C&S/ Siemens/ ABB or Equivalent
4	DP	Anchor/ Havells/ Cona or Equivalent
5	Exhaust fan	Havells/ Crompton/ KEW or Equivalent
6	Flexible wires	Polycab/ Universal/ Varsha / Finolex or Equivalent
7	GI pipe for earthing	Tata/ Jindal/ Zenith/ Classic or Equivalent
8	Tinned cu bus bars	Vedanta or Equivalent
9	Cable glands	Comet/ Braco/ Cosmos or Equivalent
10	Cable Lugs	Dowels/ 3D/ Braco or Equivalent
11	Lighting fixtures	Havells/ Crompton/ Bajaj or Equivalent
12	PVC & Flexible pipes & accessories	Finolex or Equivalent
13	KIT KAT fuse unit	KEW/ Anchor or Equivalent
14	TTB	DAV/ IMP/ Connect well or Equivalent
15	Insulating mat for CSS	Raychem / Electro mat or Equivalent

16	LT Cable Joints (HS / Epoxy)	Raychem/ Mahindra M Seal, Western Cablex, Gala Shrink fit or Equivalent
17	Fire cylinder & Sand Bucket	Fire Quit/ Safe Pro/ Fire Stone or Equivalent
18	Al Bus bars	Hindalco or Equivalent
19	19 mm Marin Plywood	Century Plywood/ Greenply/ Swastik or Equivalent
20	HRC Fuse Links	L&T/ C&S or Equivalent
21	Fuse Base	L&T/ C&S or Equivalent
22	MCB Enclosure Box	Anchor/ Havells/ Cona or Equivalent
23	Distribution Box	Anchor/ Havells/ Cona or Equivalent
24	Bakelite sheet	Bakelite Hylam/ Polycam International or Equivalent
25	Anchor fastener	Atlantic or Equivalent
26	Hot dip GI Earth Strips	J K Steel/ Shah Dipchand/ BB Metal/ Vinfab Engineers or Equivalent
27	Clips for board wiring	Equivalent to IS standards for Electrical Installations
28	GI Nut Bolts, washers	Equivalent to IS standards for Electrical Installations
29	SS Nut Bolt, washers	Equivalent to IS standards for Electrical Installations
30	Modular Distribution Block connector (PDB)	TE, HORA, Elmax or Equivalent to IS standards for Electrical Installations
31	Fiber Cement board	Equivalent to IS standards for Electrical Installations
32	Power Cable End cap	Raychem, 3M or Equivalent to IS standards for Electrical Installations
33	LT Cable -T Joints	SICAME / Equivalent
34	Extended Ferrule LT Joint	Gala shrink fit / Equivalent
35	Cu Cable 1c up to 120 SQMM	Polycab / Finolex /Havells/ Equivalent to IS standards
36	Modular Distribution Block connector (PDB)	TE, HORA, Elmax or Equivalent to IS standards for Electrical Installations

Note: Any deviation in make of bought out items shall be subject to approval of Tata Power.

6. SUPERVISION

The contractor shall post full time, [TPSDI L3 Certified, Diploma with 3 Yrs Experience /BE with 1 Yr Experience](#) supervisor possessing the knowledge of and capable of controlling all aspects of the activities entrusted to the contractor. The supervisor shall co-ordinate with our site engineer in respect of all activities pertaining to the work.

The contractor will employ skilled worker & will ensure their timely refresher training & certifications.

7. SAFETY

- 7.4.1 Contractor shall use of all PPE's [as per Site requirement](#) and safety apparels such as Helmets, safety shoes, hand gloves, full body harness, ladders in proper condition. Availability of fire extinguisher is mandatory.
- 7.4.2 All the tools and tackles should have necessary insulation on their handle. Contractor shall use the tools approved by Tata Power; manmade tools shall not be permitted at site.
- 7.4.3 All statutory requirements such as ESIC/EPS/PF/[Police Verification/Medical fitness](#) / Insurance coverage for working personnel should be fulfilled by contractor before commencement of job.
- 7.4.4 Contractor shall follow the safety terms & conditions mentioned in Contractor Safety Code of Conduct & shall submit all documents as per Code of Conduct.
- 7.4.5 Contractor shall take all necessary precautionary measures while executing jobs at public places or any site and will not cause any damage to consumer property or other public utilities such as [power](#) cables, gas line, [communication lines](#) and water lines etc.
- 7.4.6 The Contractor shall deploy [Qualified](#) safety officers and stewards as mandated in the Project safety plan
- 7.4.7 The contractor shall provide orientation/induction training (TPSDI Training) to his entire workforce prior to deploying them on the job & submit the records to Tata Power safety officer on monthly basis.
- 7.4.8 The Contractor shall conduct daily tool box meetings & attend quarterly safety meetings as per the requirements of the Project safety plan.
- 7.4.9 The Contractor shall ensure proper housekeeping at the work sites; ensure segregation of waste at prior identified locations.
- 7.4.10 The Contractor shall thoroughly assess the work scope, properly understand the hazards and risks associated with the job and carry out risk mitigation measure.
- 7.4.11 The Contractor shall carry out proper safety planning for the work scope involved, which includes but not limited to proper access, proper egress, lay down areas, storage areas, waste disposal, movement of manpower and equipment, inspection schedules of tools, PPE, gas cylinders etc.

- 7.4.12 The Contractor shall ensure deployment of skilled and competent personnel for CSS heavy equipment erection, Fabrication of MS, Control cable laying & termination, welding, crane operations, equipment operators, riggers, electricians, fabricators etc.
- 7.4.13 The Contractor shall obtain work permits from Tata Power prior to starting the job.
- 7.4.14 The Contractor shall ensure that all of his workforce working at heights are specifically trained and have been medically certified.
- 7.4.15 The Contractor shall ensure that their workforce shall use proper scaffolds of approved quality and not using temporary work platforms.
- 7.4.16 Contractor shall ensure that his entire workforce is provided with approved PPE such as Gum boot with steel toe, safety shoes, helmet, reflective jacket, leather gloves etc. If contractor fail to provide, Tata power provide the PPE & will debit the PPE amount + 20% extra from the bill.
- 7.4.17 The Contractor shall comply with the Safety, Health & Environment requirements stated in Tata Power safety plan.
- 7.4.18 Contractor shall provide a detailed breakup of his estimate for compliance to safety as per the requirements of the Project Safety Plan
- 7.4.19 Contractor shall report the unsafe act/ condition/ near miss to Tata power. Proactive reporting will be rewarded as per Reward & recognition policy for contractors.
- 7.4.20 Any safety violations shall be treated as per the consequence management policy
- 7.4.21 Contractor shall send their supervisor at Tata power to attend 1 day training on supervision for safety before deploying supervisor at site.
- 7.4.22 Contractor shall submit the monthly safety report containing mandays worked safety training record, incident statics to Tata Power before 5th of every month.
- 7.4.23 Contractor shall provide the drinking water to his workforce during the work & test report of drinking water shall be submitted to Tata power on every quarter.
- 7.4.24 Contractor shall provide first aid box & fire extinguisher (type ABC 5kg) at site.
- 7.4.25 Contractor shall conduct an emergency mock drill at each working site or once in a month & submit the mock drill report to Tata Power.
- 7.4.26 Contractor shall adopt any other safety instructions given by Tata Power on time to time.

8. MEASUREMENT OF WORK:

You & Tata Power Company shall jointly measure the actual quantities of work done against each item, as per standard mode of measurements, within a week of completion of work, & field measurements shall be duly approved by TATA POWER COMPANY. [Contractor shall ensure that signed and approved measurement sheet is attached in service entry sheet.](#) Orders against this contract will be released by Business Unit Head / Network Manager / Departmental Head. All future correspondence regarding this Order shall be addressed to the above-mentioned person. Also, bills to be submitted/ [uploaded in ARIBA](#) to the above-mentioned person.

9. ANNEXURE I

LIST OF JOBS SHORT TEXT AND LONG DESCRIPTION

PI refer attached XL sheet. – BOQ with Item details.

10. ANNEXURE II

Special Condition of Contract

Special Conditions of Contract for Electrical Services

1. The jobs of Electrical Services will be anywhere within Mumbai License Area.
2. Contractor will have to work at consumer premises, various Consumer Sub Stations, Distribution Sub Stations & Receiving Sub Stations, Public places like roads, gardens and any other place as suggested by Tata Power.
3. Contractor shall be prepared to work 24X7 depending on the nature of job as may be instructed by Site Engineer.
4. The Contractor shall have minimum 3 years of experience of working with Utilities in Metro Cities for jobs like installation & commissioning of CSS & DSS, Laying of LT & HT cables on public roads & highways, (belonging to any Municipal Corporation, MMRDA, PWD, Aarey, Seepz, etc.), executing work of multi metering rooms, etc.
5. Contractor shall provide appropriate & adequate safety PPE to all his employees. Over & above instructions from Site Engineer shall be followed for use of specific PPE.
6. Contractor shall ensure that all his employees are trained at TPSDI & possess I Cards issued by TPSDI. The requirement is as below

All Employees	Shall possess L1 Training Card
Tradesman	Shall possess L2 Training Card
Supervisor	Shall possess L3 Training Card

It will be responsibility on contractor to ensure that his workforce will acquire above trainings in 15 days from date of him being selected. Upon failing to do so, Tata Power reserves the right to cancel his claim.

7. The contractor shall possess IMS certification covering ISO Standards in QMS, EMS & OH&S.
8. Contractor will have to adhere to Safety guidelines & safety advisories, issued by Tata Power Safety team/officer from time to time.
9. Tata Power has developed work instructions and procedures for carrying out activities safely. Contractor's supervisor needs to study these work instructions and complete site activities. Any deviation if required as per site condition, needs to be brought to notice of Tata Power's Engineer before start of activity well in advance.
10. Contractor needs to present Performance report for the job executed with other power utilities.
11. Contractor needs to submit test reports / Guaranty cards for brought out items. If any unit like Board wiring SFU is fabricated in workshop, type test reports need to be submitted.
12. After erection, contractor shall assist to site engineer w.r.t manpower for Quality Inspections of the installation, Third Party Inspection, Electrical Inspector visit & charging of the installation.
13. Material & services shall comply with respective specs, BIS codes etc. Site Engineer decision will be final & binding on all contractors.

14. Contractor shall ensure that all materials are installed at sites as per approved make / specifications and shall submit required certificate / any relevant documents as when asked by Tata Power.
15. After receipt of Material from Tata Power's store, Contractor's supervisor shall inspect material w.r.t damages/missing items if any and shall communicate to Tata Power's engineer within 24 hrs., failing which the material provided by TPC shall be considered as "FIT FOR USE AT SITE".
16. Contractor shall make arrangements for drinking water to the people working at site.
17. Contractor shall issue photo I Cards to all his employees.
18. The contractor shall provide an undertaking that he shall follow all the statutory norms required for the work he will be executing with Tata Power Cos. Ltd.

**11. ANNEXURE IV
TECHNICAL SPECIFICATIONS OF
BOUGHT OUT ITEMS**

INDEX

Sr. No	Description
1	Supply of 1 pole MCB 10A to 63A
2	Supply of 2 pole MCB 10A to 63A
3	Supply of 4 Pole, 30mA, 32A & 63A ELCB
4	Supply of 4 pole MCB 10A to 63A
5	Supply of Aluminum Bus bars
6	Supply of Anchor Fasteners and hot dip galvanized Iron nut bolts
7	Supply of Bakelite Sheets
8	Supply of Changeover Switch 125A to 800A
9	Supply of DP Switch
10	Supply of Exhaust Fans
11	Supply of Fire cylinder
12	Supply of Fuse Base
13	Supply of GI Earthing Pipe
14	Supply of GI Earthing Strips
15	Supply of GI Nut Bolts & Washers
16	Supply of HRC fuse Links
17	Supply of Kit Kat unit with fuse wire and Bus bar
18	Supply of LDB
19	Supply of Lighting Fixtures
20	Supply of Link Clips for Electrical wirings
21	Supply of Aluminum lugs, Copper lugs & Brass glands
22	Supply of LT Jointing Kit (Straight/ T Type/Extended Ferrule)
23	Supply of Marine Plywood
24	Supply of MS Box for MCB
25	Supply of PVC & Flexible pipes
26	Supply of PVC insulated Flexible Copper wires upto 16 sqmm
27	Supply of Electrical Insulation Mats
28	Supply of Sand Bucket
29	Supply of Switch Fuse Unit in sheet metal enclosure 63A to 800A
30	Supply of SS Nut Bolts & Washers
31	Supply of Tinned Copper Bus bars
32	Supply of Test Terminal Block
33	Supply of Modular Distribution Blocks (PDB Connector)
34	Supply of Acrylic Sheets
35	Supply & Inst End cap with HS Sealing Services for power cable
36	Supply of Fibre Cement board
37	Supply of Cu Cable 25 Sqmm to 120 Sqmm
38	Supply of SMC / FRP Metering Box

1.0 Supply of 1 pole MCB 10A to 63A:

This specification covers the technical requirements for **supply of 1 pole MCB 10A to 63A**, for installation at **Mumbai Distribution LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 60898-1: 2002 Electrical accessories - Circuit-breakers for over current protection for Household and similar installations, Part 1: Circuit-breakers for ac operation.

3.0 General Requirements

- Breaking capacity of 10kA for the complete range from 10A to 63A tested at CPRI.
- The Tripping Characteristics of Standard MCBs should be of 'B' curve to suit protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits). Short circuit release should be set to (3 - 5) In.
- Dual termination facility for incoming side and can take wire up to 25sq. mm cross section. Wire shall be of copper or aluminium.
- Should be of IP 20 degree of protection. All live parts should be out of human reach ensuring safety to user.
- Can be mounted easily on any of the regular Distribution Boards.

4.0 Technical Requirements

The MCB shall conform to the following depending on the rating.

Sr. No	Technical Parameters	MCB Details
1	Standard Conformity	IS / IEC 60898-1
2	Type	B
3	Rated Current (In) in Amp	10-63A
4	Rated Voltage (ac)	240 V
5	Rated Frequency (f)	50Hz
6	Nos. of Poles (Execution)	Single Pole
7	Rated Short Circuit	10kA
8	Utilization Category Magnetic Release Setting	(3-5)In
9	Rated Insulation Voltage	690 V
10	Rated Impulse Voltage	4 kV
11	Electrical / Mechanical Endurance (No. Of operations)	
	Less than 32A	20,000
	More than 32A	10,000
12	Terminal Capacity (Max)	25 Sq.mm
13	Protection Class	IP- 20
14	Installation Position	Vertical
15	Case & Cover	Moulded, flame retardant thermoplastic material.

1.0 Supply of 2 pole MCB 10A to 63A

This specification covers the technical requirements for **supply of 2 pole MCB 10A to 63A**, for installation at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 60898-1: 2002 Electrical accessories - Circuit-breakers for over current protection for Household and similar installations, Part 1: Circuit-breakers for ac operation.

3.0 General Requirements

- Breaking capacity of 10kA for the complete range from 10A to 63A tested at CPRI.
- The Tripping Characteristics of Standard MCBs should be of 'B' curve to suit protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits). Short circuit release should be set to (3 - 5) In.
- Dual termination facility for incoming side and can take wire up to 25sq. mm cross section. Wire shall be of copper or aluminium.
- Should be of IP 20 degree of protection. All live parts should be out of human reach ensuring safety to user.
- Can be mounted easily on any of the regular Distribution Boards.

4.0 Technical Requirements

The MCB shall conform to the following depending on the rating.

Sr. No	Technical Parameters	MCB Details
1	Standard Conformity	IS / IEC 60898-1
2	Type	B
3	Rated Current (In) in Amp	10-63A
4	Rated Voltage (ac)	240 V
5	Rated Frequency (f)	50Hz
6	Nos. of Poles (Execution)	Double Pole
7	Rated Short Circuit	10kA
8	Utilization Category Magnetic Release Setting	(3-5)In
9	Rated Insulation Voltage	690 V
10	Rated Impulse Voltage	4 kV
11	Electrical / Mechanical Endurance (No. Of operations)	
	Less than 32A	20,000
	More than 32A	10,000
12	Terminal Capacity (Max)	25 Sq.mm
13	Protection Class	IP- 20
14	Installation Position	Vertical
15	Case & Cover	Moulded, flame retardant thermoplastic material.

1.0 Supply of 4 Pole, 30mA, 32A & 63A ELCB

This specification covers the technical requirements for **supply of 4 Pole, 30mA, 32A & 63A ELCB**, for installation at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 12640-1: 2008/ IEC 61008-1: 1996 - Residual current operated circuit breakers
For household and similar uses. Part 1 circuit-breakers without integral over current
Protection (RCCB's).

3.0 General Requirements

- A 30 mA ELCB will provide a high degree of protection against electrocution in an accidental shock hazard situation. The current flowing through human body could be between 80mA and 240mA depending on the resistance of the human body and the voltage across it.
- Breaking capacity of 10kA for the complete range from 32A & 63A tested at CPRI.
- Residual Making Breaking Capacity to suit protection of electrical circuits with equipment should be 500 A or $10I_n$ wherever is greater.
- Dual termination facility for incoming side and can take wire up to 25sq. mm cross section. Wire shall be of copper or aluminium.
- Should be of IP 20 degree of protection. All live parts should be out of human reach ensuring safety to user.
- Test button for regular inspection & Positive contact indication.
- ELCB should be of AC type i.e RCCBs which can detect full wave AC residual currents only.

4.0 Technical Requirements

The ELCB shall conform to the following depending on the rating.

Sr. No	Technical Parameters	ELCB Details
1	Standard Conformity	IEC 61008-1/IS 12640 - 1:2000
2	Sensitivity	30mA
3	Rated Current (In) in Amp	32A & 63A
4	Rated Voltage (ac)	240 V
5	Rated Frequency (f)	50Hz
6	Nos. of Poles (Execution)	Four Pole
7	Short circuit Withstand Capacity kA	10kA
8	Residual Making Breaking Capacity	500 A or 10 In wherever is greater
9	Rated Insulation Voltage	690 V
10	Electrical / Mechanical Endurance (No. Of operations)	10,000
11	Terminal Capacity (Max)	25 Sq.mm
12	Protection Class	IP- 20
13	Installation Position	Vertical
14	Case & Cover	Moulded, flame retardant thermoplastic material.
15	Shock Resistance	40 mm free fall
16	Ambient Temperature	-25°C to + 55°C

1.0 Supply of 4 pole MCB 10A to 63A

This specification covers the technical requirements for **supply of 4 pole MCB 10A to 63A**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 60898-1: 2002 Electrical accessories - Circuit-breakers for over current protection for household and similar installations, Part 1: Circuit-breakers for ac operation.

3.0 General Requirements

- Breaking capacity of 10kA for the complete range from 10A to 63A tested at CPRI.
- The Tripping Characteristics of Standard MCBs should be of 'B' curve to suit protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits). Short circuit release should be set to (3 - 5) In.
- Dual termination facility for incoming side and can take wire up to 25sq. mm cross section. Wire shall be of copper or aluminium.
- Should be of IP 20 degree of protection. All live parts should be out of human reach ensuring safety to user.
- Can be mounted easily on any of the regular Distribution Boards.

4.0 Technical Requirements

The MCB shall conform to the following depending on the rating.

Sr. No	Technical Parameters	MCB Details
1	Standard Conformity	IS / IEC 60898-1
2	Type	B
3	Rated Current (In) in Amp	10-63A
4	Rated Voltage (ac)	240 V
5	Rated Frequency (f)	50Hz
6	Nos. of Poles (Execution)	Four Pole
7	Rated Short Circuit	10kA
8	Utilization Category Magnetic Release Setting	(3-5)In
9	Rated Insulation Voltage	690 V
10	Rated Impulse Voltage	4 kV
11	Electrical / Mechanical Endurance (No. Of operations)	
	Less than 32A	20,000
	More than 32A	10,000
12	Terminal Capacity (Max)	25 Sq.mm
13	Protection Class	IP- 20
14	Installation Position	Vertical
15	Case & Cover	Moulded, flame retardant thermoplastic material.

1.0 Supply of Aluminum Bus bars

This specification covers the technical requirements for **supply of Aluminum Bus bars** for panels to be installed at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 1387: 1993 (General requirements for the supply of metallurgical Materials)
IS 5082: 1998 (Wrought aluminum and aluminum alloy bars, rods, tubes)
IS 3635: 1966 (Methods of Test for Resistance of Metallic Electrical Resistance Material)

3.0 General Technical Requirements

This specification covers supply of Aluminum bus bars suitable for electrical panels.

- The bus bars supplied shall be of electrolytic grade Aluminum.
- Shall have adequate cross section to carry the rated continuous and withstand short circuit current.
- Maximum operating temperature of the bus bars shall not exceed 85°C.
- The bus bar shall be able to withstand fault level of 9KA for 1 sec. for AC panels and 4KA for 1 sec. for DC panels.
- The aluminum bus bars shall be tinned with a thickness not less than 5 microns.
- PVC coloured sleeves of 2mm thick having high insulation properties shall be provided on the bus bar.
- Suitable size insulators shall be provided with the bus bar.

1.0 Supply of Anchor Fasteners and hot dip galvanized Iron nut bolts

This specification covers the technical requirements for **supply of Anchor Fasteners and hot dip galvanized Iron nut bolts**, for installation at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 1367 – 2003 (Technical supply conditions for threaded steel fasteners)

IS-2614 - Methods for sampling of fasteners

IS 2633/1986 Specification for Hot Dip Galvanizing

IS 1363/Part-I & III/1984 Specification of Hexagonal Nuts & Bolts

IS- 12427 Specification for bolts

3.0 General Technical Requirements

- The finish of the item shall be according to Indian standard with all sharp edges and burrs removed.
- Dimensions and tolerances shall be according to IS 1367 (2003).
- Hammer driven pin type anchor for push-through installation.
- The shell of an anchor is driven into the hole without the expansion pin.
- Then the expansion pin is driven into the shell which after being hit expands the shell against the concrete.
- Nuts shall run freely for the entire length of the thread.
- Internal thread shall be cut and oiled after galvanizing.
- Bolt up to M15 and having length up to 10 times the diameter of the bolts should be manufactured by cold forging and thread rolling process.
- The shear strength of bolts for 5.6 grad should be 310-MPa minimum as per IS: 12427
- Bolts should be provided with washer.
- The bolt's heads shall be neatly finished and free from fins, scales and other defects.
- The bolts and nuts shall be hot dip galvanized in according with the requirement of IS: 1367 (1983)
- Bolts and nuts shall be completely inter-changeably.

1.0 **Supply of Bakelite Sheets**

This specification covers the technical requirements for **supply of Bakelite Sheets** for installations at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2036/1995 Grade P2 (Specification for Paper Based Laminated Bakelite sheets)

3.0 **General Technical Requirements**

- The Bakelite Sheet should confirm to IS 2036/1995 of Grade P2.
- The thickness should be of 3mm to 8mm
- Insulation Resistance after immersion in water for 24 Hrs. at 20 Deg Celsius- Above 100Mohms
- Electrical Strength in Oil at 90 Deg Celsius for 3 mm Thick sheet- Above 6.4 kV/mm
- Tensile Strength - 850 kg/cm².
- Specific Gravity- 1.38
- Water Absorption- 169 mg (Specimen Size - 50 ± 1 mm Square)

1.0 Supply of Changeover Switch 125A to 800A

This specification covers the technical requirements for **supply of Changeover Switch 125A to 800A**, for installation at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS/IEC 60947-3: Low voltage switchgear & control gear, Part 3: Switches, disconnectors, Switch-disconnectors and fuse combination units (1999).

3.0 General Requirements

- The primary function of the Changeover switch is to manually switch from the normal to the replacement source. A changeover switch is made up of two or three mechanically interlocked manually-operated switch-disconnectors generally used for fire pump installations for industrial, commercial & residential premises.
- Design of C/O Switches shall be modular cassette type and shall have provision of in-built mechanical self-interlock and dual dead center mechanism ensuring high reliability for changeover function. Hence, the user shall have the option of using the central or side shaft position for operating handle at site.
- All C/O Switches shall have terminal shrouds thus providing touch proof design and preventing accidental touching of live terminals. These shrouds shall be click-fit type and shall be capable of turning to 90 degrees so that terminals can be inspected without removing these shrouds.
- There shall be Source Separator provided to isolate two incoming supplies and to eliminate possibility of flash-over between two supplies due to accidental falling of external object.
- There shall be Source Separator provided to isolate two incoming supplies and to eliminate possibility of flash-over between two supplies due to accidental falling of external object.
- For Higher ratings (400A and above), C/O Switches shall have flip-able handle to enable the user to operate the switch with both ends.
- The handle also shall offer provision for providing 3 Padlocks in OFF Position. Thereby ensuring high reliability of only Authorized Personnel Operating the C/O Switch.
- Rated Impulse Withstand Voltage (Uimp) shall be 12kV for all C/O Switches and they shall comply to Pollution Degree III Norms.
- Should have 3 stable positions (I - O - II).

4.0 Technical Requirements

The Changeover Switch shall conform to the following depending on the rating.

Parameters	125A	250A	400A	630A	800A
Max. Normal rating of fuses	125	250	400	630	800
Insulation voltage Ui (V)	1000	1000	1000	1000	1000
Dielectric strength (V) 50 Hz 1 mn.	5000	5000	5000	5000	5000
Impulse voltage (kV)	6	8	12	12	12
Rated operational currents Ie (A)	125	250	400	630	800
Short-circuit current with fuses (kA rms)	80	80	80	80	80
Peak short-circuit making capacity (kA rms)	20	30	45	45	45
Admissible short time current 1 sec (kA rms)	7	9	13	13	13
Mechanical No. of operations	8000	5000	5000	5000	5000
Electrical No. of operations	1000	1000	1000	1000	1000
Operating force (Nm)	9.5	11	17	17	17
Min. Al cable/bus bar size (mm ²)	120	185	300	2 X 300	3 X 300

1.0 **Supply of DP Switch**

This specification covers the technical requirements for **supply of DP Switch**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS/IEC 60947-3: Low voltage switchgear & control gear, Part 3: Switches, disconnectors,

3.0 **General Technical Requirements**

- The DP switch shall be rated for 32Amps 230V.
- It shall have a neon lamp (25000 burning hours) glow indication for ON status.
- It shall be made of ABS body material.
- It shall be heavy duty flush type made of heavy brass parts on porcelain base.
- The contacts shall be made of pure electrolytic copper components.
- It shall be of ISI marked.

1.0 **Supply of Exhaust Fans**

This specification covers the technical requirements for **supply of Exhaust Fans** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2312-1967 (Reaffirmed 2005): (Propeller type ac ventilating fans)

3.0 **General Requirements**

The exhaust Fans shall confirm to IS standards with following requirement.

Sweep (mm)	Phase	Speed (RPM)	Input (Watt)	Current (Amp)	Free Air Flow (m3/hr.)	Noise level (dB)
300	Single	1400	160	0.70	3600	55-60
450	Single	1400	410	1.70	6800	60-65

1.0 Supply of Fire cylinder

This specification covers the technical requirements for **supply of Fire cylinder**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

- IS 2190: 2010 (Selection, Installation and Maintenance of first-aid fire extinguishers)
- IS 2171:1999 (Specification for portable fire extinguishers, dry powder (cartridge type) (fourth revision)
- IS 4308: 2003 (Dry chemical powder for fighting B and C class fires-Specification (Second revision)
- IS 11833:1986 (Specification for dry powder fire extinguishers for metal fires)
- IS 13849:1993 (Specification for portable fire extinguisher dry powder type (Stored pressure)
- IS 14609:1999 (Dry chemical powder fighting A, B, C class fires - Specification)
- IS 15683:2006 (Portable fire extinguisher - Performance and construction)

3.0 General Requirements

- The Fire Extinguisher shall conform to above mentioned standards.
- The date of manufacture shall not be older than 3 months.
- The Fire Extinguisher shall have a firm handle, mounting bracket, clamp to hold the nozzle of hose.
- Dry Chemical Powder Extinguishers, 5 Kg for CSS.
- Dry Chemical Powder Extinguishers 50 Kg for DSS
- Construction: Body Mild Steel / Austenite Steel Sheets welded construction
- Cap / Valve: Brass Forged / Gun Metal
- Anti - corrosive: Mild Steel Body Epoxy Powder coated with internally & externally.
- Hydraulic Testing: 30 Kgf/cm²
- Working Pressure : ≤ 15 Kgf/cm²
- Charge: Dry Chemical Powder mono-ammonium Phosphate base
- Finish: Epoxy Polyester powder coated / Steel metallic
- Accessories: Wall mounting brackets, Higher Capacities wheel mounted
- Maintenance: The Fire Extinguisher must be maintained as per IS : 2190 for Satisfactory performance.
- Application: B, C class of fires – inflammable liquids, Gaseous fires like L.P.G. and acetylene, and electrical fires.

1.0 Supply of Fuse Base

This specification covers the technical requirements for **supply of Fuse Base** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 13703-1993/ IEC Pub 269-1 (1986)/BS: 88 -1&2: Low voltage fuses for voltages

3.0 General Technical Requirements

- Fuse bases should be moulded out of high grade flame retardant , non- hygroscopic phenolic moulding powder conforming to IS:1300/BS:771.
- Contacts should be made of electrical grade copper with silver plated for low watt loss.
- Spring steel rings should maintain their intrinsic elasticity even at elevated temperatures.
- Current carrying parts of the holders should be made from precisely pressed copper/brass material and have extruded brass base contacts mounted on moulded seats to ensure perfect alignment.
- Suitable for HRC blade fuse links at a rated voltage of 415 V, 50 Hz AC. Short circuit rating of 80kA.
- Should be open type fuse bases in the size of 00, 01, 02, and 03 for mounting of DIN type fuse links.

Parameters	125A	250A	400A	630A	800A
Max. Normal rating of fuses	125	250	400	630	800
Insulation voltage U_i (V)	1000	1000	1000	1000	1000
Rated Frequency (Hz)	50	50	50	50	50
Impulse voltage (kV)	6	8	12	12	12
Rated operational currents I_e (A)	125	250	400	630	800
Short-circuit current with fuses (kA rms)	80	80	80	80	80
Admissible short time current 1 sec (kA rms)	7	9	13	13	13
Min. Al cable/bus bar size (mm ²)	120	185	300	2 X 300	3 X 300
Rated Power Acceptance in Watts	25	32	45	60	60
Size	00	01	02	03	03
Rated Breaking Capacity kA	100	100	100	100	100

1.0 Supply of GI Earthing Pipe

This specification covers the technical requirements for **supply of GI Earthing Pipe** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS: 2629(1966) (Recommended practice for hot dip galvanized of Iron Earthing Strips)

IS: 2633(1972) (Methods of testing weight, thickness & uniformity of coating on hot dip galvanized articles)

IS: 5358(1969) (Specification for hot dip galvanized coating on fastness)

IS: 3203 (Specification for Electroplating)

IS: 4759(1968) (Specification for hot dip Zinc coating)

3.0 General Technical Requirements

- Earthing pipe must be made out 50 mm nominal bore & 4 mm wall thickness heavy gauge (no minus Tolerance allowed) Hot Dip G.I pipe (as per IS :- 1239, Part-1, 1990) of reputed Make & 2.5 Mtrs. long.
- The pipe electrode shall be cut tapered at the bottom side for a length of 75 mm and welded clamp at top end. The pipe shall be in one piece and no joint shall be allowed in the electrode.
- Staggered drills hole of 12 mm Dia of interval of 150mm up to 2 meter from bottom side shall be made before galvanization. The GI Earthing Clamp/ Strip (C- Clamp Type) is to be of 75mm width, 10mm thickness & flange length of 65 mm to be welded with pipe before galvanization. This should be suitable for termination of 4 nos of GI Flat to the earth electrodes. The Clamp/ Strip & Earthing pipe should be hot dip galvanized confirming to IS: 2629/85 with latest amendments.
- The clamp shall have two holes in both sides suitable for 5/8 x 2" Bolt & provided with two GI Bolts of 5/8 x 2" long half threaded with spring washer. However, high tensile steel nuts, bolts and spring washer shall be electro galvanized. The zinc coating shall be smooth, continuous and uniform. It shall be free from acid spot and shall not scale, blister or be removable by handling or packing. There shall be no impurities in the zinc or additives to the galvanic bath which could have a detrimental effect on the durability of the zinc coating.
- The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629 and shall not less than 0.61kg/m² with a minimum thickness of 86 microns for items of thickness more than 5mm, 0.46kg/m² (64 microns) for items of thickness between 2mm and 5mm and 0.33kg/m² (47 microns) for items less than 2mm thick.

1.0 Supply of GI Earthing Strips

This specification covers the technical requirements for **supply of GI Earthing Strips**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

- IS: 2062 Grade A" Quality (Specification for M.S. Channel and M.S. Flat)
- IS: 2629(1966) (Recommended practice for hot dip galvanized of Iron Earthing Strips)
- IS: 2633(1972) (Methods of testing weight, thickness & uniformity of coating on hot dip galvanized articles)
- IS: 5358(1969) (Specification for hot dip galvanized coating on fastness)
- IS: 3203 (Specification for Electroplating)
- IS: 4759(1968) (Specification for hot dip Zinc coating)

3.0 General Technical Requirements

- Fully galvanized Iron strips shall be used in all Electrical Installations.
- Galvanized Iron strips shall confirm to IS: 2629 (1966).
- The zinc deposition should not be less than 610 grams/meter square of the galvanized surface area of the MS Earthing strips.
- All galvanized materials shall withstand test as per IS: 2633 (1972).
- The weight of zinc coating shall be determined as per the method stipulated in IS: 2633(1964).
- The zinc required for galvanizing shall be quality Zn-98 & shall confirm to IS: 209- 1966 and its latest amendments.
- The standard length of Galvanized Iron Earthing Strip shall be minimum 7 Mtrs and not exceeding 10 Mtrs.

Mechanical Properties:

- Tensile strength Kg/mm² - 410.
- Yield stress Min. for thickness/diameter
- <20 mm - 250N/mm²
- 20-40 mm - 240N/mm²
- 40 mm - 230N/mm²
- Elongation % - 23%
- Bend Test (Internal Dia) - Min-3t (t- thickness of the material)

1.0 Supply of GI Nut Bolts & Washers

This specification covers the technical requirements for **supply of GI Nut Bolts & Washers** for installations at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2633/1986 (Specification for Hot Dip Galvanizing)

IS 1363/Part-I & III/1984 (Specification of Hexagonal Nut & Bolts)

IS 1367 Part-III: 2002 ()

IS 1500: 2005 (Method for Brinell Hardness Test for Metallic Materials)

3.0 General Technical Requirements

- G.I.Bolt with nut & spring washer shall conform to 1363 (P-I & III)/84.
- Bolts & Nuts shall be Hot Dip Galvanized, Spring washer shall be Electroplated.
- Galvanizing Test as per IS-2633/1986.

1. Supply of GI Nut Bolts & Washers

This specification covers the technical requirements for **supply of GI Nut Bolts & Washers** for installations at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2. Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2633/1986 (Specification for Hot Dip Galvanizing)

IS 1363/Part-I & III/1984 (Specification of Hexagonal Nut & Bolts)

IS 1367 Part-III: 2002 ()

IS 1500: 2005 (Method for Brinell Hardness Test for Metallic Materials)

3. General Technical Requirements

- G.I.Bolt with nut & spring washer shall confirm to 1363 (P-I & III)/84.
- Bolts & Nuts shall be Hot Dip Galvanized, Spring washer shall be Electroplated.
- Galvanizing Test as per IS-2633/1986.

1.0 Supply of HRC fuse Links

This specification covers the technical requirements for **supply of HRC fuse Links** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall confirm to the latest edition of the Following IS / IEC standards:

IS 13703-1993/ IEC Pub 269-1&2 (1986)/BS: 88 -1&2: Low voltage fuses for voltages

3.0 General Technical Requirements

- Suitable for HRC blade fuse links at a rated voltage of 415 V, 50 Hz AC. Short circuit rating of 80kA.
- Fuse link should have positive indication of the operation with red colour pop.
- Lower power loss for saving energy & low cut off current to reduce electromagnetic stresses.
- Should have low I²t let through energy reducing thermal stresses, fire risks & damage to equipment.
- Fuse link should be with blade contact i.e. DIN type.
- Body should be of high grade flame retardant non-hygroscopic phenolic moulding with a hard gloss surface having high electrical properties with high tracking resistance.
- Contacts should be made of electrical grade copper with silver plated for low watt loss.

Parameters	125A	250A	400A	630A	800A
Max. Normal rating of fuses	125	250	400	630	800
Insulation voltage U _i (V)	1000	1000	1000	1000	1000
Rated Frequency (Hz)	50	50	50	50	50
Impulse voltage (kV)	6	8	12	12	12
Rated operational currents I _e (A)	125	250	400	630	800
Breaking capacity (kA rms)	80	80	80	80	80
Utilisation Category	gG	gG	gG	gG	gG
Non-fusing current	1.25I _n	1.25I _n	1.25I _n	1.25I _n	1.25I _n
Material of body	25	32	45	60	60
Size	00	1	2	3	3
Material of the fusing element	Steatite Ceramic	Steatite Ceramic	Steatite Ceramic	Steatite Ceramic	Steatite Ceramic
Material of the filler	Silica Quartz	Silica Quartz	Silica Quartz	Silica Quartz	Silica Quartz
Material of the blade	Brass	Brass	Brass	Brass	Brass
Indication of blown fuse	Required	Required	Required	Required	Required

1.0 **Supply of Kit Kat unit with fuse wire**

This specification covers the technical requirements for **supply of Kit Kat unit with fuse wire** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 13703-1993/ IEC Pub 269-1&2 (1986)/BS: 88 -1&2: Low voltage fuses for voltages

IS: 9926:1981 (Fuse wires used in rewirable type fuses)

IS: 2086: 1993 (Carriers & bases in rewirable type Electric Fuses)

3.0 **General Technical Requirements**

- Rewire able fuse units shall be made of ceramic which shall be of sand fine grain homogenous non-porous chemically inert and high electrical and mechanical strength and shall be thoroughly vitrified and smoothly glazed. It shall be nonignitable.

- The porcelain and glaze shall be white or cream in colour. The glaze shall cover at least those surfaces which are exposed when the, fuses have been mounted in the intended manner. The mounting surface may be left unglazed.

- The materials should not have any defect such as –

Crazing: A hairline crack in glaze of ceramic material.

Dunt: A hair line fracture extending through the body and the glaze and caused by strains set-up in the process of manufacture of ceramics materials.

Projection: A raised imperfection, projecting more than 0.75 mm above the surface of the ceramic material.

Water: The ceramics material shall not absorb more than absorption 2% of its weight of water when broken and tested for.

- The carrier and fuse base when installed in the intended manner shall have all live parts so protected as to prevent inadvertent contact with such live parts.
- All metal parts shall be protected against corrosion by suitable methods.
- The rated breaking capacity of the fuses up to 16A rating is 2 KA and for above 16A rating the same shall be 4 KA, at a p.f. not exceeding 0.4 (lag).
- The fuses base shall be provided with two fixing holes for fixing the fuse base by means of screw bolts. The contact fixing screw holes in fuses shall be fitted with insulating material fully into the surface of the Kit Kat fuse carrier
- Current carrying parts shall be of robust construction and capable of carrying their rated current without exceeding the temp rise limits clause 4.2.1 of IS specification 2086-1993. i.e. 55 degree centigrade for rating 16amps to 100amps Kit Kat fuse.

- Iron and steel parts shall not be used for current carrying parts except as clamping device or pressure such as punching screws, clamps or wire binding screws and nuts.
- The contacts of the fuse base, fuse carrier, terminal blocks/strips shall be as under:
 Fuse carrier contacts Tinned Brass (Male Contacts)
 Fuse base contacts Phosphor Bronze (Female contacts)
 Terminal block/strips Tinned Brass
- The current carrying screws and washers shall be of tinned brass while the screw, washers not carrying current shall be M.S. Galvanized M.S. Electro Galvanized bolt and nut with one plain washer suitable for 63A fuse.
- Copper strips used for contacts of kit kat fuse should confirm to IS: 1897/1983 with latest amendments. The material shall be of electrolytic tough pitch (ETP) grade with minimum 99.9% of copper & silver as per table I of IS191 part IV.
- The phosphor bronze used for contacts of KK fuse shall confirm to any of the grade-I, II or III given in IS: 7814/1985 (with latest amendments). The requirement of metal composition should be as per IS-7814.
- Every fuse carrier shall be clearly and indelibly embossed with the following information.
 - 1) Rated Current
 - 2) Rated voltage
 - 3) Size of fuse wire
 - 4) Manufacturer's name/Trade mark.
- The firm has to submit type test certificates for test conducted on their own brand name make for KK fuses for all the tests as per cl.no. 9.0.3.1 of IS:2086/1993 (with latest amendment) carried out at CPRI Bhopal/Bangalore/ERDA, Baroda or Govt. Recognized laboratory.

1.0 **Supply of LDB:**

This specification covers the technical requirements for **supply of LDB** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2138: 1981 (Flameproof enclosures of electrical apparatus (second revision)

IS 2147 (Degrees of Protection provided by enclosures for low voltage switch gear)

3.0 **General Requirements**

The LDB shall be of approved make & rating with ISI mark

- LDB shall consist of
 - 1X TPN MCCB 63A
 - 2X TPN MCCB 32A
 - 6X SP MCCB 10A
- The MCCBs shall be of approved make.
- PVC insulated colored Flexible Copper wires with ISI mark & of approved make be used for internal LDB wiring.
- Knock out holes of appropriate size & numbers shall be provided in the box for source cable & load cables connection.
- Degree of protection shall be IP52 for indoor use.
- Earthing shall be provided to LDB.
- Spare cutouts should be covered with dummy packing.

1.0 **Supply of Lighting Fixtures**

This specification covers the technical requirements for **supply of Lighting Fixtures**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 **Applicable Standards:**

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2206 (Part 3): 1989 (Flameproof electric lighting Fittings)

IS 2138: 1981 (Flameproof enclosures of electrical apparatus (second revision)

IS 2418 (Part 2): 1977 (Tubular fluorescent lamps for general lighting service: Part 2)

IS 2206 (Part 1): 1984 (Flameproof electric lighting fittings: Part 1 Well-glass and Bulk head types (first revision)

IS 6665-1972 (Reaffirmed 2005): Code of practice for industrial lighting

3.0 **General Requirements**

The lighting fixtures shall be of approved make & rating with ISI mark

- The tube light fixture shall be Twin type 2X40W with Reflectors for indoor use, 1X40W Corrosion proof for use in battery room, 1X40W water proof for outdoor use.
- The size of tube light shall be 4ft for all types.
- The LED (15-40 KW) lights shall be water proof for outdoor use.
- The LED lights of approved make & rating with ISI mark.
- Current carrying parts shall be of robust construction and capable of carrying their rated current without exceeding the temp rise limits.
- All metal parts shall be protected against corrosion by suitable methods.

1.0 Supply of Link Clips for Electrical wirings

This specification covers the technical requirements for **supply of Link Clips for Electrical wirings** at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2412: 1975 (Specification for Link Clips for Electrical Wiring)

IS 737: 1974 (Specifications for wrought aluminum & aluminum alloys, sheet and strip)

3.0 General Technical Requirements

- The clips should confirm to IS 2412/1975.
- Link clips shall be manufactured from aluminum sheet or strip in the annealed condition
- The link clips and the linking eyes (if separate) shall be smooth, free from dents or burrs, or other irregularities and the corners shall be rounded off smoothly.
- There shall be one fixing hole for sizes up to & including 40 mm, & two for sizes above 40 mm.
- The aluminum link clips & the linking eyes (if separate) shall be free from any mark of corrosion.

1.0 Supply of Aluminum lugs, Copper lugs & Brass glands

This specification covers the technical requirements for **supply of Aluminum lugs, Copper lugs & Brass glands** for LT cables laid at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 8309 (1993): Compression type tubular terminal ends for aluminum conductors
of insulated cables [ETD 9: Power Cables]

IS 12943 (1990): Brass glands for PVC cables [ETD 9: Power Cables]

IS 319: Brass (raw material)

IS: 5082 (Material Aluminum)

3.0 General Technical Requirements

This specification covers for cable glands & lugs suitable for 1.1kV Armored PVC Al Conductor Cables of required sizes.

- Compression Type lugs with Natural Surface.
- Both Aluminum & Copper lugs shall be of heavy duty & ring type.
- Gland of appropriate size should be of Brass material.

1.0 Supply of LT Jointing Kit (Straight/ "T "Type/Extended Ferrule)

This specification covers the technical requirements for **supply of LT Jointing Kit (Straight/ "T "Type/Extended Ferrule)** for LT cables laid at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS: 1255-1983 (Jointing Kits for LT cable)
IEC: 60502-04/ 2005 VDE 0278 – Standard for cable accessories
IS 13573 (Part-I&II):2011

3.0 General Technical Requirements

Material used for construction of a joint/termination shall perfectly match with the di-electric, chemical and physical characteristics of the associated cable. The material and design concepts shall incorporate a high degree of operating compatibility between the cable and joints. The Straight through joint kit or termination shall be complete with all accessories, jointing material, insulating stress control and sealing material, lugs, nuts, bolts etc. as well as an instruction booklet explaining the method of using the kit. In case of heat shrinkable type kit, the joint shall include a heat shrinkable dual wall tubing which shall be insulating from inside and semi conductive from outside. The straight through joints should be absolutely impervious to the entry of water. The manufacturer shall use the proven technologies and design to ensure a construction which will prevent entry of water or any other liquid inside the straight through joint and cable.

This specification covers supply of cable joints suitable for 1.1kV Armoured PVC Al Cables for Straight/T type /extended ferrule joints.

- Voltage Grade- 1.1kV.
- Material to be used Polymeric Heat shrink tubes
- Type Of Kit- Straight through Joint
- Impulse withstand on Low voltage kits- As per IS 13573 joints classification.
- For cable size less than 50sqmm - 8kV
- For cable size more than 50sqmm - 20kV
- Heating cycle in Air- As per IS-13573 part-I clause 8.3
- Insulation resistance - As per IS-13573 part-I clause 8.4
- AC High voltage withstand -As per IS-13573 part-I clause 8.6
- Dielectric Strength for insulating Tube- 12kv/mm
- Dielectric constant for insulating tube 3.5(min)
- Tensile strength for insulating tube 8N/mm².
- Ultimate Elongation for insulating tube 200 to 500%
- Water Absorption for Insulating Tube 0.3%
- Heat Shock for insulating tube 30min@2000c,
- Heat Shrink Outer insulating tubes as per requirement
- G.I. Wire mesh / Canister- As per cable size
- Red mastic- As per cable size

- G.I. Solid Collet As per cable size
- Earthing Conductor As per requirement
- Ferrule - As per requirement(Regular/Extended)
- PVC NA Tape- As per requirement
- PVC Adhesive Tape - As per requirement
- Cleaning Liquid - As per requirement
- Aluminum Oxide cloth - As per requirement

- i. The accessories shall be supplied in kit form. Each component of the kit shall carry the manufacturer's mark of origin.
- ii. The supplied joint shall have a range taking feature.
- iii. The kits must have unlimited shelf life.
- iv. The insulating tubing over the connector should be Dual Wall design sleeve with entrapped lubricant.
- v. Type tests should have been carried out to prove the general qualities and design of a given type of jointing system. The sleeve shall be tested for ANSI C1191.1- 1986 or equivalent standard. Type Test Report for the same shall be submitted along with offer.
- vi. The installation of joint shall be done without use of special tools like crimping tool.
- vii. Conductor connection shall be achieved by use of connectors with pre-defined shear off bolt head design. The connector should be range taking which can be used for both copper & Aluminium cables.
- viii. Armour Connectivity shall be maintained by using Tinned copper braid.
- ix. Armour Wrap to be provided for mechanical protection of joint body.
- x. The design of joint shall be such that on completion of joint the cable can be charged immediately.
- xi. Marking & Labeling. As per the IS 13573 (Part-I&II):2011 all kits shall be marked and labeled suitably for identification.

- a. Manufacturer's name or logo and the name of components wherever feasible;
- b. Type of jointing materials, the application;
- c. Batch number(s), where relevant;
- d. Product reference;
- e. Defined storage conditions and expiry date, if any;
- f. If relevant, the manufacturing date;

The heat shrinkable straight through joints (Straight/T type /Extended Ferrule) shall have following.

- a) For encapsulation, environmental sealing set of heat shrink outer insulating tubes with hot melt adhesive coating are required to be provided.
- b) To reduce stress over conductor, heat shrinkable stress control tube to be provided. The stress control tube has to be in electrical contact with the outer insulation screen of the cable. Impedance of the tube shall be constant up to an operating temperature and shall be within the range 1×10^8 ohm-cm to 8×10^8 ohm-cm and with Relative permittivity shall be minimum 15. Voids filling and stress relief over crimped connector and cut point of the insulation screen to be provided with void filling and moisture sealing high permittivity yellow mastic and lubricant. The nested ends of the heat shrinkable tubing shall be provided with environmental sealing red mastic.
- c) For joining of main conductor cores suitable size of ferrules/mechanical connectors with range taking feature should be provided. The cross-sectional area (CSA) of the ferrule/mechanical connector shall not be less than CSA of the conductor of the cable. Length of the ferrule/connector shall be sufficient to allow adequate number of crimps/shear head type bolts, to limit temperature rise at the joint. The thickness of the heat shrinkable tube after installation should not be less than 1.2 times the insulation thickness of the cable. For outer Semiconductor screening of the joint suitable heat shrinkable dual wall tubes which are co-extruded are to be provided.
- d) For cleaning of cores, removing burrs on ferrules & rough insulation. Sufficient quantity of cleaning solvent & aluminum oxide cloth is required to be provided.
- e) For extended ferrule joints GALA make joint kit as per Tata power specifications shall be used.

1.0 Supply of Marine Plywood

This specification covers the technical requirements for **supply of Marine Plywood**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 710: 2010 (For Marine Plywood)

IS 1734: (Methods of Test for Plywood)

IS 5509:2000 (Fire retardant plywood)

IS 303: 1989 (Moisture Resistant (MR) Grade & Boiling Water Resistant (BWR) Grade)

3.0 General Technical Requirements

- Density gms/cc: 0.65 to 0.70.
- Screw holding strength normal to face: above 250kg.
- Nail holding strength normal to face: above 60kgs.
- Fire resistant: quite high.
- Swelling in cold water at room temperature: Approx. 1%.
- Tensile strength: 600 kg/sq.cm.
- Moisture content: 8 -12%.
- Standard Thickness: 19mm.

1.0 Supply of MS Box for MCB

This specification covers the technical requirements for **supply of MS Box for MCB** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2138: 1981 (Flameproof enclosures of electrical apparatus (second revision)

IS 2147 (Degrees of Protection provided by enclosures for low voltage switch gear)

3.0 General Technical Requirements

The MS Box shall be of approved make & rating with ISI mark

- The size of the box shall be 6X3X3 inch
- ON OFF positions shall be marked on the box
- SLD shall be printed on the box
- All MCBs shall be stenciled for identification
- Phase markings shall be done on SPMCBs
- Knockout holes shall be provided in gland plate for cable terminations
- Box shall be painted white by Powder coating
- Caution board shall be provided on the box
- The Box shall be IP55 protection class
- Two earthings shall be provided to box, preferable 25X3mm Copper strip

1.0 Supply of PVC & Flexible pipes

This specification covers the technical requirements for **supply of PVC & Flexible pipes** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 9537 (part 3): 1983 (Conduits for Electrical Installations)

IS 4985 (2000) (Unplasticized PVC Pipes)

IS 10124 (Part 1): 2009 (Fabricated PVC-U Fittings)

IS 12235 (Part 3) 2004: Thermoplastics pipes and fittings- Methods of test

3.0 General Technical Requirements

- The Pipes shall conform to the details as per relevant IS.
- All the Pipes shall possess ISI mark punched on it.
- The thickness of the pipes shall be as per requirement.

1.0 Supply of PVC insulated Flexible Copper wires

This specification covers the technical requirements for **supply of PVC insulated Flexible Copper wires** for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 694: 2010 (Polyvinyl Chloride Insulated Unsheathed & Sheathed Cables/Cords With Rigid & Flexible Conductor for Rated Voltages Up To & Including 450/750 V)

IS 1554 (Part-1):1988 (PVC insulated (heavy duty) electric cables)

IS 5831- 1984 (PVC insulation and sheath of electric cables)

3.0 General Technical Requirements

- The wires shall conform to the latest standards as per IS 694:2010
- The PVC insulation shall withstand temperature up to 90 Deg Centigrade
- The voltage grade shall be 1.1 kV.
- The wires shall be supplied in colors : Red, Yellow, Blue, Black, White & Grey
- The details of current carrying capacity shall be as per IS.
- Variation in Supply voltage +/- 6%.
- Variation in Supply Frequency 50 Hz +/- 5%.
- Type of Cable Copper conductor, Extruded PVC sheath.
- Single Core.
- Material of Conductor Stranded compacted circular Copper conductor as per IS 1554 (Part-1):1988.
- Insulation PVC insulation as per IS 5831- 1984.
- Sheath Extruded PVC Compound Type C as per IS: 5831 -1984.

1.0 Supply of Electrical Insulation Mats

This specification covers the technical requirements for **supply of Electrical Insulation Mats**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IEC 61111- 2009 (Matting of insulating materials for electrical purposes)
IS 15652:2006 (Insulation mats for Electrical Purposes)

3.0 General Requirements

The insulating mats shall be made from the material – elastomer, free from any insertions leading to deterioration of insulating properties. Upper surface of insulating mats shall have small aberration (rough surface without edges) to avoid slippery effects while the lower surface shall be plane or could be finished slip resistant without affecting adversely the dielectric property of the mat.

- Material - Rubber
- Temp Range - -40 Deg Cel - + 70 Deg Cel
- Colour- Dark Grey
- Withstand - 1.1 kV to 36 kV
- Suitable for both AC & DC Installation
- Fire Retardant
- Tested under reputed laboratory ERDA AND CPRI

4.0 Technical Requirements

Threshold level of electric current resistance

Sr. No	Classification	Usage Voltage	Thickness
1	A	Up to 3.3 kV	2 mm
2	B	3.3 to 11 kV	2.5 mm
3	C	11 to 33 kV	3.0mm

Sr. No	Characteristics	Standard Values		
1	Thick ness	2mm	2.5mm	3mm
2	Tensile Strength (N/mm2)	15	15	15
3	Elongation (%)	250	250	250
4	IR with water at 500V	1000000 MΩ	1000000 MΩ	1000000 MΩ
5	Leakage Current	10mA at 3.3 kV	10 mA at 11 kV	10mA at 33 kV
6	AC dielectric Strength	30 kV	45 kV	60 kV
7	AC proof Voltage	10 KV withstand for 3 min.	22 KV withstand for 3 min.	33 KV withstand for 3 min.
8	Flame Retardance	5 sec	5 sec	5 sec

Following test to be performed as per IEC Standard 61111.

- Dielectric test
- Puncture Resistance test
- Ageing test
- Flame retardant test
- Acid Resistance test
- Oil resistance test.

1.0 Supply of Sand Bucket

This specification covers the technical requirements for **supply of Sand Bucket**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 2546:1974 (Specification for galvanized mild steel fire buckets (first revision))

3.0 General Requirements

- The sand buckets shall confirm to the IS 2546-1974.
- Sieved river sand shall be provided in the sand bucket.
- Sand bucket shall be installed at prominent location easy to handle.
- It shall be installed at suitable height at 4ft from ground.
- Suitable brackets shall be fixed on wall mounting.
- For outdoor use the required stand shall be made.

1.0 Supply of Switch Fuse Unit in sheet metal enclosure 63A to 800A

This specification covers the technical requirements for **supply of Switch Fuse Unit in sheet metal enclosure 63A to 800A**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IEC 60947-3 / IS 13947 Pt 1, 3 (Low voltage switchgear)

IS 13703 (Low Voltage HRC Fuses)

IS12063 (Classification of degrees of protection provided by enclosures of Electrical Equipment)

IS 5 (Colour of ready mixed paints)

IS 5082 (Wrought Aluminium & Al alloy plates & sheets for Electrical application)

IS 16162:2005 (Continuously cold-rolled steel sheet products)

3.0 General Requirements

- The primary function of the switch is to manually isolate from the source. The SFU should confirm to AC-23A utilization category as per IS-13947.
- Design of Switch shall be of front operated mechanism.
- Should have separate arcing & current carrying zone.
- Should have high clearances & creepage distance.
- Should be suitable for aluminium termination.
- Phase barriers should be provided.
- Built in switched neutral with clear on/off indication.
- Rated Impulse Withstand Voltage (Uimp) shall be 8kV for all Switches they shall comply to Pollution Degree III Norms.
- Sheet steel enclosure should be sturdy & elegant hinge which permits 180 Deg opening of door.
- Powder coated enclosures with two toned colour.
- The design of the enclosure should be square type. The cover should be fixed to the box by external hinges & self-retained thumb screws. After loosening the thumbscrews the cover should swing open up to 180 deg thus permitting complete access to fuses & terminals. IP should be IP54 after mounting.

- Flange opening should be provided with rubber gaskets on the top & bottom of the enclosure for cable entry.
- An interlock between the switch & the door provided in the handle coupling assembly which is fixed to the door, prevents it from opening in the ON position.

4.0 Technical Requirements

The Switch shall conform to the following depending on the rating.

Parameters	63A	125A	250A	400A	630A	800A
Max. Normal rating of fuses	63	125	250	400	630	800
Insulation voltage Ui (V)	1000	1000	1000	1000	1000	1000
Dielectric strength (V) 50 Hz 1 mn.	5000	5000	5000	5000	5000	5000
Impulse voltage (kV)	8	8	8	12	12	12
Fuse Rating	63	125	250	400	630	800
Rated operational currents Ie (A)	63	125	250	400	630	800
Short-circuit current with fuses (kA rms)	80	80	100	100	100	100
Mechanical No. of operations	15000	15000	10000	10000	3000	3000
Rated operational current AC-23A Utilisation Category	63	125	250	400	630	800
Min. Al cable/bus bar size (mm ²)	35	120	185	300	2 X 300	3 X 300
Terminal Bolt size Metric thread diameter x length mm	-	M8X25	M10X30	M10X40	M12X40	M12X40
Terminal tightening torque Nm	5	15...22	30...44	30...44	50...75	50...75
Operating Torque Nm	3	5	22	22	28	28

1.0 Supply of SS Nut Bolts & Washers

This specification covers the technical requirements for **supply of SS Nut Bolts & Washers** for installations at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following ISO / IEC standards:

ISO 3506-1&2:2009 (Mechanical properties of corrosion-resistant stainless steel Fasteners -- Part 1: Bolts, screws and studs Part 2: Nuts)

3.0 General Technical Requirements

SS Bolt with nut & spring washer shall confirm to ISO 3506
Spring washer shall be electroplated.

1.0 Supply of SMC/FRP 1Ph Metering panel

This specification covers the technical requirements for **supply of Sheet Moulding Compound (SMC) /Fibre-reinforced Plastic (FRP) 1Ph Metering panel** to be installed at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

Supply of SMC meter box suitable to fix single phase energy meter inside the box with the dimension of 340H x 255WX 155D in mm. Fire retardant class FV-0 as per IS 11731 part-II.
Make: Sintex, Medha, EPP

3.0 General Technical Requirements

This specification covers size & manufacturing of copper bus bars suitable for electrical panels.

Supply of SMC meter box with inside dimensions in mm 340H x 285WX 155D and thickness of 3mm for LT single phase KWH meter of Specification:-

1. Light weight, 100% weather proof, shock proof and maintenance free
2. Inside the box provision of din type channel for 32A MCB fixing and also cable gland available for incoming and outgoing cables at bottom of box.
3. Single piece moulded without any joints Concealed metal hinges
4. Mounting screws fitted from inside metal hardware for wire seal adequate space for meter and cut outs.
5. Degree of Protection of enclosure: - IP65

1. Supply of SMC/FRP 3 Ph Metering panel

This specification covers the technical requirements for **supply of Sheet Moulding Compound (SMC) /Fibre-reinforced Plastic (FRP) 3Ph Metering panel** to be installed at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of this responsibility.

2. Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

Supply of SMC meter box suitable to fix single phase energy meter inside the box with the dimension of 505H x 285W x 155D in mm. Fire retardant class FV-0 as per IS 11731 part-II. Make: Sintex, Medha, EPP

3. General Technical Requirements

This specification covers size & manufacturing of copper bus bars suitable for electrical panels.

Supply of SMC meter box with inside dimensions in mm 505H x 285W x 155D in mm and thickness of 3mm for LT three phase KWH meter of Specification:-

1. Light weight, 100% weather proof, shock proof and maintenance free.
2. Inside the box provision of din type channel for 32A MCB fixing and also cable gland available for incoming and outgoing cables at bottom of box.
3. Single piece moulded without any joints Concealed metal hinges
4. Mounting screws fitted from inside metal hardware for wire seal adequate space for meter and cut outs.
5. Degree of Protection of enclosure: - IP65

1. Supply of Tinned Copper Bus bars

This specification covers the technical requirements for **supply of Tinned Copper Bus bars** for panels to be installed at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2. Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 1387: 1993 (General requirements for the supply of metallurgical Materials)

IS 440: 1964 (Methods of chemical analysis of Copper)

IS 3635: 1966 (Methods of Test for Resistance of Metallic Electrical Resistance Material)

ASTM 187 M (Standard Specification for Copper, Bus Bar)

3. General Technical Requirements

This specification covers design & manufacturing of copper bus bars suitable for electrical panels.

- The bus bars supplied shall be of electrolytic grade copper.
- The copper bus bars shall be tinned with a thickness not less than 5 microns.
- PVC coloured sleeves of 2mm thick having high insulation properties shall be provided on the bus bar.
- Suitable size insulators shall be provided with the bus bar

1.0 Supply of Test Terminal Block

This specification covers the technical requirements for **supply of Test Terminal Block**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2.0 Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

IEC 60947-7-1 (Low Voltage Switchgear and Control gear: Terminal Blocks)

3.0 General Requirements

- Test Terminal Blocks (TTB) provides a convenient means of connecting individual electrical wires without a splice or physically joining the ends. They are usually used to connect wiring among various items of equipment within an enclosure or to make connections among individually enclosed items. Since terminal blocks are readily available for a wide range of wire sizes and terminal quantity, they are one of the most flexible types of electrical connector available.

- The test block and the cover are made of black Bakelite moulding. The moulded barriers are provided in base between adjacent terminals to give complete protection against flash over. The cover is secured in place by knurled sealing nuts. All terminals, shorting links, screws are of brass and nickel plated to prevent corrosion.

Rated voltage : 1100 V max.

Rated current : 50 A max.

Diameter for Entries : 5mm.

TTB should be 3-Phase, 4-wire link type front connection.

- The basic terminal arrangement consists of three voltage terminals and a neutral terminal together with 3 sets of current terminals. The voltage in neutral terminals and movable links which allow the meter or relay to disconnect from their normal supply voltage. The links are connected to the terminals by means of screws and knobs. When several meters are tested their current circuits should be connected in series. If meter are to be tested individually, separate test terminal blocks are required for each meter.
- Two holes of 5mm diameter on opposite sides of the base are provided for panel fixing.

4.0 Technical Requirements

The TTB shall conform to the following:

- TTB should be 3-Phase, 4-wire link type front connection.
- Rated Voltage should be 1100V & rated current of 50A Max.
- Provision for Wire entry of 5mm
- Maximum temperature rise of 45K is acceptable.

Following test to be performed as per IEC Standard.

- Dielectric test
- Short-time current withstand test
- Voltage drop test
- Tension test (pull-out)
- Temperature rise test
- Thermal cycling test.

Such tests determine whether the terminals concerned meet certain requirements, including connection integrity, the distance between two poles within a terminal block (no flashover or breakdown must occur), the strength of the insulating materials, the conductor not pulling out of the terminal unit, the clamping unit breaking while undergoing certain forces, and others.

1. Supply of Modular Distribution Block (PDB Terminal Connector)

This specification covers the technical requirements for **supply of Modular Distribution Block (PDB Terminal Connector)**, for installation at Mumbai Distribution LA sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the VENDOR of his responsibility.

2. Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:

- | | |
|----------------------------|---|
| IS 13947-1-1993 / | |
| a) IEC 60947-7-1-1988 | : Specification for LV Switchgear & Control gear - General Rules |
| IS 8623 (Pt.2)- | |
| b) 1993 / IEC 60439/2-1987 | : Specification L.V. switchgear & control gear assemblies – Particular requirements for bus bar trucking systems (bus ways) |
| c) IEC 60664 | : Insulation co-ordination within low voltage systems including clearances & creepage distances for equipment |
| d) IEC 61140 | : Installations through door of Class-II Switchboards / Enclosures |

3. General Requirements

- Power distribution Blocks hereby refereed as PDBs as mentioned in the specification below. The PDBs shall be complete with all accessories for efficient and trouble-free operation. PDB for board wiring as an alternative to our existing practice of using SFU panels with extended busbar. It offers lesser board wiring space along with facility of distributed group board wiring along with it also adds to additional safety. PDB should have different combinations of outgoing connections with respect to current capacity & size of different wires.
- **Modular Terminal Connector (PDB):** The PDB range of distribution blocks is an ideal choice for a simplified distribution system. A bolt in the center of the block provides a connection point for the incoming cable. All the terminals are internally connected and provide multiple connection points for the outgoing wires. A Protective shield effectively shrouds the incoming connection. This Terminal Blocks are available in Red, Yellow, Blue, Black & Green colors.

4. Technical Requirements

S no.	DESCRIPTION	REQUIREMENT				
1	Type of PDB	Fixed type. Single input, multiple output				
2	No of outputs	Minimum 03 Outputs	Min 10 Outputs	Min 10 Outputs	Min 08 Outputs	Min 08 Outputs
3	Rating Minimum (A)	500 A	250A	160A	100A	50A
4	Rated Cross Section cables	Upto IC-120 sq.mm, OG Upto - 120 sq.mm	Upto IC - 120 sq.mm, OG Upto - 4 to 35 sq.mm	Upto IC-70 sq.mm, OG Upto - 4 to 16 sq.mm	Upto IC-50 sq.mm, OG Upto - 4 to 16 sq.mm	Upto IC-25 sq.mm OG Upto - 2.5 to 4 sq.mm
5	Rated Voltage	433V	433V	433V	433V	433V
6	Type of connection	Nut or screw for I/C and screw ring lug for O/G	Nut or screw for I/C and screw ring lug for O/G	Nut or screw for I/C and screw ring lug for O/G	Nut or screw for I/C and screw ring lug for O/G	Nut or screw for I/C and screw ring lug for O/G
8	Insulation Material	Polyamide 66 or better				
9	Rated Insulation Voltage	690 V				
10	Power Frequency voltage withstand	2 kV				
11	Rated Impulse withstand voltage	8 kV				
12	Material of Busbar	Copper Tin Coated				
14	Short time current withstand	50kA				
15	MOUNTING DIN-RAIL	TS35/7.5, TS35/15, TS32				
16	Degree of Protection of enclosure	IP 54				

1. Supply of Acrylic Sheets

This specification covers the technical requirements for **supply of Acrylic Sheets** for installations at **Mumbai** Distribution **LA** sites of **Tata Power Company Ltd. at Mumbai**. Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility.

2. Applicable Standards:

The material and services specified in this section shall conform to the latest edition of the Following IS / IEC standards:
IS 7569/1987

3. General Technical Requirements

- The Acrylic sheet should confirm to applicable IS standard
- Supply of Acrylic sheet up to 8 MM Thickness
- Insulation Resistance after immersion in water for 24 Hrs. at 20 Deg Celsius- Above 100Mohms
- Dielectric strength (1mm specimen thickness) 30Kv/mm
- Appearance Optically clear
- Tensile Strength - 850 kg/cm².
- Specific Gravity- 1.38
- Max operating Temp 65-93 degree centigrade
- Water absorption shall not more than 0.4 % of the dry weight of the sample after immersion for 24hrs

1.0 Supply of Fibre Cement Board

This specification covers the technical requirements for **supply of Fibre Cement Board**, for installation at Mumbai Distribution sites of **Tata Power Company Ltd. at Mumbai**.

Nothing in this specification shall be construed to relieve the **VENDOR** of this responsibility. Consists of cementitious core re-enforced with cellulose fibre, Fibre Cement Boards have high weather-resistant properties and are extensively used on the exteriors. They are termite resistant. The Boards are **very good insulators of sound and heat**.

2.0 Applicable Standards:

The material Non asbestos -Fibre cement sheet 18mm thick with water repellent coating as per IS in this section shall conform to the latest edition of the Following IS / IEC standards:

IS: 14862, ASTM C 518, ASTM C 518 , ISO 8336.

3.0 General Technical Requirements

- Material Fibre Cement Board.
- Compressive Strength 2.6 N/mm².
- Moisture Content (EMC) - 6-8 %.
- Water Permeability - No Drops after 24 Hrs.
- Fire Resistance - No Ignition.
- Density Greater than 1200 Kg/m³.
- Edge Profile Square, Beveled.
- Surface Finish Smooth.
- Weight 8.91 kg/m² for 6 mm.
- Optical Density of Smoke - Less than 5.
- Screw holding strength normal to face: above 250kg.
- Nail holding strength normal to face: above 60kgs.
- Swelling in cold water at room temperature: Approx. 1%.
- Tensile strength Above: 600 kg/sq.cm.
- Standard Thickness: 18mm.

1. Supply of Heat Shrink Cable End Cap

This specification covers the technical requirements for supply of Heat Shrinkable End cap, for installation at Mumbai Distribution sites of Tata Power Company Ltd. at Mumbai.

Nothing in this specification shall be construed to relieve the VENDOR of his responsibility. Wherever power cables are transported or installed this method is used to reduce risks of moisture and contamination. Cable End Caps shrink when heated to tightly fit a range of cable sizes and constructions. At the same time a special adhesive also melts and flows under the shrinking action, gripping the cable and ensuring a high-integrity moisture seal.

Black heat-shrinkable End Cap made of adhesive-lined polyolefin. This Raychem end cap is used to seal the ends of plastic, rubber and paper insulated cables from moisture, dirt and corrosion. They can be used on cables up to 0.05MPa internal pressure.

Cable caps are coated with an inner wall or hot melt sealant exhibiting excellent bonding and sealing characteristics to all materials commonly used in the cable insulation and sheath construction including plastic rubber, lead and aluminum.

2. Applicable Standards:

The material black heat-shrinkable End Cap made of adhesive-lined polyolefin with water repellent coating in this section shall conform to the latest edition of the Following IS / IEC standards:

IS 13573 (Part 1): 2011 CABLE ACCESSORIES FOR EXTRUDED POWER CABLES

IS 1255 (1983), IEC 93, IEC 216 , IEC 243

3. General Technical Requirements

- Material Make : Raychem /3M
- Shrink Tubing / Boot Colour: Black
- Shrink Tubing / Boot Material: PO (Polyolefin)
- Shrink Ratio: 2:1
- Density : 1.05 g/cm³
- Tensile strength 10 N/sqmm
- Ultimate elongation 300 %
- Water absorption 0.15%
- Resistant to common fluids and chemicals
- Rugged installation
- Seals and protects cable ends (waterproof)
- Operating Temp range -30 Deg C to 135 Deg C.
- Dielectric Strength 10 KV /mm

1. Supply of 1C CU Cable (25 sqmm to 120 Sqmm)

This specification covers the technical requirements for supply of single core Cu Cable, for installation at Mumbai Distribution sites of Tata Power Company Ltd. at Mumbai.

Nothing in this specification shall be construed to relieve the VENDOR of his responsibility. Wherever power cables are transported or installed this method is used to reduce risks of moisture and contamination. No Joint shall be made on any conductor after it is stranded. Before stranding the conductor shall be circular in cross section, uniform in quality, solid, smooth & free from scale, sharp edges and other defects for 1c compacted circular as per IS 8130: 1984. Colour strips or coloured insulation shall be applied on core for identification on cores. Red, Yellow, Blue strip shall be used to identify different phase conductors and Black strip shall be used to identify the Neutral conductor.

2. Applicable Standards:

Cable shall conform to the latest edition of the Following IS / IEC standards:

IS 7098 (Part 1) : 1981, IS 8130: 1984, IS 5831 : 1984, IS 10418 : 1982

IEC 60228 /3-2004, IEC 60502/1-2004.

3. General Technical Requirements

- Material Make : Polycab / Finolex / Havells
- Type of Cable : Un armored PVC FLEXIBLE, FRLSH PVC outer sheathed
- Core: Single
- Conductor : Copper
- Insulation : Highgrade extruded PVC
- Outer sheath : Extruded FRLSH PVC compound type ST2 as per IS 5831:1984
- Conductor grade :H4
- Short Circuit Capacity for 1 sec : 26.46 KA

12. ANNEXURE V

Contractor's Performance Evaluation & Penalties

ANNEXURE : V

Contractor's Performance Evaluation & Penalties

Sr no	Marks	Attributes	Marks allotted (A)	Weightage (B)	Net marks (A * B)
1		Quality of execution		50%	
a	10	Housekeeping at site-during the job		0.5	
b	30	Quality of work execution as per specifications		0.5	
c	10	Site management by competent supervisor		0.5	
d	10	Re-work/Damages due to bad workmanship		0.5	
e	15	Adhering to time schedule		0.5	
f	15	Quality of material used		0.5	
g	10	Skill of manpower		0.5	
2		Mobilization		20%	
a	50	Deployment of sufficient Manpower and equipment at site		0.2	
b	50	Speed of Mobilization at site with safety as first priority		0.2	
3		Project administration		30%	
a	20	Timely submission of bill (within 7 days of work completion)		0.3	
b	20	Completeness & correctness of bills		0.3	
c	20	Safety Record Keeping & on the job training of manpower		0.3	
d	40	Statutory compliance		0.3	
				Total marks out of 100	
		Payment would be made to the contractor as per the following criteria :			
		Marks scored out of 100 for the job being paid	Financial Penalty as % of bill amount		
		90 to 100 marks	NIL		
		85 to 89 marks	0.5%		
		80 to 84 marks	1%		
		70 to 79 marks	1.50%		
		60 to 69 marks	2%		
		Less Than 60	5 % & appropriate action will be taken as decided by Management		

AGREED TERMS & CONDITIONS (ATC)- Indigenous Service

Bidder's Name: M/s. _____

RFQ ref. No. CC26VJS006

Enquiry Description: OLA of 2 years for Electrical supply & services activities at Consumer Sub-Stations & LT Metering jobs

Bidder's Offer Ref.: <pls mention your offer reference no here>

1. SUBMISSION OF THIS DOCUMENT DULY SIGNED, SHALL CONSTRUE THAT ALL THE CLAUSES OF AGREED TERMS AND CONDITIONS HAVE BEEN ACCEPTED BY YOU. PURCHASE ORDER, IF ANY, SHALL BE GOVERNED BY THE CONFIRMATION PROVIDED HERE.

S. No.	Description	BIDDER'S RESPONSE
A	<u>TECHNICAL</u>	
1	Acceptance of technical specifications / scope of work including General/Technical notes as per Tender specification In case of deviation, confirm that the same has been furnished separately.	
2	Confirm data sheets duly filled in have been submitted, wherever required as requested in Technical specification/ Scope of work	
B	<u>COMMERCIAL</u>	
3	Bid Validity Confirm Bid Validity 180 days from date of bid submission.	
4	Firm price: Quoted prices shall remain firm till order execution.	
5	Delivery Terms Confirm delivery terms DAP (FOR) basis for any spares/consumables	NA
6	Packing & Forwarding Confirm that Packing & Forwarding charges including Special Packaging Requirement (if applicable) are included in base price	NA
7	Conveyance Charges Confirm that Conveyance charges of personnel are included in base price	
8	Taxes and duties: GST: __% HSN/ SAC Code: Any other tax as applicable:	
9	SLA: Confirm that Bidder agrees to the SLA clause as specified in Job scope	
10	Delivery Period: Mention the delivery timelines from the date of order	2 years Rate Contract
11	Payment Terms Acceptance: Confirm acceptance to the Payment terms as specified in GCC Service.	
12	Warranty / Latent Defect Liability Period: Confirm that Bidder agrees to the clause as specified in Technical specs	
13	Contract Performance Bank Guarantee: Confirm acceptance to Submission of Unconditional Bank Guarantee as per GCC Service.	

S. No.	Description	BIDDER'S RESPONSE
14	Testing and Inspection charges (if applicable): Confirm the quoted are Inclusive of all testing and inspection charges as per Tender specification	
15	Compliance to other terms & conditions Acceptance of all other terms & conditions as forming the Part of the RFQ/ Tender document and communicated vide subsequent addendum(s) if any: In case of deviation, confirm that the same has been furnished separately.	

*Bidders / Vendor shall note that in case of any contradiction between the Agreed Terms and Conditions (ATC); and the Bidders offer, the ATC shall prevail.

Bidder's Authorised Signatory and stamp:

Name:

The Tata Power Company Limited is hereunder referred to as the "Owner" or "Company". The person, firm or company offering the services, the subject of this order is referred to as "Contractor". The subject of this order is hereinafter referred to as the "Work".

"Sub-Contractor" means any person named in the Contract as a Sub-contractor, sub-vendor, manufacturer or supplier for a part of the Works or any person to whom a part of the Works has been subcontracted and the legal successors in title to such Person, but not any assignee of such Person.

The Contract shall mean the contract as derived from the following:

1. Work Order (with 'Commercial Notes' and Annexures to the Work Order referred thereon)
2. Scope of Work.
3. General Terms & Conditions - Service

The documents including all reference document (s) and Annexures forming the Contract are to be read together as a whole and are to be taken as mutually explanatory, provided however, in the event of any inconsistency or discrepancy between the aforementioned documents, the order of precedence in interpretation of the documents shall be as set out above. For the avoidance of doubt, it is clarified that the terms set forth in the Work Order (with 'Commercial Notes' and Annexures to the Work Order referred thereon) shall take precedence over the terms set out in the Scope of Work, which shall in turn take precedence of the terms set out in the General Terms & Conditions – Service.

1. Contractor's obligation:

- 1.1 Contractor warrants that it is a competent, qualified and experienced contractor, equipped, organised and financed to perform and complete the services in the operating area in an efficient and professional manner and capable of meeting all the requirements of the Contract.
- 1.2 The Contractor has the overall responsibility of executing the contract, conducting Planning, Job Scheduling, Maintenance Planning, Maintenance Job Scheduling, executing the Work and maintenance jobs as per the Scope of work & schedule.
- 1.3 Except to the extent that it may be legally or physically impossible or create a hazard to safety, the Contractor shall comply with the Owner's representative(s) instructions and directions on all matters relating to the Work.
- 1.4 Contractor shall at all times have full responsibility for control of the Equipment and for the direction and supervision of operations being carried out under the Contract.
- 1.5 In the performance of the Work, Contractor shall be and act as an independent Contractor fully responsible and accountable for the proper execution of its responsibilities, obligations and

liabilities under this Contract and for its own acts and the acts of its Sub-Contractors and the Personnel. Owner's supervision, examination or inspection of the (performance of the) Work or omission to carry out the same shall not be construed in any manner whatsoever as relieving Contractor from its responsibilities, obligations or liabilities under this Contract.

- 1.6 Contractor shall submit list of tools & tackles with details of make, year of manufacturing, valid certification to the Project Manager/ User for their approval.

Project Manager may during the execution of project inspect & verify that the tools & tackles are as per the qualification requirements approved by him and will have right to seek replacements in case of any discrepancies. The Contractor shall always comply with such directives.

- 1.7 Contractor shall engage Tata Power Skill Development Institute (TPSDI) certified labour force at the site for execution of the job. Requirement & fees for TPSDI certification shall be as per Company Policy.
- 1.8 Contractor shall take full responsibility for the protection and security of Owner's materials and equipment while such materials and equipment are temporarily stored in Contractor's facility or otherwise in Contractor's custody.
- 1.9 All notices, instructions, information, and other communications given by the Contractor to Owner under the Contract shall be given to the Order Manager/ Owner's representative, except as otherwise provided for in this Contract.
- 1.10 The Contractor shall make its own arrangements for movement of personnel and equipment, within and outside the sites / units / offices at the various locations covered by the Contract.
- 1.11 The Contractor shall acquire in its name all permits, approvals, and/or licenses from all local, state, or national government and other statutory authorities and/or public service undertakings that are necessary for the performance of the Contract.
- 1.12 Neither the Contractor nor its personnel shall during the term of this Contract, engage in any business or professional activities in India/abroad which would conflict with the activities assigned to them under this Contract.

2. Service Warranties:

Contractor warrants that all services performed for or on behalf of Owner will be performed in a competent,

workmanlike manner and shall be free from faults and defects. Said warranties shall be in addition to any warranties of additional scope given by Contractor to Owner. None of said warranties and no other implied or express warranties shall be deemed is claimed or excluded unless evidenced by a change notice or revision issued and signed by Owner's authorized representative.

3. Compliance of Local Laws:

Contractor shall be responsible and shall comply with the provision of all the Statutory Acts Applicable. Special attention of the Contractor is drawn towards the compliance of provision of the following statutes: (along with the latest amendments/additions, as applicable):

- a) The Child Labour (Prohibition and Regulation) ACT, 1986.
- b) The Contract Labour (Regulation and Abolition) ACT, 1970.
- c) The Employee's Pension Scheme, 1995.
- d) The Employee's Provident Funds and miscellaneous provisions Act, 1952.
- e) The Employees State Insurance Act, 1948.
- f) The Equal Remuneration Act, 1976.
- g) The Industrial Disputes Act, 1947.
- h) The Maternity Benefit Act, 1961.
- i) The Minimum Wages Act, 1948.
- j) The Payment of Bonus Act, 1965
- k) The Payment of Gratuity Act, 1972.
- l) The Payment of Wages Act, 1936.
- m) The Shops & Establishment Act, 1954.
- n) The Workmen's Compensation Act, 1923.
- o) The Employer's Liability Act, 1938.
- p) and any other applicable statutory act

Site Specific requirements shall be as Annexure at I. The compliance to these Site Specific requirements shall not absolve the Contractor of its obligation to comply with the Owner's Contractor Safety Management Policy.

4. Owner's Obligation:

- 4.1 The order manager (As specified in the 'Commercial Notes') shall have the authority to represent Owner on all day-to-day matters relating to the Contract or arising from the Contract. All notices, instructions, orders, certificates, approvals, and all other communications under the Contract shall be given by the order manager, except as otherwise provided for in this Contract. The order manager may appoint the Engineer-In-Charges for different areas for monitoring the work progress, inspections and signing of bills.

- 4.2 Owner shall ensure the availability of site access, all information and/or data to be arranged/ supplied by Owner to the Contractor for execution of the Work. The terms on which the Contractor shall be allowed access to the site shall be specified by the Owner prior to commencement of the execution of the Work and thereafter shall be governed in accordance with such policies as the Owner may provide in writing to the Contractor from time to time.

5. Contractor's/ Sub-contractor's employees:

- 5.1 The Contractor shall engage appropriately qualified persons to provide the services with the prior approval of Owner. Owner may withhold such approval for any reason whatsoever.
- 5.2 The Contractor hereby represents and warrants that:
 - i) the personnel are duly qualified, and are, and will remain, sufficiently qualified, careful, skilful, diligent and efficient to provide the services to Owner; and
 - ii) the Services will be rendered carefully, skilfully, diligently and efficiently, and to the professional standard reasonably expected by Owner of a contractor qualified and experienced in providing services substantially the same as the Services.
- 5.3 The Contractor must ensure that the Contractor's personnel conduct themselves in a proper manner and comply with the procedures and all policies, regulations and directives of Owner including any occupational, health and safety policies and the relevant prevailing laws and regulations in the Country of operations and specifically in the area where Work is being executed.
- 5.4 Owner may inform the Contractor to immediately remove Contractor's personnel from the relevant premises in the event of misconduct or incompetence on the part of the Personnel. The Contractor shall at all times remain liable for all acts and/or omissions of its Personnel.
- 5.5 It is made clear that no relationship of Owner and employee is created between Owner and the Contractor's resident engineers, employees and no claim for employment of any such personnel shall be tenable or entertained.

6. Title of Property:

- 6.1 Unless otherwise provided in this order or agreed to in writing, property of every description including but not limited to all tooling, tools, equipment and material furnished or made available to Contractor, title to which is

in Owner, and any replacement thereof shall be and remain the property of Owner. Such property other than material shall not be modified without the written consent of Owner. Such property shall be plainly marked or otherwise adequately identified by Contractor as being owned by Owner and shall be safely stored separately and apart from Contractor's property.

- 6.2 Contractor shall not use such property except for performance of work hereunder or as authorized in writing by Owner. Such property while in Contractor's possession or control shall be listed in writing and kept in good condition, shall be held at Contractor's risk, and shall be kept insured by Contractor, at its expense, in an amount equal to the replacement cost with loss payable to Owner. To the extent such property is not material consumed in the performance of this order, it shall be subject to inspection and removal by Owner and Owner shall have the right of entry for such purposes without any additional liability whatsoever to Contractor. As and when directed by Owner, Contractor shall disclose the location of such property, prepare it for shipment and ship it to Owner in as good condition as originally received by Contractor, reasonable wear and tear excepted.

7. Work Completion schedule:

Contractor shall plan and execute the Work in accordance with a detailed schedule mutually agreed upon by the Parties (Owner and Contractor).

8. Contract Price and Payment:

- 8.1 The Contract Price shall be a firm & fixed Contract Value for the Work inclusive of all the taxes, levies & duties and shall remain firm till the validity of this contract.
- 8.2 Unless Specifically stated elsewhere in the contract, the Contractor is solely liable for payment of , and warrants that it will pay, or ensure the payment of all taxes imposed, assessment made in relation to the Work.
- 8.3 An amount as stated in the table below shall be retained towards Contractor's safety performance against every RA bill:

Contract Value	Retention Amount (%)
Upto Rs. 10 lakhs	2.5
Above Rs. 10 lakhs and below Rs. 50 lakhs	2
Above 50 lakhs and upto Rs. 10 Crores	1.5
Above Rs. 10 Crores	1

The above mentioned safety retention shall be over and above any other retentions/ deferred payments as may have been specifically agreed in the Contract.

- 8.4 For Contract Price Rs. 1 crores or above and Contract Completion Schedule 12 months or more, the above safety retention will be released half yearly against the Safety Performance Score (methodology for evaluation enumerated in the Safety Terms & Conditions attached as Appendix to this General Terms & Condition) which will be evaluated by the Order Manager every month. For all other contracts, the above said safety retention shall be released along with the final settlement only at the end of the contract period.
- 8.5 The Owner shall have the right to stop any work which in its opinion is not meeting the safety standards/ guidelines of the Owner and good engineering practice. The Contractor shall not be eligible for and shall not be granted any extension in Completion Schedule due to such stoppage of work by the Owner.
- 8.6 The above retention towards safety shall not absolve the Contractor of its liabilities including statutory liabilities towards safety violations, injury or death (whether by accident or otherwise). An amount between Rs. 5 to 50 lakhs as deemed appropriate by Owner's appointed Committee for incident investigation and/ or as determined by statutory authorities (whichever higher), will be payable by the Contractor in case of such severe incidents of injury leading to loss of property or partial/ permanent disablement (e.g. loss of limb/s, vision etc.) or death.
- 8.7 Notwithstanding anything else stated in the Contract, the Contractor shall be liable for termination without any notice and without recourse to Owner in case of three (3) or more severe safety violations. There shall be no termination fees/ compensation payable to Contractor for such termination.
- 8.8 In case the Contractor achieves 100% on the Safety Performance Score, the Contractor shall be awarded a discretionary bonus of 1% of invoiced value subject to a maximum of Rs. 50 lakhs towards Safety Performance.
- 8.9 Payment shall be released within 60 days of submission of error free invoice with supporting documents duly certified by the Order Manager/ Engineer-in-Charge after deducting taxes at source as prescribed under the applicable law, income – tax or other deductions under the state value added tax laws . If such payment release

day falls on a holiday of Owner, payment will be released on the next working day. Against deduction of statutory taxes, tax deduction certificates where ever applicable shall be issued as per the applicable provisions of the statute. The Order Manager may recover any amount wrongly paid in excess in any previous bills certified by him.

- 8.10 *Mode of Payment:* All payments shall be made direct to the Contractor or his authorized representative in the shape of RTGS or Electronics Transfer method, on certification of the Order Manager/Engineer-in-Charge and on compliance of contractual terms & conditions.

9. **Taxes and Duties:**

- 9.1 The Contract Price shall be inclusive of all taxes, duties, including but not limited to Customs duty, GST or any local taxes, levies imposed by State/Central/Local governments.

- 9.2 Taxes as mentioned in the Contract Price or Price Schedule shall be paid to the contractor subject to the Contractor complying with all the statutory requirements and furnishing the relevant documents including error free invoices containing detailed break up of the taxes.

- 9.3 The tax invoices should contain the details to comply with the GST Law. The supplier shall:

- i) Furnish (electronically) and communicate to the Owner, the details of Goods or Services supplied by the 10th of the month succeeding the said tax period,
- ii) Upon discovery of any discrepancy, rectify it and shall pay the tax and interest thereof,
- iii) Furnish the returns (electronically), for the inward and outward supplies of Goods and/or Services, before the specified dates as per the GST Law,
- iv) Communicate the tax paid, credits etc. as and when credited.
- v) The Invoice should clearly state the description of the goods, quantity, sale price, tax %, and tax amount;
- vi) The Invoice should be signed by an Authorized Signatory.

Bills/Invoices in the name of The Tata Power Company Ltd. with packing lists in triplicate shall be forwarded along with the equipment.

Contractor to furnish GST Registration no. in all invoices as well as Purchaser's (Tata Power's) GST no.

- 9.4 However the payment of tax shall be restricted to the total amount as indicated in the price schedule.

- 9.5 Any statutory variation in duties, levies or taxes if applicable and specified in this Contract till the scheduled date for completion of Work and limited to direct invoices of the Contractor shall be to the account of Owner. The Contractor shall have the obligation to provide the necessary documentary evidence / supporting by way of gazetted notifications etc. to prove the change in such levies or taxes between the due date of submission of the Bid and the scheduled date of completion of work to claim the difference.

- 9.6 The Contractor shall pass on to the Owner all the benefits of either reduction in tax rates, exemptions, concessions, rebate, set off, credits etc. or introduction of new tax rates exemptions, concessions, rebate, set off, credits etc. pertaining to all taxes, duties, imposts, fees and levies in respect of the supplies of Goods or performance of obligations under the contract. This would specifically include reduction of tax rates as a result of statutory changes or judicial rulings.

- 9.7 Any other taxes, levies and duties not mentioned in Contract Price or Price Schedule but applicable as per any statute (s) or introduction (omission) of new taxes, levies and duties shall be deemed to be included in the Contract Price and shall be to the account of the Contractor.

- 9.8 For facilitating availment of a credit, set-off, rebate, drawback or like benefit available to the Owner, the Contractor will facilitate the Owner by providing the necessary documentary and/or procedural support. In any process of assessment or re-assessment, of taxes payable by the Owner,

- 9.9 The Contractor shall bear and pay all the costs, liabilities, levies, interest, penalties in respect of non-compliances of any legal requirements as per various statutory provisions. The contractor shall keep the owner indemnified at all times from any tax liability, interest, penalties or assessments that may be imposed by the statutory authorities for non-compliances or non-observation of any statutory requirements by the Contractor.

- 9.10 All formalities required under statutes, for availing any concessions under relevant tax laws shall be adhered to by the Contractor.

- 9.11 Deduction at source: Recovery at source towards income tax calculated at the rate prescribed from time to time under the Income Tax Act 1961 and other relevant sections of Income Tax Act shall be made from the bills of the Contractor and the amount so recovered shall be

deposited with the Income Tax Department. Necessary TDS certificate to this effect will be issued to the Contractor in the prescribed proforma.

- 9.12 If any other taxes / duties / cess etc are to be recovered at source as per government regulations / Legislation from time to time, the same shall be recovered from the bills payable to the Contractor. Necessary receipt to this effect will be issued to the Contractor in this regard as per the applicable legislation.

10. Contract Performance Guarantees (If applicable)

The Contractor shall within 15 days of issuance of this Order/Contract furnish an unconditional irrevocable bank guarantee duly stamped, strictly as per the prescribed format of Owner from any nationalized bank or any scheduled bank having a branch in Mumbai and approved by the Owner for a sum equivalent to 10% of the Total Contract Price valid for the Contract Period and with a claim period of not less than 6 months from the completion of Contract Period. The issuing bank should be advised to send a direct confirmation of issue of bank guarantee to Owner.

In case the Contractor fails to furnish the requisite Bank Guarantee as stipulated above, then the Owner shall have the option to cancel the Contract besides other contractual remedies.

11. Price Reduction:

- 11.1 In case the Contractor fails to deliver the service/ Complete the work as per the agreed Completion Schedule including intermediate milestones (if applicable), the Owner shall recover from Contractor, as ascertained and agreed Liquidated Damages, and not by way of penalty, a sum equivalent to 1% of the Contract Value per week of delay. The Liquidated Damages referred above may be recovered by the Owner as set off against any amounts payable by the Owner to the Contractor or in any other manner in accordance with applicable laws.
- 11.2 The overall cap on liquidated damages shall be limited to 10% of the Contract Price.

12. Insurance

- 12.1 The Contractor agrees to indemnify and protect Owner against all liability, claims or demands for injuries or damages to any person or property growing out of the performance of this order/ Contract.
- 12.2 The Contractor further agrees to furnish evidence of insurance showing that Contractor has and will maintain adequate insurance coverage during the life of this Contract/ order in the opinion of Owner, including but not

limited to comprehensive general liability insurance. Such evidence of insurance must set forth the name of the insurer, policy number, expiration date, and limits of liability. Compliance by Contractor with insurance requirements does not in any way affect Contractor's indemnification of Owner under Indemnification clause

13. Indemnification:

The Contractor shall indemnify, save harmless and defend the Owner and keep the Owner indemnified from and against any and all claims, costs, liabilities (financial), litigations, compensations, judgments, expenses or damages (including attorney's fees and other related expenses) arising out of any breach or alleged breach of any of the conditions of this Contract including compliance to statutory laws of provisioned under clause 3, performance of the obligations hereunder, or any representation or misrepresentation made by the Contractor or by any third party in respect of death or bodily injury or in respect to loss or damage to any property with regard to the subject of this Contract.

14. Indemnity against IPR:

The equipment, system, drawings, and other materials that shall be supplied against the Contract will become the Owner's property. Without limitation of any liability of whatsoever nature, the Owner shall be indemnified and kept indemnified against any claim for infringement or breach of any of the statutes, rules & regulations by the use of or sale of any article or material supplied by the Contractor. The indemnity shall include any infringement of patent, trade mark, design, copyright or other property rights whether in Country of Origin, or elsewhere resulting from the Contractor's design, manufacture, use, supply or re-supply & would also cover use or sale of any article or material supplied by the Contractor to the Owner under the Contract. The Indemnity shall cover any claim/action taken by a third party either directly against the Owner or any claim/action made against the Contractor & where under the Purchaser is made liable. The Indemnity shall be for losses, damages, and costs including litigation costs, attorney fees etc incurred by the Owner in relation to the Contract.

15. Free Issue Material:

Wherever contracts envisage supply of Free Issue Material (FIM) by the Owner to the contractor for fabrication/ use in service performance, such Free Issue Material shall be safeguarded by an insurance policy to be provided by the Contractor at his own cost for the full value of such materials and the insurance policy shall cover the following risks specifically and shall be valid for six months beyond the Contract Validity date :

RISKS TO BE COVERED: Any loss or damage to the Owner's materials due to fire, theft, riot, burglary,

strike, civil commotion, terrorist act, natural calamities etc. and any loss or damage arising out of any other causes such as other materials falling on Owner's materials.

The amount for which insurance policy is to be furnished shall be indicated in the respective Contract.

Free Issue material (FIM) will be issued to the Contractor only after receipt of the Insurance Policy from the Contractor. The contractor shall arrange collection of the FIM from the Owner's premises and safe transportation of the same to his premises at his risk and cost. Notwithstanding the insurance cover taken out by the Contractor as above, the Contractor shall indemnify the Owner and keep the Owner indemnified to the extent of the value of free issue materials to be issued till such time the entire contract is executed and proper account for the free issue materials is rendered and the left over/surplus and scrap items are returned to the Owner. The contractor shall not utilize the Owner's free issue materials for any job other than the one contracted out in this case and also not indulge in any act, commission or negligence which will cause/result in any loss/damage to the Owner and in which case, the Contractor shall be liable to the Owner to pay compensation to the full extent of damage/loss. The Contractor, shall be responsible for the safety of the free issue materials after these are received by them and all through the period during which the materials remain in their possession/control/custody. The Free issue materials on receipt at the Contractor's works shall be inspected by them for ensuring safe and correct receipt of the material. The contractor shall report the discrepancies, if any, to the Owner within 5 days from the date of receipt of the material. The contractor shall take all necessary precautions against any loss, deterioration, damage or destruction of the FIMs from whatever cause arising while the said materials remain in their possession/custody or control. The free issue materials shall be inspected periodically at regular intervals by the Contractor for ensuring safe preservation and storage, the Contractor, shall also not mix up the materials in question with any other goods and shall render true and proper account of the materials actually used and return balance remaining unused material on hand and scrap along with the final product and if it is not possible within a period of one month from the date of delivery of the final product/ completion of Service covered by this Contract. The Contractor shall also indemnify the Owner to compensate the difference in cost between the actual cost of the free issue material lost/damaged and the claim settled to the Owner by the insurance company.

16. Relation between parties:

The Contract shall be entered into on a principal-to-principal basis only. The Contract shall not be construed as a partnership or an association of persons. There is no agent and principal relationship between the parties. Each party shall be responsible for its own conduct. The Contractor shall ensure at all times that all the work carried out under this contract

either by its own person or through any of its sub-Vendors shall be always done under its own direct supervision.

17. Safety:

Contractor shall comply with all legal and statutory provisions including all rules and regulations pertaining to Safety, Health and the Environment and will be responsible for all legal liabilities arising due to any of their acts or of their personnel.

The Contractor shall comply with the Owner's Contractor Safety Policy and Safety Terms and Conditions. Any misconduct and/ or violation with respect to the Owner's Contractor Safety Policy and Safety Terms and Conditions or any other legal and statutory provisions pertaining to Safety, Health and Environment shall be dealt with as per the Safety Terms and Conditions.

Prior to commencement of any work at site Contractor shall submit an undertaking in writing to adhere to and comply with all the provisions of Owner's Contractor Safety Code of Conduct.

The Contractor shall have a valid ISO 14001/ OHSAS certification. In absence of the same, the Contractor shall obtain the same within 6 months from the date of the Effective Date of Contract.

18. Suspension of Work

Owner may instruct Contractor at any time to suspend performance of the Work or any part thereof with a notice of 7 days for whatever reason. Provided Contractor is not in default under this Contract subject to Articles 1 and 5 inclusive, the Contractor shall be paid a mutually agreed fee, if any, necessarily incurred by Contractor as a direct consequence thereof of suspension and the Project Completion Schedule may be revised accordingly.

Without prejudice to any other rights Owner may have under this Contract or at law if Contractor is in default under this Contract, Owner may instruct Contractor to suspend performance of the Work or any part thereof by giving 7 days notice till such default has been corrected to the satisfaction of Owner. Also Liquidated Damages in accordance with Clause 11 shall continue to be applicable during such period until the default is cured. The costs incurred by the Contractor for such correction shall be to the Contractor's account, and furthermore no payment shall become due to the Contractor. Any cost incurred due to non - performance of the Contractor by the Owner shall be charged to the Contractor.

19. Change Management:

Owner shall have the right at any time to order any change in the Work in accordance with the following procedure. Contractor shall furnish to Owner upon request as soon as reasonably possible but no later

than five (5) days following the request, a written statement specifying:

- (a) the increase or decrease, as the case may be, in the costs of the Work which will result from a change in the Work as requested by Owner,
- (b) any effect such change in the Work may have on any other provision of this Contract originating from either parties, and
- (c) such other details as Owner may require.

Any change in costs shall be reasonably related to the proportional change in the Work and any other costs incurred by Contractor. If Owner agrees to Contractor's statement Owner shall notify Contractor thereof in writing in the form of a change order, whereupon the change in the Work shall be incorporated in the Work and immediately implemented. In the event that the change relates to a reduction in Work, the work in question shall not be undertaken pending the issue of an appropriate Change Order.

20. Governing Laws

This Contract shall be construed in accordance with and governed by the Laws of India without giving effect to any principle of conflict of law.

21. Jurisdiction

This Contract and the transaction contemplated herein shall be subject to the exclusive jurisdiction of the competent Courts in Mumbai only.

22. Dispute settlement:

Dispute or differences arising out or relating to this Order shall be resolved amicably by the parties. Failing such amicable resolution of dispute / differences either party may refer the matter to arbitration of a Sole Arbitrator to be appointed jointly by both the parties. The award of the Arbitrator shall be final, binding and conclusive on the parties. The venue for arbitration shall be Mumbai. The Arbitration proceedings will be governed and regulated by the provisions of Indian Arbitration and Conciliation Act, 1996 as amended from time to time and the rules framed there under.

23. Force majeure:

- 23.1 In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by it under this Contract the relative obligation of the party affected by such force majeure shall, after notice under this articles be suspended for the period during which such cause lasts. The term 'Force Majeure' as employed herein shall mean acts of God, wars (declared or undeclared), riots or civil commotion, fire, floods, and acts and regulations of the Government of India or State Government or any of the statutory agencies. Both the party

shall pay to the other party, the amount payable upon the date of the occurrence of such force majeure.

- 23.2 Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid, thereby shall notify the other party in writing immediately but not later than twenty four (24) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of the claims.

- 23.3 During the period, the obligations of the parties are suspended by force majeure; the contractor shall not be entitled to payment of any rate.

- 23.4 In the event of the force majeure conditions continuing or reasonably expected to continue for a period more than thirty (30) days, Owner shall have the option of terminating the contract by giving seven (7) days notice thereof to the contractor.

24. Sub letting and Assignment

The contractor shall not, without prior consent in writing of the Owner, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever, provided nevertheless that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

25. Limitation of Liability:

Notwithstanding anything contained in the Contract, the Contractor's aggregate liability under this Contract shall be limited 100% of the Total Contract value. This shall exclude liability arising pursuant to clause 3- Compliance to Local Laws, clause 9.10, clause 14- Indemnity against IPR, clause 13- Indemnity, clause 26 – Confidentiality, liability arising due to loss of or damage to the Free Issue Material (FIM) issued by Owner to Contractor for completion of the Work and liability arising due to wilful misconduct, gross negligence, third party claims and corrupt acts attributable to the Contractor.

26. Confidentiality:

The Contractor shall use the Confidential Information of the Owner only in furtherance of this Contract and shall not transfer or otherwise disclose the Confidential Information to any third party. The Contractor shall (i) give access to such Confidential Information solely to those employees with a need to have access thereto; and (ii) take the same security precautions to protect against disclosure or unauthorized use of such Confidential Information that the party takes with its own confidential information but, in no event, shall a party apply less than a reasonable standard of care to prevent such disclosure or unauthorized use.

27. Termination:

27.1 The Contract shall be deemed to be terminated on completion of the Contract period.

27.2 Termination of default by Contractor:
Owner may terminate the contract at any time if the Contractor fails to carry out any of his obligations under this Contract. Prior to termination, the Contractor shall be advised in writing of the causes of unsatisfactory performance to be improved upon 15 days of the receipt of notice. In case, if the Contractor fails to bring about the improvement to the satisfaction of the Owner, then the Contract shall be terminated.

27.3 Without prejudice to the rights and remedies available to Owner, Owner may terminate the Contract or part thereof with immediate effect with written notice to the Contractor if:

27.3.1 The Contractor becomes bankrupt or goes into liquidation.

27.3.2 The Contractor makes a general assignment for the benefit of creditors.

27.3.3 A receiver is appointed for any substantial property owned by the Contractor.

27.3.4 The Contractor is in breach of any representation or warranty made to the Owner by the Contractor.

The Contractor shall not be entitled to any further payment under the Contract if the Contract is terminated. If the order is terminated under clause 27.2 and 27.3, the Contractor shall not be entitled to any further payment, except that, if Owner completes the Work and the costs of completion are less than the Contract Price, the Owner shall pay Contractor an amount properly allocable to services fully performed by Contractor prior to termination for which payment was not made to Contractor. In case, the cost of completion of Work exceeds the Contract Price, the additional cost incurred by Owner for such completion shall be paid by the Contractor.

27.4 Owner shall be entitled to terminate the Contract at its convenience, at any time by giving thirty (30) Days prior notice to the Contractor. Such notice of termination shall specify that termination is for Companies convenience and the date upon which such termination becomes effective. Upon receipt of such notice, the Contractor shall proceed as follows:

27.4.1 cease all further work, except for such work as may be necessary and instructed by the Owner/ Owner's representative for the purpose of preserving and protecting Work already in progress and protect

materials, facilities and equipment on the Work Site or in transit;

27.4.2 stop all further sub-contracting or purchasing activity, and terminate Sub-contracts;

27.4.3 handover all Documents, equipment, materials and spares relating to the portion of Work already executed by the Contractor or procured from other sources up to the date of termination for which the Contractor has received payment equivalent to the value thereof; and

27.4.4 handover those parts of the supplies manufactured/ work executed by the Contractor up to the date of termination.

Upon termination pursuant to clause 27.4, the Contractor shall be entitled to be paid (a) all sums properly due to the Contractor under the Contract up to the date of termination; and (b) any direct and substantiated charges already incurred or committed for cancellation of the procurement of third party goods or services which were to have been supplied by the Contractor in connection with this Contract provided that the Contractor shall use its best endeavours to minimise such charges

25.5 The Contractor shall not be released from any of his obligations or liabilities accrued under the Contract on termination. For the avoidance of doubt, the termination of the Contract in accordance with this clause shall neither relieve the Contractor of his accrued obligations for Warranty or his accrued liability to pay (liquidated) damages for Delay nor shall entitle him to reduce the value of Performance Security.

28. Consequential Damages:

Unless otherwise specified, neither Party shall be responsible for and nor shall be liable to the other Party for indirect/consequential losses and damages suffered by such Party including for loss of use, loss of profit whether such liability or claims are based upon any negligence on the part of the other Party or its employees in connection with the performance of the Contract.

29. Environment / ISO 14001 Certification:

The Contractor to confirm whether their organization is ISO 14001 certified. If not, the Contractor must certify that the handling, use and disposal of their product / by-products conform to practices consistent with sound environmental management and local statutes. The Contractor shall ensure that all the wastes are disposed in environmental friendly way with strict compliance to applicable laws including adherence to MoEF guidelines with respect to disposal of batteries, lead waste, copper cables, ash, waste oil, e-waste etc which shall be disposed through MoEF approved

parties only. The Contractor shall also be responsible to collect and recycle all the e-waste generated at the end of the product life cycle at its own costs and risks as per the MoEF guidelines/orders.

30. Non-Exclusive Agreement

This Contract is non-exclusive and Owner reserves the right to engage other contractors to perform similar or identical work. Contractor shall accord such other contractors adequate opportunity to carry out their contracts and shall accomplish the Work in co-operation with those contractors and with Owner, in accordance with such instructions as may be issued by the Owner from time to time.

31. Severability

In the event that any of the provisions, or portions or applications thereof, of this Contract are held to be unenforceable or invalid by any court or arbitration panel of competent jurisdiction, Contractor and Owner shall negotiate an equitable adjustment to the provisions of the Contract with a view towards effecting the purpose of the Contract and the validity and enforceability of the remaining provisions, or portions or applications thereof, shall not be affected thereby.

32. Housekeeping & Removal of scrap:

The Contractor shall be responsible for keeping the areas of his work at site, neat and tidy throughout the period of his work. All excess material/ spares/ consumables taken by Contractor, as well as the scrapped items and wooden logs/ crates/ planks shall be returned, from time to time, to the Stores, and transported/ unloaded by Contractor's personnel at the place shown by Order Manager/Engineer-in charge.

The Contractor shall so arrange that all the scrap generated during the progress of his work, is separated into two categories, viz.

- i) Saleable scrap like steel, copper or other metals, etc., and,
- ii) Others, which have nil or negligible resale value, like insulation material, jute, debris, etc. (or as directed by the Order Manager/Engineer-in charge).

The saleable scrap shall be shifted to and unloaded at a central place as per directions of the Stores-in charge, while the other scraps shall be shifted to other locations as per directions from Order Manager/Engineer-in Charge, or as per terms of the order.

The Contractor shall arrange to remove the scrap on regular basis, or even on daily basis, depending upon the requirement, to keep the area around his workplace neat and tidy. In case, it is observed that the

Contractor is not carrying out regular cleaning of his areas of work, or, is not returning the excess materials/ scrap, etc., to the Stores, Owner reserves the right to arrange the same through other sources, and back-charge the Contractor the cost of doing so, along-with overheads, by deducting the amount from Contractor's bills.

Contractor's final bill will be cleared by Owner only after confirming that proper clearing of his areas of work has been completed by the Contractor, and same is certified by the Order Manager/ Engineer in-charge

33. Tata Code of Conduct

The Owner abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Owner and the Contractor for dealings under this Order/ Contract. A copy of the Tata Code of Conduct is available at our website:

<http://www.tatapower.com/aboutus/code-of-conduct.aspx>.

The Contractor is requested to bring any concerns regarding this to the notice of our Chief Ethics Officer on the e-mail ID: cecounsellor@tatapower.com.

34. Responsible Supply Chain Management:

The Owner is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy. The Contractor is required to comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations. The Owner encourages its Vendors/ Contractors/ Business partners to pay more attention to green design, green supply, green production, green logistics and green packaging in performing their business obligations.

The Contractor is required to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy.

A copy of the Responsible Supply Chain Policy along with Environment policy, Energy Conservation policy, Sustainability policy, Health & Safety policy and Human Rights policy is available at website:

<http://www.tatapower.com/sustainability/policies.aspx>.

Contractor/Bidder is required to completely fill the attached "Supplier Sustainability Questionnaire" in support of their Green Supply Chain Management initiatives and submit the same with their offer.

The Owner recognizes that diversity in the workplace positively impacts business. The Owner is committed to help people from SC/ST background either by helping them to become entrepreneurs or by engaging workforce from SC/ST community under the contracts agreed herein. To encourage engaging SC/ST community, the owner may consider on the merit to incentivize the Contractor by paying additional 1% of

the service contract portion if the number of SC/ST workforce engaged in the contract exceeds 30% of the total deployed strength and 2%, if the strength goes beyond 50%. While the Contractor will assist the workforce so engaged to become self-reliant in meeting the work expectation, the Owner may also volunteer its training resources to the extent possible to improve their employability. The Contractor shall maintain the proper documentation of such category of the workforce engaged and the owner may consider to pay the incentive after its verification.

The Owner may also consider extending price preference of 5% in the bid evaluation for an order value up to Rs.50 Lacs, provided the company is owned by a person from SC/ST community having minimum 50% holding in the company.

such Material(s) regardless of when the Material(s) are shipped, received or accepted not shall any purported oral modification or revisions of the Contract by Owner or its representative(s) act as waiver of the terms hereof.

35. Vendor rating:

You are requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Your performance with respect to the said factors will be taken into consideration for future business.

36. Vendor Feedback:

34.1 In this dealing Vendors feedback is important for the purchaser to improve its processes. If Contractor have to report any grievance, problem or require any clarification, information, Contractor is requested to contact purchaser at email ID:

CC_CUSTOMERFEEDBACK@tatapower.com

34.2 Contractor is requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Contractor performance with respect to the said factors will be taken into consideration for future business.

37. Non-Waiver:

Failure of Owner or its representatives to insist upon adherence to any of the terms or conditions incorporated in the Contract or failure or delay to exercise any right or remedies herein or by law accruing, or failure to promptly notify the Contractor in the event of breach or the acceptance of or the payment of any Material(s) hereunder or approval of any design or Material(s) shall not release the Contractor and shall not be deemed a waiver of any right of Owner to insist upon the strict performance thereof or of any of its rights or remedies as to any

ESG FRAMEWORK FOR BUSINESS ASSOCIATES

Tata Power's Sustainability philosophy sits at the core of its Business Strategy. Tata Power Sustainability Model has an overarching objective of 'Leadership with care' with key elements of 'Care for the Environment'; 'Care for the Community'; 'Care for our Customers / Partners' and 'Care for our People'. These sustainability objectives encompass the Environmental, Social and Governance objectives driven as integrated elements.

Tata Power, together with its stakeholders is determined to achieve sustainable growth while creating shared value for all.

As a part of future ready roadmap, Tata Power has targeted following as our Environment, Social and Governance priorities:

- Being Carbon Net Zero before 2045
- Growing Clean capacity (80% by 2030)
- Customer centricity
- Becoming water neutral before 2030
- Achieving zero waste to landfill before 2030
- No net loss of biodiversity before 2030
- Positively impacting 80 million lives by 2027

In order to create a sustainable business ecosystem, Tata Power expects that all its Business Associates (BA) which includes its suppliers, vendors, consultants and service providers to align to its ESG and sustainability commitments.

Tata Power encourages improved efficiencies and scaling up of green initiatives through technology and innovation taking us farther on the journey of reducing carbon emissions and preparing the entire eco-system towards products and services that would have net positive impact on the environment and communities that we operate in.

The Vendors/ bidders wishing to associate with Tata Power are expected to share their own sustainability and ESG journey. We at Tata Power promote all Business Associates to have a sustainable procurement policy for their supplier and service providers to contribute to our integrated approach in achieving a sustainable supply chain. The BA is encouraged to carry out the assessment of their sub-contractors and sub-vendors on sustainability readiness so that they are aware of the expectation/ business requirement.

The Vendor/ Bidder shall fill-in the 'Environment, Social and Governance Compliance Screening Questionnaire for Business Associates' attached at Annexure-I and submit the same along with the Bid in Ariba online platform.

Responsible Supply Chain Management:

Tata Power is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy.

Tata Power Business Associate (BA) shall comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations.

Tata Power encourages its BA to focus on green design, green supply, green production, green logistics and green packaging in performing their business obligations. The BA is expected to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy (enclosed with this document as Annexure-II).

The BA is expected to:

- Strive towards Conservation of Energy, Water, Resources and optimize transportation of Men & Materials to minimize environmental impact and reduce carbon footprint.
- Carry out the assessment of materials used for construction, operation & maintenance, consumables and accordingly phase out those materials which are environmentally hazardous.
- Be cognizant that diversity in the workplace positively impacts business.
- Promote affirmative action by supporting people from SC/ ST background by engaging workforce from SC/ ST community under the contracts agreed herein.
- Share the commitment of 'No child labour', 'No forced labour', Non-discrimination on the basis of caste, colour, religion, gender, disability, maternity or pregnancy or any other factor unrelated to the requirements of the job
- Pay the wages or remuneration to the workforce, personnel deployed in compliance to all applicable laws and regulations.
- Provide its employees/ deployed labor with an employment environment that is free of physical or psychological harassment.
- Carry out the assessment of their Sub-contractors on their Sustainability Readiness so that they are aware of the above expectation/ standards
- To ensure usage of suitable package material which is more environmentally sustainable. Further the packing material shall be recycled to the extent possible. The material used for packing is expected to suit the mode of transport and to ensure its safe receipt at point of delivery.

Waste Disposal:

The BA is expected to follow best practices for disposal of waste, few of which are listed below:

- Have a detailed project plan that includes the waste management, segregation of all designated waste material (Recyclable/ Non-Recyclable), collecting, storing, disposing and transferring the same to pre-arranged facility/ destination in timely and safe manner as per environmental legislations. The project plan shall also include the innovative construction practice to eliminate or minimize waste, protect surface/ground water, control dust and other emissions to air and control noise.
- Have purchase policy to encourage the procurement of material with recycled and minimum packaging of goods during delivery and appropriate means for site-to-site transportation of materials to avoid damage and litter generation.
- Ensure that the residents living near the site are kept informed about proposed working schedule and timings/ duration of any abnormal noise full activity that is likely to happen.
- Ensure the regular maintenance and monitoring of vehicles and equipment for efficient fuel use so that emissions and noise are within acceptable limits to avoid air pollution.

Water Management:

The BA is expected to follow best practices for water management, few of which include a management and monitoring system for water withdrawals and consumption, procedures to reduce water usage or reuse/recycle water, and pretreatment of wastewater before disposal.

Compliance to Law:

The BA shall adhere to responsible business practices and comply with the provision of all the Statutory Acts Applicable. Special attention of the BA is drawn towards the compliance of provision of the following statutes: (along with the latest amendments/additions, as applicable):

- The Child Labour (Prohibition and Regulation) ACT, 1986.
- The Contract Labour (Regulation and Abolition) ACT, 1970.
- The Employee's Pension Scheme, 1995.
- The Employee's Provident Funds and miscellaneous provisions Act, 1952.
- The Employees State Insurance Act, 1948.
- The Equal Remuneration Act, 1976.
- The Industrial Disputes Act, 1947.
- The Maternity Benefit Act, 1961.
- The Minimum Wages Act, 1948.
- The Payment of Bonus Act, 1965
- The Payment of Gratuity Act, 1972.
- The Payment of Wages Act, 1936.
- The Shops & Establishment Act, 1954.
- The Workmen's Compensation Act, 1923.
- The Employer's Liability Act, 1938.
- and any other applicable statutory act

Social Accountability (SA 8000):

Tata Power expects its BAs to follow guidelines of SA 8000:2014 on the following aspects

- Child Labour
- Forced or Compulsory Labour
- Health & Safety
- Freedom of Association & Right to Collective Bargaining
- Discrimination
- Disciplinary Practices
- Working Hours
- Remuneration
- Management System

Health and Safety

The BA is expected to ensure the health and safety of his and his Sub-contractor's staff and labour. The BA shall, in collaboration with and according to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The BA shall maintain records and make reports concerning health, safety and welfare of persons deployed, and damage to property, as the Owner's Representative may reasonably require. The BA shall be responsible for the medical treatment / hospitalization of his and his Sub-contractor's staff/ labour.

The BA shall appoint a qualified Safety officer at the Site to be responsible for maintaining the safety, and protection against accidents, of all personnel on the Site. Such Safety officer shall have the authority to issue instructions and take protective measures to prevent accidents.

The BA shall comply in toto with the Tata Power's Contractor Safety Terms & Conditions, Health Safety & Environment Manual while working on Tata Power Site/ Services/ Contracts.

Grievance Mechanism

The BA is expected to have grievance procedures that allow stakeholders to anonymously bring environmental and/or work-related violations and/or concerns to the attention of management. In addition, the BA is expected to have procedures for examining reports of environmental and/or work-related violations or concerns and/or privacy complaints.

Data Protection

The BA is expected to have a formal process to address data security or privacy issues.

ANNEXURE-I



Sr. No.	Question Description	Response (Y/N)	Remarks
Organization			
1	Does your Company have Sustainability Policy at Organization Level? If Yes, Please attach		
2	Do you have sustainable procurement policy in place for your own suppliers? If Yes, Please attach		
3	Does your company do regular assessment of its suppliers on ESG parameters?		
4	Are there ESG risks, or negative impacts identified in your supply chain		
Governance			
1	Is diversity taken into consideration when appointing board members/ senior management? Do you have an independent director/s?		
2	Has your company taken initiatives to ensure ethical practices at workplace? Please share the details, Policies etc.		
3	Does your company have a formal process to address data security or privacy issues? Please share the details, Policies etc.		
4	Does your company have grievance mechanism for stakeholder issues and track resolution?		
Environment/ Planet			
1	Does your company have Environmental Policy? If Yes, Please attach		
2	Do you have a formal process for waste management including solid wastes, liquid wastes and hazardous waste?		
3	Does your company track greenhouse gas emission? Also, what percentage of own consumption comes from the renewable energy?		
4	Does your company have a formal process for water management including monitoring of water consumption and withdrawals, and if applicable, pretreatment of wastewater?		
Green Technology/ Innovation			
1	Are your facility/ Product/ Services provided by you is based on green design, green production, green packaging or green logistics considerations? Please elaborate.		
2	Do your products or services have any environmental or social features or benefits (e.g. environmental/energy certification, ecolabels, fair trade certification, etc.)?		
Social/ People			
1	Does you facility/ Company have written personnel policies in place Are you an equal opportunity employer?		
2	Please describe any formal programme / campaign in place to promote company involvement with the community (volunteering, etc.). What is the percentage of profit spend on community activities?		
3	Does your company have a written Health & Safety Policy or Program? If Yes, Please attach		
Certifications: Does your company have following certifications (valid till date-please mention validity)			
1	ISO9001 accreditation		
2	SA8000 or equivalent		
3	ISO 14001 certification		
4	ISO 18001/45001 or equivalent		
5	ISO/IEC 27001 or equivalent		
6	Any Other (Please specify)		

Signature

Business Associate Name

ANNEXURE-II

CORPORATE SUSTAINABILITY POLICY

At Tata Power, our Sustainability Policy integrates economic progress, social responsibility and environmental concerns with the objective of improving quality of life. We believe in integrating our business values and operations to meet the expectations of our customers, employees, partners, investors, communities and public at large

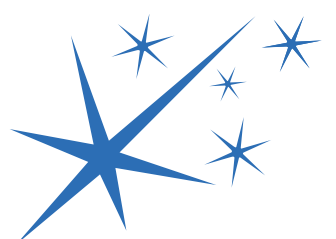
- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the customers and adhere to our promised standards of service delivery
- We will respect the universal declaration of human rights, International Labour Organization's fundamental conventions on core labour standards and operate as an equal opportunities employer
- We shall encourage and support our partners to adopt responsible business policies, Business Ethics and our Code of Conduct Standards
- We will continue to serve our communities:
 - By implementing sustainable Community Development Programmes including through public/private partnerships in and around our area of operations
 - By constantly protecting ecology, maintaining and renewing bio-diversity and wherever necessary conserving and protecting wild life, particularly endangered species
 - By encouraging our employees to serve communities by volunteering and by sharing their skills and expertise
 - By striving to deploy sustainable technologies and processes in all our operations and use scarce natural resources efficiently in our facilities
 - We will also help communities that are affected by natural calamities or untoward incidence, or that are physically challenged in line with the Tata Group's efforts

The management will commit all the necessary resources required to meet the goals of Corporate Sustainability.



(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018



Supplier Code of Conduct

Tata Power follows the Tata Code of Conduct (TCoC) and the Whistle blower Policy and expect all its Suppliers to adhere to the same principles. “**Supplier**” here means any business, company, corporation, person or other entity that provides, sells or seeks to sell, any kind of goods or services to Tata Power, including the Supplier’s employees, agents and other representatives.

Tata Code of Conduct- (TCoC): <https://www.tatapower.com/pdf/aboutus/Tata-Code-of-Conduct.pdf>

Whistle Blower Policy: <https://www.tatapower.com/pdf/aboutus/whistle-blower-policy-and-vigil-mechanism.pdf>

Anti-Bribery & Anti-Corruption Policy: <https://www.tatapower.com/pdf/aboutus/abac-policy.pdf>

The suppliers are expected to adhere to the following Do’s and Don’ts:

Do’s

1. The Suppliers shall be committed to supplying products and services of high quality that meet all applicable standards and laws, including product packaging, labelling and after-sales service obligations.
2. Comply with all applicable laws and regulations, both in letter and in spirit, in all the territories in which it operates.
3. Strive to provide a safe, healthy and clean working environment for its employees.
4. Strive for environmental sustainability, particularly with regard to the emission of greenhouse gases, consumption of water and energy and the management of waste and hazardous materials.
5. The Supplier shall represent our company (including Tata brand) only with duly authorised written permission from our company.
6. Safeguard the confidentiality on the use of intellectual property, information and data of the Company.
7. Gifts and hospitality given or received should be modest in value and appropriate as per Company Policy.
8. The assets of Tata Power shall be employed primarily and judiciously for the purpose of conducting the business for which they are duly authorised.
9. All actual or potential conflicts due to financial or any other relationship with a Tata Power employee shall be disclosed.

Don’ts

1. The Supplier shall not make unfair or misleading statements about the products and services of competitors.
2. Children shall not be employed at workplaces.
3. Forced labour shall not be used in any form.
4. The Suppliers shall neither receive nor offer or make, directly or indirectly, any illegal payments, remunerations, gifts, donations or comparable benefits that are intended, or perceived, to obtain uncompetitive favours for the conduct of its business with Tata Power.

Reporting Violations

The Supplier shall notify the Company regarding any known or suspected improper behaviour of other suppliers or employees relating to its dealings with Tata Power, by email to: cecounsellor@tatapower.com. The same can also be raised through our 3rd party ethics helpline facility:

Toll-free Number	1800 267 4065
Email	tatapower@tip-offs.in
Website & Chatbot	www.tatapower.tip-offs.in
Postal address	Attn to: Mr. Puneet Arora, Deloitte Touch Tohmatsu India LLP, 6 floor, AIPL Business, Sector 62, Gurugram, Haryana 122102