



RFQ No.: 4100052383

OPEN TENDER NOTIFICATION

FOR

**SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF
NETWORK SWITCHES ACROSS TATA POWER.**

Tender RFQ No.: 4100052383
Due Date for Bid Submission: 11.09.2025 [17:00 Hrs.]

The Tata Power Company Limited
Mumbai, Maharashtra

CONTENTS OF THE ENQUIRY

S. NO.	PARTICULARS
1.	Event Information
2.	Evaluation Criteria
3.	Submission of Bid Documents
4.	Bid Opening & Evaluation process
5.	Award Decision
6.	Order of Preference/Contradiction
7.	Post Award Contract Administration
8.	Specifications and Standards
9.	General Conditions of Contract
10.	Safety
Annexures	
I.	Annexure I – Schedule of Items
II.	Annexure II – Technical Specifications
III.	Annexure III – Schedule of Deviations
IV.	Annexure IV – Schedule of Commercial Specifications
V.	Annexure V – Document Check List
VI.	Annexure VI – Acceptance Form for Participation in Reverse Auction Event
VII.	Annexure VII – Scope of Work & Service Level Agreement
VIII.	Annexure VIII – Inspection Test Plan
IX.	Annexure IX – General Condition of Contract
X.	Annexure X – Manufacturers Authorization Form



RFQ No.: 4100052383

1.0 Event Information

1.1 Scope of work

Open Tenders are invited in e-tender bidding process from interested Bidders for entering into an Outline Agreement for a period of 6 Months as defined below:

S. No.	Description	EMD Amount (Rs.)	Tender Fee (Rs.)
1	Supply, Installation, Testing & Commissioning of Network Switches across Tata Power.	1,00,000	2000

1.2 Availability of Tender Documents

Non-transferable tender documents may be purchased by interested eligible bidders from address given below, on submission of written application to the under mentioned and upon payment of non-refundable Tender fee.

Chief (Corporate Contracts)
The Tata Power Company Limited
Smart Center of Procurement Excellence, 3rd Floor, Sahar Receiving Station
Sahar Airport Road, Andheri East, Mumbai-400059

Tender documents may be downloaded by interested eligible bidders from TPC website www.tatapower.com with effect from 19.08.2025. In the event detailed tender documents are downloaded from TPC website or are received through email from TPC, the Tender Fee shall be compulsorily submitted either online through NEFT/ RTGS in favor of "The Tata Power Company Limited". Any such bid submitted without this Fee shall be rejected.

Bidders are requested to visit TPC website www.tatapower.com regularly for any modification/ clarification to the bid documents.

1.3 Calendar of Events

(a)	Date of availability of tender documents from TPC Website	From 19.08.2025 to 11.09.2025, 17:00 Hours
(b)	Last Date of receipt of pre-bid queries, if any	26.08.2025 up to 17:00 Hours
(c)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	29.08.2025
(d)	Date & Time of Pre-Bid Meeting (If any)	Will be notified prior (if required)
(e)	Last date and time of receipt of Bids	11.09.2025 up to 17:00 Hours
(f)	Date & Time of opening of Price of qualified bids	Will be notified to the successful bidders through our website / e-mail.

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

1.4 Mandatory documents required along with the Bid

- 1.4.1 EMD of requisite value and validity
- 1.4.2 Tender Fee in case the tender is downloaded from website
- 1.4.3 Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.

RFQ No.: 4100052383

- 1.4.4 Drawing, Type Test details along with a sample of each item as specified at Annexure I (as applicable)
- 1.4.5 Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.
- 1.4.6 Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.
- 1.4.7 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.
- 1.4.8 Copy of PAN, GST, PF and ESI Registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

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

1.5 Deviation from Tender

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

1.6 Right of Acceptance/Rejection

Bids are liable for rejection in absence of following documents:-

- 1.6.1 EMD of requisite value and validity
- 1.6.2 Tender fee of requisite value
- 1.6.3 Price Bid as per the Price Schedule mentioned in Annexure-I
- 1.6.4 Necessary documents against compliance to Qualification Requirements mentioned at Clause 1.7 of this Tender Document.
- 1.6.5 Filled in Schedule of Deviations as per Annexure III
- 1.6.6 Filled in Schedule of Commercial Specifications as per Annexure IV
- 1.6.7 Receipt of Bid within the due date and time

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

1.7 Qualification Criteria

- The bidder shall have carried out design, engineering, supply, installation, testing and commissioning of L3/L2 network comprising of minimum 200 nodes. The system supplied should have been in satisfactory commercial operation for a minimum period of 3 years as on scheduled date of the bid opening.
- Bidder shall have carried out installation & commissioning of IT Network (at-least 200Nodes).
- Bidder must have manufacturer authorization certificate & back-to-back support letter from OEM for providing comprehensive maintenance support & services facility in India preferably in Mumbai.
- The Bidder should have average annual turnover of Rs. 20 Crores in last 3 financial years. Copy of audited P&L account to be submitted in this regard.
- Bidder must have all Statutory Compliance like Valid PAN, ESI registration, EPF registration & GSTN Registration. Copy of all the certificate shall be submitted in this regard.
- The Bidder should have ISO 27001 Certification. Copy of certificate shall be submitted in this regard.

1.8 Marketing Integrity

RFQ No.: 4100052383

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

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

1.9 Supplier Confidentiality

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

2.0 Evaluation Criteria

- The bids will be evaluated technically on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ as calculated in Schedule of Items [Annexure I]. TPC however, reserves right to split the order line item wise and/or quantity wise among more than one Bidder. Hence all bidders are advised to quote their most competitive rates against each line item.
- Bidder has to mandatorily quote against each item of Schedule of Items [Annexure I]. Failing to do so, TPC may reject the bids.

NOTE: In case of a new bidder not registered, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However TPC reserves the right to carry out factory inspection and evaluation for any bidder prior to technical qualification. In case a bidder is found as Disqualified in the factory evaluation, their bid shall not be evaluated any further and shall be summarily rejected. The decision of TPC shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause:

The prices shall remain firm during the entire contract period.

3.0 Submission of Bid Documents**3.1 Bid Submission**

Bidders are requested to submit their offer in line with this Tender document. TPC shall respond to the clarification raised by various bidders and the replies will be sent to all participating bidders through e-mail.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "EMD" of Rs. 1,00,000/- (Rupees One Lakh only) shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of BG / Bankers Pay Order favoring "The Tata Power Company Limited". The EMD has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted and the bid as submitted shall



RFQ No.: 4100052383

be liable for rejection. A separate non-refundable tender fee of stipulated amount also needs to be transferred online through NEFT/ RTGS in case the tender document is downloaded from our website.

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

Account Name: The Tata Power Co. Ltd.

Bank Name: HDFC Bank, Fort Branch, Mumbai

Bank Account No. : 00600110000763

IFSC Code: HDFC0000060

SECOND PART: "TECHNICAL BID" shall contain the following documents:

- a) Documentary evidence in support of qualifying criteria
- b) Technical literature/GTP/Type test report etc. *(if applicable)*
- c) Qualified manpower available
- d) Testing facilities *(if applicable)*
- e) No Deviation Certificate as per the Annexure III – Schedule of Deviations
- f) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, payment terms etc. as per the Annexure IV – Schedule of Commercial Specifications.
- g) Quality Assurance Plan/Inspection Test Plan for supply items *(if applicable)*

The technical bid shall be properly indexed and is to be submitted in Soft Copy through Ariba Portal only. Hard Copy of Technical Bids need not be submitted.

THIRD PART: "PRICE BID" shall contain only the price details and strictly in format as mentioned in Annexure I along with explicit break up of basic prices, Taxes & duties, Freight etc. In case any discrepancy is observed between the item description stated in Schedule of Items mentioned in the tender and the price bid submitted by the bidder, the item description as mentioned in the tender document (to the extent modified through Corrigendum issued if any) shall prevail.

FOR BIDS INVITED THROUGH E-PROCUREMENT PORTAL:

The interested bidders are requested to obtain user name and password for purpose of bid submission through Ariba portal of TPC, Mumbai

Bids have to be mandatorily submitted only through Ariba portal of TPC. Bids submitted through any other form/ route shall not be admissible

The EMD in the form of BG shall be submitted in original hard copy and then placed in sealed envelope which shall be clearly marked as below:

EMD

"Supply, Installation, Testing & Commissioning of Network Switches across Tata Power."

Please mention our RFQ Number:- 4100052383 on the Tender and drop the same at The Tata Power Company Limited, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Sahar Airport Road, Andheri East, Mumbai-400059.

The envelope shall be addressed to:

**Chief (Corporate Contracts)
The Tata Power Company Limited
Smart Center of Procurement Excellence, 3rd Floor, Sahar Receiving Station
Sahar Airport Road, Andheri East, Mumbai-400059**



RFQ No.: 4100052383

The envelope shall also bear the Name and Address of the Bidder along with our Tender No. and subject.

SIGNING OF BID DOCUMENTS:

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

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

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

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

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

3.2 Contact Information

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

Communication Details:

Lead Contracts – T&D

Name: Mr. Atharva Dhumal
Contact No: 8369593396
E-Mail ID: atharva.dhumal@tatapower.com

Head Contracts – T&D:

Name: Mr. Selva Ganesh S P
Contact No.: 9971395257
E-Mail ID: selva.ganesh@tatapower.com

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply/ work with a break up of prices for individual items and Taxes & duties. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various sites of TPC. The all-inclusive prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during the execution of the supply work, breakup of price constituents.

The quantity break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical



RFQ No.: 4100052383

Specifications/ Scope of Work/ SLA mentioned in the tender, shall be deemed to be included in prices quoted.

3.4 Bid Currencies

Prices shall be quoted in Indian Rupees Only.

3.5 Period of Validity of Bids

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

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

3.6 Alternative Bids

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

3.7 Modifications and Withdrawal of Bids

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

3.8 Earnest Money Deposit (EMD)

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

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

- Banker's Cheque/ Demand Draft/ Pay order drawn in favor of The Tata Power Company Limited, payable at Mumbai.
- Online transfer of requisite amount through NEFT/ RTGS.
- Bank Guarantee valid for 210 days after due date of submission.

The EMD shall be forfeited in case of:

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

Or

- b) The case of a successful bidder, if the Bidder does not
- i) accept the purchase order, or
 - ii) furnish the required performance security BG

3.9 Type Tests (if applicable)

As per attached Annexures

4.0 Bid Opening & Evaluation process

4.1 Process to be confidential

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

4.2 Technical Bid Opening

Bids will be opened at TPC Office Mumbai as per the schedule mentioned in Calendar of Events. In case of limited tenders, the bids shall be opened internally by TPC. In case of Open Tenders, the bids



RFQ No.: 4100052383

shall be opened in the presence of accredited representatives of bidders who may choose to be present at the time of tender opening. Technical bid must not contain any cost information whatsoever.

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

Next, the technical bid of the bidders who have furnished the requisite EMD will be opened, one by one. The salient particulars of the techno commercial bid will be read out at the sole discretion of TPC.

4.3 Preliminary Examination of Bids/Responsiveness

TPC will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order. TPC may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

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

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

Bid determined as not substantially responsive will be rejected by the TPC and/or the TPC and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

4.4 Techno Commercial Clarifications

Bidders need to ensure that the bids submitted by them are complete in all respects. To assist in the examination, evaluation and comparison of Bids, TPC may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the TPC specifications and attempt will be made to bring all bids on a common footing. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted owing to any clarifications sought by TPC.

4.5 Price Bid Opening

Price bids will be opened at the stipulated date and time. The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of TPC without any further correspondence in this regard.

4.7 Reverse Auctions

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

5.0 Award Decision

**RFQ No.: 4100052383**

TPC will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 2.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order/LOI solely depends on TPC on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPC may deem relevant.

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

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

6.0 Order of Preference/Contradiction:

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

1. Schedule of Items (Annexure I)
2. Post Award Contract Administration (Clause 7.0)
3. Submission of Bid Documents (Clause 3.0)
4. Scope of Work and SLA (Annexure VII)
5. Technical Specifications (Annexure II)
6. Inspection Test Plan (Annexure VIII)
7. Acceptance Form for Participation in Reverse Auction (Annexure VI)
8. General Conditions of Contract (Annexure IX)

7.0 Post Award Contract Administration**7.1 Special Conditions of Contract**

- Rate shall remain FIRM till the validity of Rate Contract.
- TPC appreciates and welcomes the engagement/employment of persons from SC/ ST community or any other deprived section of society by their BAs.
- Any change in statutory taxes, duties and levies during the contract period shall be borne by TPC. However in case of delay in work execution owing to reasons not attributable to TPC, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TPC.
- All the terms and conditions of TPC GTC shall be applicable.

7.2 Drawing Submission & Approval

As per annexure - II

7.3 Delivery Terms

Delivery should be done within maximum 6 Weeks & Installation should be done within maximum 3 Months from the date of issuance of PO.

7.4 Warranty Clause

Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship and from defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, for a period of 60 months from the date of final acceptance by the purchaser after completion of 30 days trouble free operation.



RFQ No.: 4100052383

With respect to defects in equipment part, Bidder's liability is to make good by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment within next working day.

7.5 Payment Terms

100% Payment will be released within 45 Days from the date of completion of tender scope of work, after successful Supply, Installation, Testing & Commissioning of equipment, submission of certified bills / invoices and confirmation received from Order manager.

7.6 Liquidated Damages Clause

A sum equivalent to 1% (of total value of order) per week or part thereof for each week's delay, beyond the scheduled supply, installation, testing & commissioning date each subject to maximum of 10% of the total order value.

7.7 Contract Performance Bank Guarantee (CPBG) Clause

Contract Performance Bank Guarantee (CPBG) in Tata Power standard format for 10% of Total Contract Value within 15 days from the date of issuance of Contract. The same will be valid till Warranty Period and with further claim period of 6 months.

7.8 Other Terms & Conditions

All other Terms & conditions shall be as per Technical Specifications, Tata Power – GTC – Supply & Tata Power – GTC – Services.

7.9 Safety Retention

Safety Retention as per the Tata Power General Terms and Conditions shall be applicable and shall be released based on safety performance score after work completion.

7.10 Climate Change

Significant quantities of waste are generated during the execution of project and an integrated approach for effective handling, storage, transportation and disposal of the same shall be adopted. This would ensure the minimization of environmental and social impact in order to combat the climate change.

7.11 Ethics

TPC is an ethical organization and as a policy TPC lays emphasis on ethical practices across its entire domain. Bidder should ensure that they should abide by all the ethical norms and in no form either directly or indirectly be involved in unethical practice.

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

- We shall select our suppliers and service providers fairly and transparently.
- We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.
- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.



RFQ No.: 4100052383

Bidder is advised to refer GTC attached at Annexure VIII for more information.

Any ethical concerns with respect to this tender can be reported to the following e-mail ID: mrpatel@tatapower.com.

8.0 Specification and standards

As per Annexure II.

9.0 General Condition of Contract

Any condition not mentioned above shall be applicable as per GCC for Supply attached along with this tender at Annexure IX.

10.0 Safety

Safety related requirements as mentioned in our safety Manual put in the Company's website which can be accessed by:

<http://www.tatapower.com>

All Associates shall strictly abide by the guidelines provided in the safety manual at all relevant stages during the contract period.

ANNEXURE I
Schedule for Items

Supply, Installation, Testing & Commissioning of Network Switches across Tata Power.					
Sr. No.	Item Description (A)	UoM (B)	Quantity (C)	Unit Rate (D)	Total Price (E = C * D)
1	SITC of L2 Switches (24 Ports)	EA	25		
2	SITC of L2 Switches (48 Ports)	EA	5		
3	SITC of L3 Switches	EA	5		
3	SITC of ToR Switches	EA	2		
	Total Package Cost				
	GST @ 18%				
	Total Cost (Incl. of GST)				

NOTE:

- The bidders are advised to quote prices strictly in the above format and for all the line items as mentioned above. Failing to do so, bids are liable for rejection.
- The bidder must fill each and every column of the above format. ***Mentioning “extra/inclusive” in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.
- The unit price to be indicated in col. No. 5 should be exclusive of taxes & duties which are to be indicated in separate columns meant for the purpose.
- All other Terms & conditions shall be as per Technical Specifications, Tata Power – GTC – Supply & Tata Power – GTC – Services.



RFQ No.: 4100052383

ANNEXURE II
Technical Specifications

As per Annexure No.: VII

CONFIDENTIAL



RFQ No.: 4100052383

ANNEXURE III

Schedule of Deviations

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

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

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

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

Seal of the Bidder:

Signature:

Name:

ANNEXURE IV

Schedule of Commercial Specifications

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

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
1a.	If variable price variation on clause given	Yes / No
1b.	Ceiling	----- %
1c.	Inclusive of Excise Duty	Yes / No (If Yes, indicate % rate)
1d.	Sales tax applicable at concessional rate	Yes / No (If Yes, indicate % rate)
1e.	Octroi payable extra	Yes / No (If Yes, indicate % rate)
1f.	Inclusive of transit insurance	Yes / No
2.	Delivery clause acceptable	Yes / No
3.	Warranty clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of technical bid)	Yes / No
8.	Rebate for increased quantity	Yes / No (If Yes, indicate value)
9.	Change in price for reduced quantity	Yes / No (If Yes, indicate value)
10.	Inspection during stage of manufacture	Yes / No
11.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg'n No.)

ANNEXURE V

Checklist of all the documents to be submitted with the Bid

Bidder has to mandatorily fill in the checklist mentioned below:-

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

ANNEXURE VI**Acceptance Form for Participation in Reverse Auction Event**

(To be signed and stamped by the bidder)

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

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

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

Signature & Seal of the Bidder

ANNEXURE VII

Scope of Work & Service Level Agreement

Bidder to submit below mentioned below documents along with Techno-commercial Bid

1. Bidder to submit List of 3 latest Projects with all technical and Purchaser's details.
2. Bidder to submit List of 2 latest OT Projects details.
3. Necessary PO copies & commissioning reports in respect of L2 switch network shall be submitted along with technical bid.
4. Bidder shall submit previous installation pics. Pics should clearly display entire installation of project.
5. Authorization letter.

CONFIDENTIAL

SPEC/1808/2025 Rev: A Date:18/06/2025	Specifications for network refresh for L2 switches	Page 1 of 18
	IT Infrastructure Network Upgrade project	

Document title: Technical specifications-

Document No: SPEC/1808/26

IT Infrastructure Network Upgrade Project

Revision	Date	Description	Approvals		
			Prepared By	Checked By	Approved By
A	18-06-2025	Issued for Review & Comment	ADC	SK	KN

Contents

Sr. No.	Description
1.0	Introduction
2.0	Approved Vendor List and Qualifying Requirements
2.1	Approved Vendor List
2.2	Qualifying Requirements
3.0	System Description and Scope
4.0	Codes & Standards
5.0	Special notes to Bidder
6.0	Design Requirement
7.0	General Requirement
8.0	Maintenance Requirement
9.0	Training Requirement
10.0	Technical parameter of Equipment (including Data Sheet)
11.0	Cyber Security Requirement
12.0	Quality Requirements, Inspection and Testing (incl. SQP & SFP)
13.0	Performance Requirements
14.0	Warranty
15.0	Data Submission by Bidder
15.1	Along with Bid
15.2	After Award of Contract
16.0	Annexures (Annexure -1 Indicative Bill of Material ,Annexure -2 Data Sheet)
17.0	Architecture

1.0 **INTRODUCTION**

TATA POWER CO.LTD intends to upgrade IT Infrastructure network used for IT LAN Connectivity across PAN INDIA operations region. IT Infrastructure network is used for IT LAN and internet connectivity. Existing network spans approximately across transmission stations & is based on OSPF routing protocol. Currently deployed L2 switches has reached end of life & is on verge of obsolescence hence TPC is proposing to upgrade entire IT Infrastructure network.

Below listed L2 switches along with Locations are proposed to be upgraded.

Sr.no	Location	Quantity
1	TPC Locations	30 Nos

Following are the major systems to be considered for this project

- 1.1 Supply of L2 switch & accessories as per defined BOM.
- 1.2 Installation,Commissioning of L2 switches across IT network & Integration with existing network & NMS system.
- 1.3 Hardening of network switches as per ISO 27001 cyber security standards
- 1.4 Testing of entire network setup as per TATA POWER requirement.
- 1.5 Passive infra cabling & dressing of L2 switch rack.
- 1.6 Warranty terms for 5 years.

The document covers the specific requirements for complete design, detailed engineering, supply, inspection & testing at Bidder's work, packing, transportation, loading and unloading, delivery to site, storage at site, handling at site, panel mounting, network infra setup for connecting proposed L2 switch to local & remote network, powering up testing, commissioning, performance testing, handing over of entire network with complete as built documentation & tagging.

All equipment, system and services covered under this specification shall comply with all current applicable statutory regulations and safety codes in the locality where the equipment is proposed to be installed. The equipment and systems shall also conform to the latest version of applicable codes and standards on the date of offer made by the Bidder unless otherwise indicated. Nothing in this specification shall be construed to relieve the Bidder of this responsibility.

2.0 **BIDDER'S QUALIFICATION REQUIREMENTS**

2.1 **Approved & preferred OEM:**

1. L2 Switch -Cisco/Arista/Aruba/Allied Telesis.
2. SFP make- As per switch OEM make.

2.2 Bidder's Qualifying Requirements:

Refer Annexure A (separately attached document) -Technical Prequalification Requirement.

3.0 SYSTEM DESCRIPTION AND SCOPE

TATA POWER CO LTD is engaged in field of electricity Generation, Transmission & Distribution. Connectivity required for Network Infrastructure that is provided through TATA Power IT WAN network across PAN INDIA region. Currently TPC has DC (Rabale) & DR(Noida) Datacentre deployed for aggregating of all IT Network traffic to server and client infra at both primary & backup datacentre. Project scope includes survey, Planning, Supply, Inspection, Designing, and Configuration & Commissioning of L2 Switches, Network infra cabling, Migration of existing services & Integration with NMS (SolarWinds), Network Hardening & Documentation

Project scope includes survey, Planning, Supply, Inspection, Designing, Configuration & Commissioning of L2 switches, Network cabling, Migration of existing services & Integration with NMS, Network Hardening & Documentation

- 3.1 Material delivery locations are to be considered by Bidder as per following table: Bidder to note that the locations are tentative which may change during detailed engineering.

Sr.no	Location	Switch Quantity
1	TPC Locations	30Nos

- 3.2 The indicative BOM (**Refer Annexure- 1**) is attached with this document for bidders consideration with respect to make, model and required quantity

- 3.3 It is recommended bidder shall visit the site for finalization of BOM for the respective stations. The final BOM along with detailed architecture shall be submitted by the bidder before placement of the Order by purchaser.

- 3.4 Bidder scope includes installation, configuration & commissioning of L2 switches at respective sites.

- 3.5 Bidder scope includes seamless migration of services on new L2 switch network across proposed Locations. Bidder is responsible for complete migration, testing & demonstration of required functionality at individual site.

- 3.6 Scope includes configuration changes required to be made in other installed existing systems across TATA Power Network.

- 3.7 Bidder shall consider services for wiring, network cabling, configuration and testing of L2 switches at proposed transmission stations.
- 3.8 Passive infra cabling, Power supply wiring, mounting of power supply convertor, switches in network rack is in the scope of bidder. Supply and services of all required material and accessories to establish connectivity at transmission stations is to be considered.
- 3.9 Bidder shall study existing network & should layout clear strategy for upgradation of network.
- 3.10 Bidder shall provide detailed implementation & testing plan for proposed network upgradation. It shall include detailing of IP addressing, Configuration template, Interface, Protocol detailing, Port detailing, network hardening details, connectivity details & testing plan.
- 3.11 Bidder will be responsible for end to end testing of services with DC & DR network & should ensure that all services are running smoothly.
- 3.12 Bidder shall consider scope of integration of proposed network switches with Radius server for authentication, NMS server for real time monitoring of proposed network, Syslog server & File integrity server.
- 3.13 Proposed switches fully compatible & interoperable with existing switches.
- 3.14 Demonstration / testing of the system at OEM works (FAT), before dispatch of the system at site. This testing will include TATA Power engineer for physically witnessing the FAT.
- 3.15 Testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineers
- 3.16 Bidder shall submit typical general arrangement drawings for the supplied equipment along with fitting arrangement. Supply, wiring and testing of passive communication accessories (patch chords / cables / LIU / termination equipment / Fiber splicing , etc.)
- 3.17 Bidder shall submit detail documentation of project.
- 3.18 Offered product should be cyber secure and should be well protected from cyber threats identified. Further security updates and patch upgrades to be considered by bidder for minimum period of 5 years at no additional cost.
- 3.19 Bidder shall supply the L2 switches with latest tested version of firmware. Bidder will be solely responsible to resolve any bug observed in firmware during testing or operation phase & should resolve same within 2 weeks of reporting.
- 3.20 Bidder shall perform POC of offered product to qualify for further bid process. In case Bidder is not performing POC/failure of POC during demonstration will lead in rejection of bid.
- 3.21 Suitable test certificates from accredited agency should be submitted by bidder with product offer.
- 3.22 Bidder shall provide undertaking that offered product will be in support for next 10 years & Bidder will ensure that all spares related to offered product will be available during

this period. In case bidder declares end of life or support for offered product, Bidder has to provide replacement of equivalent product.

- 3.23 Bidder shall include TAC support as a part of project scope.
- 3.24 Bidder shall share escalation matrix & TAC support details of technical support team. Bidder shall provide undertaking of providing 24*7 technical support in case of system breakdown/ critical network issues. Also, Bidder shall ensure that all updates, patches, security features are installed regularly on offered product with no additional cost to TATA Power. It will be responsibility of successful bidder to ensure proposed network is up to date during warranty period.
- 3.25 Bidder shall clearly mention delivery timelines of offered product. Maximum delivery timelines shall be 6 weeks from date of PO & Installation timelines shall be maximum 3 months from date of PO.
- 3.26 All requirements should be made clear during the site visit and also in the offer made by the bidder. Any other requirements coming up during later stages after award of contract will strictly not be accepted and will be to bidders account.
- 3.27 Submission of all project documents design, as built will have to be submitted by the bidder in appropriate soft and hard copy formats.
- 3.28 All engineers deputed at site along with technicians should be well trained and should abide by all safety protocols laid down by TATA Power. Successful bidder will be responsible for carrying out the necessary documentation required for enabling vendor teams to work in TATA Power premises.
- 3.29 Transportation of material to individual site along with manpower will be in bidder's scope.
- 3.30 FAT and SAT Checklist and documentation should be submitted in advance by the bidder for approval by Tata Power.
- 3.31 FAT and SAT testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineer.
- 3.32 Final documentation shall be submitted by bidder for each substation.

4.0 CODES AND STANDARDS

The design, manufacture and performance of the network switches shall comply with all the requirements of the latest editions of international codes and standards applicable.

5.0 SPECIAL NOTES TO BIDDER

- 5.1 Bidder is required to depute OEM engineer during entire project setup & till handover. Thereafter Bidder can depute OEM Certified network engineer at site for site visit, commissioning, configuration, testing and handing over the system to the purchaser.

- 5.2 Bidder is required to follow all compliance required for gatepass permission at all TATA POWER transmission stations.
- 5.3 Successful bidder team has to follow the safety procedures laid down by TATA POWER and have to undergo all necessary trainings specified for carrying out such jobs.
- 5.4 Bidder shall provide detailed description of project management plan & proposed core team for commissioning & maintenance.

6.0 **DESIGN REQUIREMENTS**

- 6.1 Compatibility with the existing purchasers network

7.0 **General Requirement**

- 7.1 The L2 switch shall be Rack mountable with minimum 24/48 supporting 100/1000Mbps Base-T & minimum 4 Nos.1G-FX ports.L2 switch shall have provision to fully load the 1G SFP modules.
 - 7.1.1 L2 switch should have single power supply (230Vac).
 - 7.1.2 The LAN switch shall be available with minimum 50 Gbps switching Capacity for 24 port Switch.
 - 7.1.3 The LAN switch shall have minimum packet forwarding rate of 40 million packets per second at 64-byte packet length.
 - 7.1.4 The LAN switch shall support minimum 16000 MAC address.
 - 7.1.5 The switch shall be capable of working with AC Power Supply with a voltage varying from 220vac-240vac at 50 +/-2 Hz.
 - 7.1.6 L2 switch support port mirroring & jumbo frame 9k.
 - 7.1.7 Switch shall support up to 4K Vlans.
 - 7.1.8 The switch must support at least 2GB of DDR SDRAM & 256MB of Flash Memory.
 - 7.1.9 L2 switch shall comply to following temperature performance parameters.
 - Operating Temperature- min 0 to 50 degree C.
 - Storage Temperature- min 0 to 70 degree C.
 - 7.1.10 IPV6 & IPV6 multicast functionalities/features for switches are desirable.
 - 7.1.11 Switch shall support optical diagnostics monitoring for all SFP ports.
 - 7.1.12 Switch shall support web-based GUI /CLI for management.
 - 7.1.13 Switch shall support strong event logging function & facility to integrate with syslog server. Switch shall support logging of all events related to STP, LACP & security events.
 - 7.1.14 Switch shall have capability of advance debugging & diagnostic.
 - 7.1.15 Switch shall support SNMPv1,v2 & v3 for management.
 - 7.1.16 Switch shall support advance monitoring functionality like Netflow & sFlow.

- 7.1.17 Switch must support POE on all ports based on IEEE802.3at. Switch should be able to provide 30Watts power per port to POE devices.
- 7.1.18 Switch shall support NTP protocol.
- 7.1.19 Switch should have USB port for
- 7.1.20 The switch must support Ethernet interfaces based on IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3ab and IEEE 802.3ae.
- 7.1.21 The switch SFP port must support any combination of 100FX, 100BX, 1000SX, 1000LX, 1000ZX, 10GSR, 10GLR and 10GER.
- 7.1.22 Switch shall support IPV6 in hardware based on RFC 2460.
- 7.1.23 Switch shall support feature of auto recovery in case of failure.
- 7.1.24 The switch must support Active fiber Monitoring that prevents eaves dropping on fiber communications by monitoring received optical power.
- 7.1.25 Switch shall should support IEEE link aggregation.
- 7.1.26 Switch shall have capability to automate some functions using switch internal scripting.
- 7.1.27 Switch should support SDN with open flow/open stack/scripting.

Safety standards

- 7.1.28 The switch must comply to Restrictions on Hazardous Substances (RoHS)
- 7.1.29 The switch must comply to the following Safety Standards: UL60950-1, CAN/CSA-C22.2 , No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.

L2 features

- 7.1.30 Switch must have VLAN support on all ports.
- 7.1.31 Switch must support Voice VLAN.
- 7.1.32 Switch must support LLDP-MED based on ANSI/TIA-1057.
- 7.1.33 Switch must support 13KB Jumbo Frames.
- 7.1.34 Switch must support IEEE 802.1s Multiple Instance Spanning Tree.
- 7.1.35 Switch must support IEEE 802.1w Rapid Spanning Tree for fast failover in the event of link failure.
- 7.1.36 Switch shall support link aggregation (LACP) feature based on 802.3ad.
- 7.1.37 Switch shall support spanning-tree Port Fast and Port Fast guard for fast convergence.
- 7.1.38 Switch shall support 802.3ah for Detection of Unidirectional Links and to disable them to avoid problems such as spanning-tree loops and shall support UDLD or any other industry equivalent protocol for unidirectional link detection.
- 7.1.39 Switch shall support for switch port auto recovery (err disable) to automatically reenale a link that is disabled because of a network error.
- 7.1.40 Switch shall support NTP protocol.
- 7.1.41 Switch shall support port mirroring, multi-port mirroring & RSPAN feature for capture of network traffic.
- 7.1.42 Switch should support per port broadcast, Multicast & unicast strom control.

Security features

- 7.1.43 Switch must support RADIUS, PIM & TACACS.
- 7.1.44 Switch must support standard & extended ACL.
- 7.1.45 Switch must support minimum 1000 ACL entries.
- 7.1.46 Switch must support VLAN based & port based ACL.
- 7.1.47 Switch should support MAC security.
- 7.1.48 The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security providing user authentication.
- 7.1.49 It shall have MAC-IP-Port binding up with support for ACL mode.
- 7.1.50 Switch should provide different privilege for login in to switch for management & monitoring.
- 7.1.51 Switch must support Network Access Control.
- 7.1.52 Switch shall support 802.1AE encryption with MACsec.

QOS features

- 7.1.53 Switch must support IEEE 802.1p class of service (COS) prioritization with 8 queues per port.
- 7.1.54 Switch must support rate limiting based on source/destination, IP/MAC, TCP/UDP.
- 7.1.55 Switch must have ability to complete traffic shaping to configurable levels based on source/destination IP/MAC & Layer 4(TCP/UDP) protocols.
- 7.1.56 Switch must support a priority queuing mechanism to guarantee delivery of highest-priority packets ahead of all other traffic.
- 7.1.57 Switch should support rate limiting function to guarantee bandwidth.

Management features

- 7.1.58 Switch must provide management using 10/100/1000-Mbps management or console ports.
- 7.1.59 Switch must have In-band switch management as well.
- 7.1.60 Switch must Support RS-232 serial console port.
- 7.1.61 Switch must have Configuration rollback feature.
- 7.1.62 Switch must support Secure Shell Version 2 (SSHv2), Telnet.
- 7.1.63 Switch must support sFlow / NetFlow - industry standard technology for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
- 7.1.64 The switch must support built in Management Framework to provide the network with backup, recovery and firmware upgrade management without the need of any additional hardware modules or software.

- 7.1.65 The Network must support the ability to centrally manage switches over the WAN network for device backup, zero touch network node recovery and Centralized firmware upgrades with rolling reboots feature.
- 7.1.66 The Switch must support Event-based triggers and scripting.
- 7.1.67 The switch must support full environmental monitoring of PSUs, fans, temperature and internal voltages.
- 7.1.68 Switch shall support for zero touch provisioning & configuration of switch to reduce provisioning time.

Troubleshooting features

- 7.1.69 Switch must support for basic administrative like Ping and tracet.
- 7.1.70 Switch must support built in TCP Dump or Wireshark troubleshooting tool.
- 7.1.71 Switch should be integrated with Security Information and Event Management (SIEM) server. Also should support multiple centralized syslog server, for monitoring and audit trail.
- 7.1.72 Switch must support advance debugging functions like packet capture & packet tracer.
- 7.1.73 Switch shall also support advance ping feature.

SDN Support

- 7.1.74 The switch must be Software Defined Networking (SDN) ready and will support Open Flow v1.3 or similar programmable network protocol.
- 7.1.75 Switch should support 4096 VXLAN. Switch should support both VRF & VXLAN bridging & routing from day1.
- 7.1.76 Switch should support network virtualization using virtual over lay network using VXLAN.
- 7.1.77 Switch should support multi OEM hypervisor environment.

Equipment / Module		Standards
L2 Switch	Environmental condition	Operating temperature range: 0 to 50 degree Celsius Storage temperature range : -10 to 70 degree Celsius Operating relative humidity range 5 to 90% non-condensing Storage relative humidity range 5 to 90% non-condensing
	Electrical compliances	EMC: EN55022 class A, FCC class A, VCCI class A, ICES-003 class A Immunity:EN55024,EN61000-3-levels 2 (Harmonics), and 3 (Flicker) – AC models only
	Safety	Standards: UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.1 Certification: UL, cUL, TUV
	RoHS Compliance	EU RoHS compliant
	Power supply	DC Voltage range- 41 to 60vdc AC Voltage range- 100 to 240vac Frequency- 47 to 55 Hz

8.0 MAINTENANCE REQUIRMENT

- 8.1.1 Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship from of defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, bidder to adhere to the warranty clauses mentioned in this RFP from the date of final acceptance by the Tata Power after completion of 30 days trouble free operation.
- 8.1.2 With respect to defects in equipment part, Bidder's liability is to make arrangement by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment immediately within 24 hours . Bidder has to have a dedicated service facility in Mumbai to address such emergency breakdowns and ensure system back to normalcy.
- 8.1.3 During the warranty period, the bidder will inform the availability of the latest and factory tested firmware. The same shall be implemented / upgraded on the installed systems after approval of the purchaser. This activity shall be carried out free of cost at site as and when the patches are released for further period of 5 years from date of acceptance of the project. Sample testing for the operation of devices and associated equipment shall be carried out after the Upgradation of any software, after obtaining the necessary permissions / system outages.

- 8.1.4 After replacement of the faulty equipment, the Tata Power shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the Tata Power facility CIF (Cost, Insurance, and Freight) free of charge.
- 8.1.5 With respect to software, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder shall be fully responsible to resolve software deficiency reported by the Tata Power within 24 hours
- 8.1.6 With respect to Hardware, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder to note that the purchaser will make best efforts to provide healthy modules from their spare inventory. However, bidder shall repair / replenish the same within seven working days.
- 8.1.7 Bidder shall maintain emergency/critical spares at bidder's factory works that should be made available at TPC site within 24Hrs of demand.
- 8.1.8 With respect to third-party hardware and consumable parts supplied, the Bidder shall consider the warranties from the sub-Vendor as per the RFP and should nowhere be less than the warranty of the main equipment supplied.
- 8.1.9 Upgrades & Modifications: Bidder shall continuously keep Tata Power informed and implement the software upgrades on the supplied Hardware. Any software upgrades which requires hardware modifications shall be informed, for necessary actions by the purchaser. Methodology followed for such update communication by bidder to be clearly mentioned by the bidder.
- 8.1.10 Bidder shall continuously update the purchaser for any platform change of the product life cycle for necessary action at purchaser's end
- 8.1.11 The system referred to above includes Bidder's own as well as third party components.
- 8.1.12 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.
- 8.1.13 Bidder shall depute OEM resident engineer during warranty period on site. Engineer will be responsible for configuration of new features, troubleshooting of network/critical issues & any other support related to L2 network & documentation.
- 8.1.14 Bidder shall assign L2 expert engineer to TPC in case of any complex issues & same shall engineer shall be responsible for handling TAC calls, high level troubleshooting /advance configuration & designing.
- 8.1.15 Bidder shall be equipped with all testing tools & equipment for troubleshooting of network issues. It shall also be ensured that expert engineer should be available 24*7 on site support during emergency condition.

8.2 **TRAINING REQUIREMENT**

- 8.2.1 Bidder should consider training man-days for 5 engineers of TATA Power up to expert level certification on the offered product.
- 8.2.2 Bidder shall provide training to the Purchaser's personnel on the operation and maintenance of the system supplied including Non-OEM equipment/3rd Party equipment. The training shall cover development, integration, installation and commissioning of both software & hardware components of the system.
- 8.2.3 The Bidder shall provide classroom as well as hands-on training on the system. All required training materials such as system catalogues, test instruments, demo equipment, and simulation jigs, etc. shall be provided by the Bidder. The training shall equip the Purchaser's engineers for installation, commissioning, operation and post-warranty maintenance of hardware, software (Operating System, Administration and Applications), protocols and all third-party systems.
- 8.2.4 Bidder shall arrange training at OEM facilities with all required test instruments.

9.0 **TECHNICAL PARAMETERS OF EQUIPMENT INCLUDING DATA SHEET**

QUALITY REQUIREMENTS, INSPECTION, TESTING

9.1 **Software and Database development & system integration**

Software and Database Development and System Integration shall be the responsibility of the Bidder. It shall be the responsibility of the Bidder to indicate and obtain necessary information from the Tata Power and sub vendors.

9.2 **Factory Acceptance Test (FAT)**

The Vendor shall submit a test plan for factory acceptance test (FAT) and commissioning tests of the Communication System for approval. Vendor to submit the type test certificates, pre-FAT testing reports and document before the start of FAT at Vendor's works. The manufacturing phase of the Communication shall be concluded by the factory acceptance test (FAT). The purpose is to ensure that the Vendor has interpreted the specified requirements correctly and that the FAT includes checking to the degree required by the user. The general philosophy shall be to deliver a system to site only after it has been thoroughly tested and its specified performance has been verified, as far as site conditions can be simulated in a test lab. The extensive testing shall be carried out during FAT. The purpose of Factory Acceptance Testing is to ensure trouble free installation at site. No major configuration setting of system is envisaged at site.

9.3 **Hardware Integration Tests**

The hardware integration test shall be performed on the specified systems to be used for Factory tests when the hardware has been installed in the factory. The operation of

each item shall be verified as an integral part of system. Applicable hardware diagnostics shall be used to verify that each hardware component is completely operational and assembled into a configuration capable of supporting software integration and factory testing of the system.

10.0 PERFORMANCE REQUIREMENTS

Proposed L2 switch network should be able to provide a highly reliable & seamless connectivity for remote monitoring & control of substations from centralized control center. Upgraded network should able to provide minimum latency<2ms & availability>99.9% across network. Upgraded network should able to mitigate cyber threats & should be resilient to cyber-attacks.

11.0 Warranty

- a) Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship and from defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, for a period of **60 months** from the date of final acceptance by the purchaser after completion of **30 days** trouble free operation.
- b) With respect to defects in equipment part, Bidder's liability is to make good by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment within **next working day**.
- c) During the warranty period, the bidder shall upgrade the firmware of the modules with the latest available. This activity shall be carried out free of cost at site as and when the patches are released. Sample testing for the operation of devices and associated equipment shall be carried out after the Upgradation of any software.
- d) After replacement of the faulty equipment, the purchaser shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the purchaser's facility CIF (Cost, Insurance, and Freight) free of charge.
- e) With respect to software, the purchaser shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the purchaser for corrective action. If the same is not resolved, the Bidder shall depute his personnel to attend the same within 24 hours whichever is earlier from the time of reporting the problem. The system Bidder shall be fully responsible to resolve hardware and software deficiency reported by the purchaser.
- f) With respect to third-party software and consumable parts supplied, the Bidder shall make reasonable effort to obtain the best warranties possible from the sub-Vendor

thereof and assign to the purchaser any such warranties to the extent that such warranties may be assigned to the purchaser.

- g) Bidder may consider longer warranties than included in these specifications.
- h) Bidder shall extend all warranties / guarantees to the purchaser, provided by sub- Vendors, of duration longer than that in this specification.

11.1 **Upgrades & Modifications**

- 11.1.1 Bidder shall continuously keep the Purchaser informed of all Software and Hardware upgrades as & when these are released.
- 11.1.2 Bidder shall supply upgrades of all installed software (both own and third party) for a period of seven years from the date of system acceptance without any commercial implication.
- 11.1.3 Bidder shall rectify all design defects and software bugs at no extra cost for a period of 7 years from the date of system acceptance
- 11.1.4 Bidder shall provide lifetime support (10 years) for the system, even if no upgrades are implemented.
- 11.1.5 The system referred to above includes Bidder's own as well as third party components.
- 11.1.6 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.

11.2 **Currency of the Equipment:**

- 11.2.1 Bidder must offer equipment's which are latest and released not more than 5 years before the date of execution of the contract. The offered equipment should be such that it should not be declared as End of life within period of 10 years from the date of the order execution.
- 11.2.2 Bidder should submit OEM signed and stamped letter mentioning the following:
 - a) Currency of the offered equipment.
 - b) Commitment for support for 5 years warranty.
 - c) System non compromise (Cyber security) compliance since its launch,
- 11.2.3 In case of bidder discontinuing offered system within the warranty period and installed equipment's going faulty and no replacement available. Equipment installed will have replaced by the latest version complying with same specifications at no extra cost to TATA Power

12.0 **DATA SUBMISSION BY BIDDER**

Bidder shall submit the following information along with the Technical Bid

12.1 **Along with Bid:-**

- 12.1.1 Bidder to submit technical data sheet of the critical equipment, architecture drawing along with the technical offer.
- 12.1.2 Bidder to only provide compliance for other data sheets covered in the specification. However bidder to note that, all data sheets and detailed GTP are required to be submitted during detailed engineering for the approval and finalization by Tata Power.
- 12.1.3 Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality Plan (FQP)
- 12.1.4 General Arrangement Drawings for equipment offered
- 12.1.5 Catalogues of the equipment's offered
- 12.1.6 Detailed Bill of Material with make, model and quantity
- 12.1.7 Product life cycle document for all supplied equipment.
- 12.1.8 List of major relevant experiences of the Principal, Collaborator and the Product respectively.
- 12.1.9 Technical support facilities including qualified man-power, testing tools and instruments and integration facilities available within India preferably Mumbai should have major support centre..
- 12.1.10 Confirmation on lifetime, spares, manufacturing, onsite & Offsite technical support of the supplied equipment for the period of 15 years.
- 12.1.11 The Bidder shall give an undertaking to provide full range of local services (including hardware and software maintenance, modifications and upgrade support) for the life of the delivered Communication system
- 12.1.12 All deviations from the specifications shall be set out by the Bidder, clause by clause, with due justifications along with the offer; failing which the offer shall be deemed to conform to Tata Power specifications in all respects
- 12.1.13 Bidder to submit all relevant test certificates of the offered equipment for technical evaluation
- 12.1.14 Bidder to submit Cyber security related test certificates (from accredited Labs) of the offered equipment for technical evaluation.
- 12.1.15 Bidder to submit stamped detailed technical specifications.

12.2 **After Award of Contract**

The following documents shall be submitted for Tata Power approval during detailed engineering:

- 12.2.1 Bidder to submit all datasheets, detailed GTP of the proposed BOM items during detailed engineering for the approval and finalization by Tata Power.
- 12.2.2 System Architecture Drawing. This drawing should show in detail of the following:
 - i. Network connections
 - ii. Protocol used
 - iii. Type of interconnecting cable

- 12.2.3 Panel GA and Complete wiring diagram
- 12.2.4 Functional Design Specification document
- 12.2.5 Step by Step test procedures for Factory Acceptance Test (FAT) and Site Acceptance Test (SAT)
- 12.2.6 Interconnection Schedule (ICS) for Communication system (e.g. ICS for all field equipment, system.
- 12.2.7 Hardware, Software and Application manuals for all the equipment supplied including that of third parties.
- 12.2.8 All Software Licenses (both own & third party), key for Hardware Locks
- 12.2.9 All interoperability tables
- 12.2.10 Guaranteed technical parameters & Guaranteed availability and reliability
- 12.2.11 Calculation for power supply dimensioning
- 12.2.12 Bill of Material listing equipment designation, make, type ratings, etc. of all the equipment's supplied
- 12.2.13 Logic Diagram (Hardware & Software)
- 12.2.14 Operator's Manual
- 12.2.15 Complete documentation of implemented protocols between various elements
- 12.2.16 Diagnostic and performance evaluation software and hardware tools
- 12.2.17 Details of software (Operating systems, application software, engineering tools, communication systems management software, license details, I/O distribution protocol-wise etc.)
- 12.2.18 Final as built drawings of all communication system as final documents in AutoCAD & PDF format
- 12.2.19 Other documents as may be required / applicable during detailed engineering
- 12.2.20 All drawings and data shall be annotated in English.

Bidder shall furnish six (6) hardcopies and 3 soft copies on reliable media of all drawings, manuals (Administration, Operation & Maintenance, Troubleshooting and Installation), Technical catalogues, Test Certificates and Acceptance Test Reports.

Two copies of the internal test report, FAT and SAT documents with test protocol formats shall be submitted for approval at least 4 weeks before Factory Acceptance Test. Two copies of SAT protocol shall be submitted for approval at least two weeks before Site Acceptance Test.

Bidder shall also furnish Original plus one copy of all System Software (OS, Application and tools) along with delivery. Bidder shall submit two copies of all the configuration, application, display, database backup of all equipment on reliable secondary media.

13.0 ANNEXURES

Annexure - 1

Bill of Material (Indicative)

Sr. No.	Description	Quantity
1	Layer 2 switches consisting of : each switch with- a) 24 copper ports 100/1000 mbps. b) Minimum 4 SFP Ports 1Gbps(Slot) c) SFP Transceiver MM-2km/SM-10km - 20 Nos d) Power supply module - 230VAC with power cable(5A) per switch - 1No e) USB compatible console cable. f) Accessory kit & Rack mounting kit. g) Software license for OS. h) Patch cord, SM, SC-LC-10Nos.	25Nos
2	Layer 2 switches consisting of : each switch with- a) 48 copper ports 100/1000 mbps. b) Minimum 4 SFP Ports 1Gbps(Slot). c) Power supply module - 230VAC with power cable(5A) per switch - 1No d) USB compatible console cable. e) Accessory kit & Rack mounting kit. f) Software license for OS g) Patch cord, MM, ST-ST-10Nos	5 Nos

Services

Sr. No.	Item	Item Description	Qty
1	L2 Network Switch	Installation & Commissioning of L2 switches across proposed transmission stations & migration of services a) Installation ,commissioning, migration, performance testing and handing over of complete network. b) Integration with existing IT WAN network. c)End to end connectivity testing of network with DC & DR network. d) FAT and SAT to the purchaser's satisfaction and demonstration of System Response e) Preparation of ICS, Submission of As-built drawings	30

Document title: Technical specifications-
Specifications for L3 Switches Replacement

Document No: SPEC/1808/25

Following are the major systems to be considered for this project

- 1.1 Supply of L3 switch & accessories as per defined BOM.
- 1.2 Installation, Commissioning of L3 switches & Integration with existing network & NMS system.
- 1.3 Hardening of network switches as per ISO 27001 cyber security standards
- 1.4 Testing of entire network setup as per TATA POWER requirement.
- 1.5 Passive infra cabling across all locations
- 1.6 Warranty period of 5 years.
- 1.7 Passive Infra cabling & Rack dressing of L3 switch Rack.

The document covers the specific requirements for complete design, detailed engineering, supply, inspection & testing at Bidder's work, packing, transportation, loading and unloading, delivery to site, storage at site, handling at site, panel mounting, network infra setup for connecting proposed L3 switch to local & remote network, powering up testing, commissioning, performance testing, handing over of entire network with complete as built documentation & tagging.

All equipment, system and services covered under this specification shall comply with all current applicable statutory regulations and safety codes in the locality where the equipment is proposed to be installed. The equipment and systems shall also conform to the latest version of applicable codes and standards on the date of offer made by the Bidder unless otherwise indicated. Nothing in this specification shall be construed to relieve the Bidder of this responsibility.

1.0 BIDDER'S QUALIFICATION REQUIREMENTS

1.1 Approved & preferred vendor List :

1. L3 Switch – Cisco/Aruba/Arista/Allied Telesis
2. SFP make- As per switch OEM make (Cisco).

1.2 Bidder's Qualifying Requirements:

Refer Annexure A (separately attached document) -Technical Prequalification Requirement.

2.0 INTRODUCTION

TATA POWER CO.LTD intends to upgrade IT Infrastructure network used for IT LAN Connectivity across Hydro operations region. IT Infrastructure network is used for IT LAN and internet connectivity. Existing network spans approximately across transmission stations & is based on OSPF routing protocol. Currently deployed L3 switches has reached end of life & is on verge of obsolescence hence TPC is proposing to upgrade entire IT Infrastructure network

Project scope includes survey, Planning, Supply, Inspection, Designing, Configuration Commissioning of L3 switches, Network cabling, Migration of existing services & Integration with NMS, Network Hardening & Documentation

- 2.1 Material delivery locations are to be considered by Bidder as per following table: Bidder to note that the locations are tentative which may change during detailed engineering.
- 2.2 The indicative BOM (**Refer Annexure- 1**) is attached with this document for bidders consideration with respect to make, model and required quantity
- 2.3 It is recommended bidder shall visit the site for finalization of BOM for the respective stations. The final BOM along with detailed architecture shall be submitted by the bidder before placement of the Order by purchaser.
- 2.4 Bidder scope includes installation, configuration & commissioning of L3 switches at respective sites. Necessary configuration changes required at substation LAN network for establishing seamless connectivity of SAS network at all proposed stations with MCC & BCC server.
- 2.5 Bidder scope includes seamless migration of services on new L3 switch network across proposed transmission stations. Bidder is responsible for complete migration, testing & demonstration of required functionality at individual site.
- 2.6 Scope includes configuration changes required to be made in other installed existing systems across TATA Power Network.
- 2.7 Bidder shall consider services for wiring, network cabling, configuration and testing of L3 switches at proposed transmission stations.
- 2.8 Passive infra cabling, Power supply wiring, mounting of power supply convertor, switches in network rack is in the scope of bidder. Supply and services of all required material and accessories to establish connectivity at transmission stations is to be considered.
- 2.9 Bidder shall study existing network & should layout clear strategy for upgradation of network.
- 2.10 Bidder shall provide detailed implementation & testing plan for proposed network upgradation.It shall include detailing of IP addressing, Configuration template, Interface,Protocol detailing, Port detailing, network hardening details, connectivity details & testing plan.
- 2.11 Bidder will be responsible for end to end testing of services with DC & DR network & should ensure that all services are running smoothly.
- 2.12 Bidder to submit the detailed architecture drawing for proposed network. The drawings should include L3 switches, Converters, Diode Oring unit, MCB's, Connectivity diagram etc.

- 2.13 Bidder shall consider scope of integration of proposed network switches with Radius server for authentication, NMS server for real time monitoring of proposed network, Syslog server & File integrity server.
- 2.14 Proposed switches fully compatible & interoperable with existing switches.
- 2.15 Demonstration / testing of the system at OEM works (FAT), before dispatch of the system at site. This testing will include TATA Power engineer for physically witnessing the FAT.
- 2.16 Testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineers
- 2.17 Bidder shall submit typical general arrangement drawings for the supplied equipment along with fitting arrangement. Supply, wiring and testing of passive communication accessories (patch chords / cables / LIU / termination equipment / Fiber splicing , etc.)
- 2.18 Bidder shall submit detail documentation of project.
- 2.19 Offered product should be cyber secure and should be well protected from cyber threats identified. Further security updates and patch upgrades to be considered by bidder for minimum period of 7 years at no additional cost.
- 2.20 Bidder shall supply the L3 switches with latest tested version of firmware. Bidder will be solely responsible to resolve any bug observed in firmware during testing or operation phase & should resolve same within 2 weeks of reporting.
- 2.21 Bidder shall perform POC of offered product to qualify for further bid process. In case Bidder is not performing POC/failure of POC during demonstration will lead in rejection of bid.
- 2.22 Suitable test certificates from accredited agency should be submitted by bidder with product offer.
- 2.23 Bidder shall provide undertaking that offered product will be in support for next 10 years & Bidder will ensure that all spares related to offered product will be available during this period. In case bidder declares end of life or support for offered product, Bidder has to provide replacement of equivalent product.
- 2.24 Bidder shall include TAC support as a part of project scope.
- 2.25 Bidder shall share escalation matrix & TAC support details of technical support team. Bidder shall provide undertaking of providing 24*7 technical support in case of system breakdown/ critical network issues. Also, Bidder shall ensure that all updates, patches, security features are installed regularly on offered product with no additional cost to TATA Power. It will be responsibility of successful bidder to ensure proposed network is up to date during warranty period.
- 2.26 Bidder shall clearly mention delivery timelines of offered product. Maximum delivery timelines shall be 6 weeks from date of PO & Installation timelines shall be maximum 3 months from date of PO.
- 2.27 All requirements should be made clear during the site visit and also in the offer made by the bidder. Any other requirements coming up during later stages after award of contract will strictly not be accepted and will be to bidders account.
- 2.28 Submission of all project documents design, as built will have to be submitted by the bidder in appropriate soft and hard copy formats.

- 2.29 All engineers deputed at site along with technicians should be well trained and should abide by all safety protocols laid down by TATA Power. Successful bidder will be responsible for carrying out the necessary documentation required for enabling vendor teams to work in TATA Power premises.
- 2.30 Transportation of material to individual site along with manpower will be in bidder's scope.
- 2.31 FAT and SAT Checklist and documentation should be submitted in advance by the bidder for approval by Tata Power.
- 2.32 FAT and SAT testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineer.
- 2.33 Final documentation shall be submitted by bidder for each substation.

3.0 CODES AND STANDARDS

The design, manufacture and performance of the network switches shall comply with all the requirements of the latest editions of international codes and standards applicable.

4.0 SPECIAL NOTES TO BIDDER

- 4.1 Bidder is required to depute OEM engineer during entire project setup & till handover. Thereafter Bidder can depute OEM Certified network engineer at site for site visit, commissioning, configuration, testing and handing over the system to the purchaser.
- 4.2 Bidder is required to follow all compliance required for gatepass permission at all TATA POWER transmission stations.
- 4.3 Successful bidder team has to follow the safety procedures laid down by TATA POWER and have to undergo all necessary trainings specified for carrying out such jobs.
- 4.4 Bidder shall provide detailed description of project management plan & proposed core team for commissioning & maintenance.

5.0 DESIGN REQUIREMENTS

- 5.1 Compatibility with the existing purchasers network

6.0 General Requirement

- 6.1 The L3 switch shall be Rack mountable with minimum 24-port 100/1000Mbps Base-T & minimum 4 Nos. 10G-FX ports. L3 switch shall be fully loaded with 10G SFP+ modules (1310 & 1550nm). Switch shall auto-negotiate between 1 & 10G Uplink ports. Switch shall support at least 2 QSFP ports.

- 6.1.1 L3 switch should have redundant power supplies (Hot swappable) for high availability. Combination of AC(230VAC) power supply is desirable.
- 6.1.2 L3 switch shall support virtual stacking/Hardstacking functionality for stacking of switches. Stacking of switches shall be supported up to 8 switches.
- 6.1.3 Switch shall support virtual stacking in Active-Active mode. The switch must support minimum stacking bandwidth of up to 160Gbps between Switches.
- 6.1.4 The LAN switch shall be available with minimum 250 Gbps Switch Fabric.
- 6.1.5 The LAN switch shall have minimum packet forwarding rate of 200 million packets per second at 64-byte packet length.
- 6.1.6 The LAN switch shall support minimum 64000 MAC address.
- 6.1.7 The switch shall be capable of working with AC Power Supply with a voltage varying from 220vac-240vac at 50 +/-2 Hz.
- 6.1.8 L3 switch support port mirroring & jumbo frame 9k.
- 6.1.9 Switch shall support up to 4K Vlans.
- 6.1.10 The switch must support at least 2GB of DDR SDRAM & 256MB of Flash Memory.
- 6.1.11 L3 switch shall comply to following temperature performance parameters.
Operating Temperature- min 0 to 50 degree C.
Storage Temperature- min 0 to 70 degree C.
- 6.1.12 IPV6 & IPV6 multicast functionalities/features for switches are desirable.
- 6.1.13 Switch shall support optical diagnostics monitoring for all SFP ports.
- 6.1.14 Switch shall support web-based GUI /CLI for management.
- 6.1.15 Switch shall support strong event logging function & facility to integrate with syslog server. Switch shall support logging of all events related to STP, OSPF, LACP & security events.
- 6.1.16 Switch shall have capability of advance debugging & diagnostic.
- 6.1.17 Switch shall support SNMPv1,v2 & v3 for management.
- 6.1.18 Switch shall support advance monitoring functionality like Netflow & sFlow.
- 6.1.19 Switch must support POE on all ports based on IEEE802.3at.Switch should be able to provide 30Watts power per port to POE devices.
- 6.1.20 Switch shall support NTP protocol.
- 6.1.21 Switch should have USB port for
- 6.1.22 The switch must support Ethernet interfaces based on IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3ab and IEEE 802.3ae.
- 6.1.23 The switch SFP port must support any combination of 100FX, 100BX, 1000SX, 1000LX, 1000ZX, 10GSR, 10GLR and 10GER.
- 6.1.24 Switch shall support IPV6 in hardware based on RFC 2460.
- 6.1.25 Switch shall support feature of auto recovery in case of failure.
- 6.1.26 The switch must support Active fiber Monitoring that prevents eaves dropping on fiber communications by monitoring received optical power.
- 6.1.27 Switch shall should support IEEE link aggregation.
- 6.1.28 Switch shall support REST API for integration with U-NMS system.
- 6.1.29 Switch shall have capability to automate some functions using switch internal scripting.
- 6.1.30 Switch should support SDN with open flow/open stack/scripting.

Safety standards

- 6.1.31 The switch must comply to Restrictions on Hazardous Substances (RoHS)
- 6.1.32 The switch must comply to the following Safety Standards: UL60950-1, CAN/CSA-C22.2 , No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.

L2 features

- 6.1.33 Switch must have VLAN support on all ports.
- 6.1.34 Switch must support Voice VLAN.
- 6.1.35 Switch must support LLDP-MED based on ANSI/TIA-1057.
- 6.1.36 Switch must support 13KB Jumbo Frames.
- 6.1.37 Switch must support IEEE 802.1s Multiple Instance Spanning Tree.
- 6.1.38 Switch must support IEEE 802.1w Rapid Spanning Tree for fast failover in the event of link failure.
- 6.1.39 Switch shall support link aggregation (LACP) feature based on 802.3ad.
- 6.1.40 Switch shall support spanning-tree Port Fast and Port Fast guard for fast convergence.
- 6.1.41 Switch shall support 802.3ah for Detection of Unidirectional Links and to disable them to avoid problems such as spanning-tree loops and shall support UDLD or any other industry equivalent protocol for unidirectional link detection.
- 6.1.42 Switch shall support for switch port auto recovery (err disable) to automatically reenale a link that is disabled because of a network error.
- 6.1.43 Switch shall support NTP protocol.
- 6.1.44 Switch shall support port mirroring, multi-port mirroring & RSPAN feature for capture of network traffic.
- 6.1.45 Switch should support per port broadcast, Multicast & unicast strom control.

L3 features

- 6.1.46 Proposed switch must support static routing, OSPFv2&v3 (RFC2328), BGPv4 (RFC1771) & policy based routing.
- 6.1.47 Proposed switch should support minimum 16k IPV4 routes.
- 6.1.48 Proposed switch should support virtual route forwarding(VRF) functionality with minimum 64 VRF support.
- 6.1.49 Switch shall support first hop routing protocols like VRRP.
- 6.1.50 Switch should support policy based routing.
- 6.1.51 Switch should support PIM-DM/SM/SDM for IPV4.
- 6.1.52 Switch should support IGMPv2&v3 protocol.

Security features

- 6.1.53 Switch must support RADIUS, PIM & TACACS.
- 6.1.54 Switch must support standard & extended ACL.
- 6.1.55 Switch must support minimum 1000 ACL entries.

- 6.1.56 Switch must support VLAN based & port based ACL.
- 6.1.57 Switch should support MAC security.
- 6.1.58 The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security providing user authentication.
- 6.1.59 It shall have MAC-IP-Port binding up with support for ACL mode.
- 6.1.60 Switch should provide different privilege for login in to switch for management & monitoring.
- 6.1.61 Switch must support Network Access Control.
- 6.1.62 Switch shall support 802.1AE encryption with MACsec.

QOS features

- 6.1.63 Switch must support IEEE 802.1p class of service (COS) prioritization with 8 queues per port.
- 6.1.64 Switch must support rate limiting based on source/destination, IP/MAC, TCP/UDP.
- 6.1.65 Switch must have ability to complete traffic shaping to configurable levels based on source/destination IP/MAC & Layer 4(TCP/UDP) protocols.
- 6.1.66 Switch must support a priority queuing mechanism to guarantee delivery of highest-priority packets ahead of all other traffic.
- 6.1.67 Switch should support rate limiting function to guarantee bandwidth.

Management features

- 6.1.68 Switch must provide management using 10/100/1000-Mbps management or console ports.
- 6.1.69 Switch must have In-band switch management as well.
- 6.1.70 Switch must Support RS-232 serial console port.
- 6.1.71 Switch must have Configuration rollback feature.
- 6.1.72 Switch must support Secure Shell Version 2 (SSHv2), Telnet.
- 6.1.73 Switch must support sFlow / NetFlow - industry standard technology for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
- 6.1.74 The switch must support built in Management Framework to provide the network with backup, recovery and firmware upgrade management without the need of any additional hardware modules or software.
- 6.1.75 The Network must support the ability to centrally manage switches over the WAN network for device backup, zero touch network node recovery and Centralized firmware upgrades with rolling reboots feature.
- 6.1.76 The Switch must support Event-based triggers and scripting.
- 6.1.77 The switch must support full environmental monitoring of PSUs, fans, temperature and internal voltages.
- 6.1.78 Switch shall support for zero touch provisioning & configuration of switch to reduce provisioning time.

Troubleshooting features

- 6.1.79 Switch must support for basic administrative like Ping and tracert.
- 6.1.80 Switch must support built in TCP Dump or Wireshark troubleshooting tool.
- 6.1.81 Switch should be integrated with Security Information and Event Management (SIEM) server. Also should support multiple centralized syslog server, for monitoring and audit trail.
- 6.1.82 Switch must support advance debugging functions like packet capture & packet tracer.
- 6.1.83 Switch shall also support advance ping feature.

SDN Support

- 6.1.84 The switch must be Software Defined Networking (SDN) ready and will support Open Flow v1.3 or similar programmable network protocol.
- 6.1.85 Switch should support 4096 VXLAN.Switch should support both VRF & VXLAN bridging & routing from day1.
- 6.1.86 Switch should support network virtualization using virtual over lay network using VXLAN.
- 6.1.87 Switch should support multi OEM hypervisor environment.

Equipment / Module		Standards
L3 Switch	Environmental condition	Operating temperature range: 0 to 50 degree Celsius Storage temperature range : -10 to 70 degree Celsius Operating relative humidity range 5 to 90% non-condensing Storage relative humidity range 5 to 90% non-condensing
	Electrical compliances	EMC: EN55022 class A, FCC class A, VCCI class A, ICES-003 class A Immunity:EN55024,EN61000-3-levels 2 (Harmonics), and 3 (Flicker) – AC models only
	Safety	Standards: UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.1 Certification: UL, cUL, TUV
	RoHS Compliance	EU RoHS compliant
	Power supply	DC Voltage range- 41 to 60vdc AC Voltage range- 100 to 240vac Frequency- 47 to 55 Hz

7.0 **MAINTENANCE REQUIRMENT**

- 7.1.1 Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship from of defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, bidder to adhere to the warranty clauses mentioned in this RFP from the date of final acceptance by the Tata Power after completion of 30 days trouble free operation.
- 7.1.2 With respect to defects in equipment part, Bidder's liability is to make arrangement by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment immediately within 24 hours. Bidder has to have a dedicated service facility in Mumbai to address such emergency breakdowns and ensure system back to normalcy within the time lines.
- 7.1.3 During the warranty period, the bidder will inform the availability of the latest and factory tested firmware. The same shall be implemented / upgraded on the installed systems after approval of the purchaser. This activity shall be carried out free of cost at site as and when the patches are released for further period of 5 years from date of acceptance of the project. Sample testing for the operation of devices and associated equipment shall be carried out after the Upgradation of any software, after obtaining the necessary permissions / system outages.
- 7.1.4 After replacement of the faulty equipment, the Tata Power shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the Tata Power facility CIF (Cost, Insurance, and Freight) free of charge.
- 7.1.5 With respect to software, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder shall be fully responsible to resolve software deficiency reported by the Tata Power within 24 hours
- 7.1.6 With respect to Hardware, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder to note that the purchaser will make best efforts to provide healthy modules from their spare inventory. However, bidder shall repair / replenish the same within seven working days.
- 7.1.7 Bidder shall maintain emergency/critical spares at bidder's factory works that should be made available at TPC site within 24Hrs of demand.
- 7.1.8 With respect to third-party hardware and consumable parts supplied, the Bidder shall consider the warranties from the sub-Vendor as per the RFP and should nowhere be less than the warranty of the main equipment supplied.
- 7.1.9 Upgrades & Modifications: Bidder shall continuously keep Tata Power informed and implement the software upgrades on the supplied Hardware. Any software upgrades which

requires hardware modifications shall be informed, for necessary actions by the purchaser. Methodology followed for such update communication by bidder to be clearly mentioned by the bidder.

- 7.1.10 Bidder shall continuously update the purchaser for any platform change of the product life cycle for necessary action at purchaser's end
- 7.1.11 The system referred to above includes Bidder's own as well as third party components.
- 7.1.12 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.
- 7.1.13 Bidder shall depute OEM resident engineer during warranty period on site. Engineer will be responsible for configuration of new features, troubleshooting of network/critical issues & any other support related to L3 network & documentation.
- 7.1.14 Bidder shall assign L3 expert engineer to TPC in case of any complex issues & same shall engineer shall be responsible for handling TAC calls, high level troubleshooting /advance configuration & designing.
- 7.1.15 Bidder shall be equipped with all testing tools & equipment for troubleshooting of network issues. It shall also be ensured that expert engineer should be available 24*7 on site support during emergency condition.

7.2 **TRAINING REQUIREMENT**

- 7.2.1 Bidder should consider training man-days for 5 engineers of TATA Power up to expert level certification on the offered product.
- 7.2.2 Bidder shall provide training to the Purchaser's personnel on the operation and maintenance of the system supplied including Non-OEM equipment/3rd Party equipment. The training shall cover development, integration, installation and commissioning of both software & hardware components of the system.
- 7.2.3 The Bidder shall provide classroom as well as hands-on training on the system. All required training materials such as system catalogues, test instruments, demo equipment, and simulation jigs, etc. shall be provided by the Bidder. The training shall equip the Purchaser's engineers for installation, commissioning, operation and post-warranty maintenance of hardware, software (Operating System, Administration and Applications), protocols and all third-party systems.
- 7.2.4 Bidder shall arrange training at OEM facilities with all required test instruments.

8.0 **TECHNICAL PARAMETERS OF EQUIPMENT INCLUDING DATA SHEET**

QUALITY REQUIREMENTS, INSPECTION, TESTING

8.1 **Software and Database development & system integration**

Software and Database Development and System Integration shall be the responsibility of the Bidder. It shall be the responsibility of the Bidder to indicate and obtain necessary information from the Tata Power and sub vendors.

8.2 **Factory Acceptance Test (FAT)**

The Vendor shall submit a test plan for factory acceptance test (FAT) and commissioning tests of the Communication System for approval. Vendor to submit the type test certificates, pre-FAT testing reports and document before the start of FAT at Vendor's works. The manufacturing phase of the Communication shall be concluded by the factory acceptance test (FAT). The purpose is to ensure that the Vendor has interpreted the specified requirements correctly and that the FAT includes checking to the degree required by the user. The general philosophy shall be to deliver a system to site only after it has been thoroughly tested and its specified performance has been verified, as far as site conditions can be simulated in a test lab. The extensive testing shall be carried out during FAT. The purpose of Factory Acceptance Testing is to ensure trouble free installation at site. No major configuration setting of system is envisaged at site.

8.3 **Hardware Integration Tests**

The hardware integration test shall be performed on the specified systems to be used for Factory tests when the hardware has been installed in the factory. The operation of each item shall be verified as an integral part of system. Applicable hardware diagnostics shall be used to verify that each hardware component is completely operational and assembled into a configuration capable of supporting software integration and factory testing of the system.

9.0 **PERFORMANCE REQUIREMENTS**

Proposed L3 switch network should be able to provide a highly reliable & seamless connectivity for remote monitoring & control of substations from centralized control center. Upgraded network should able to provide minimum latency<2ms & availability>99.9% across network. Upgraded network should able to mitigate cyber threats & should be resilient to cyber-attacks.

10.0 **Warranty**

- a) Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship and from defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, for a period of **60 months** from the date of final acceptance by the purchaser after completion of **30 days** trouble free operation.
- b) With respect to defects in equipment part, Bidder's liability is to make good by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment within **next working day**.

- c) During the warranty period, the bidder shall upgrade the firmware of the modules with the latest available. This activity shall be carried out free of cost at site as and when the patches are released. Sample testing for the operation of devices and associated equipment shall be carried out after the Upgradation of any software.
- d) After replacement of the faulty equipment, the purchaser shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the purchaser's facility CIF (Cost, Insurance, and Freight) free of charge.
- e) With respect to software, the purchaser shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the purchaser for corrective action. If the same is not resolved, the Bidder shall depute his personnel to attend the same within 24 hours whichever is earlier from the time of reporting the problem. The system Bidder shall be fully responsible to resolve hardware and software deficiency reported by the purchaser.
- f) With respect to third-party software and consumable parts supplied, the Bidder shall make reasonable effort to obtain the best warranties possible from the sub-Vendor thereof and assign to the purchaser any such warranties to the extent that such warranties may be assigned to the purchaser.
- g) Bidder may consider longer warranties than included in these specifications.
- h) Bidder shall extend all warranties / guarantees to the purchaser, provided by sub- Vendors, of duration longer than that in this specification

10.1 Upgrades & Modifications

- 10.1.1 Bidder shall continuously keep the Purchaser informed of all Software and Hardware upgrades as & when these are released.
- 10.1.2 Bidder shall supply upgrades of all installed software (both own and third party) for a period of seven years from the date of system acceptance without any commercial implication.
- 10.1.3 Bidder shall rectify all design defects and software bugs at no extra cost for a period of 7 years from the date of system acceptance
- 10.1.4 Bidder shall provide lifetime support (15 years) for the system, even if no upgrades are implemented.
- 10.1.5 The system referred to above includes Bidder's own as well as third party components.
- 10.1.6 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.

10.2 Currency of the Equipment:

- 10.2.1 Bidder must offer equipment's which are latest and released not more than 5 years before the date of execution of the contract. The offered equipment should be such that it should not be declared as End of life within period of 15 years from the date of the order execution.
- 10.2.2 Bidder should submit OEM signed and stamped letter mentioning the following:

- a) Currency of the offered equipment.
- b) Commitment for support for 5 years warranty +5 years post warranty.
- c) System non compromise (Cyber security) compliance since its launch,

10.2.3 In case of bidder discontinuing offered system within the warranty period and installed equipment's going faulty and no replacement available. Equipment installed will have replaced by the latest version complying with same specifications at no extra cost to TATA Power

11.0 **DATA SUBMISSION BY BIDDER**

Bidder shall submit the following information along with the Technical Bid

11.1 **Along with Bid:-**

- 11.1.1 Bidder to submit technical data sheet of the critical equipment, architecture drawing along with the technical offer.
- 11.1.2 Bidder to only provide compliance for other data sheets covered in the specification. However bidder to note that, all data sheets and detailed GTP are required to be submitted during detailed engineering for the approval and finalization by Tata Power.
- 11.1.3 Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality Plan (FQP)
- 11.1.4 General Arrangement Drawings for equipment offered
- 11.1.5 Catalogues of the equipment's offered
- 11.1.6 Detailed Bill of Material with make, model and quantity
- 11.1.7 Product life cycle document for all supplied equipment.
- 11.1.8 List of major relevant experiences of the Principal, Collaborator and the Product respectively.
- 11.1.9 Technical support facilities including qualified man-power, testing tools and instruments and integration facilities available within India preferably Mumbai should have major support centre..
- 11.1.10 Confirmation on lifetime, spares, manufacturing, onsite & Offsite technical support of the supplied equipment for the period of 15 years.
- 11.1.11 The Bidder shall give an undertaking to provide full range of local services (including hardware and software maintenance, modifications and upgrade support) for the life of the delivered Communication system
- 11.1.12 All deviations from the specifications shall be set out by the Bidder, clause by clause, with due justifications along with the offer; failing which the offer shall be deemed to conform to Tata Power specifications in all respects
- 11.1.13 Bidder to submit all relevant test certificates of the offered equipment for technical evaluation
- 11.1.14 Bidder to submit Cyber security related test certificates (from accredited Labs) of the offered equipment for technical evaluation.
- 11.1.15 Bidder to submit stamped detailed technical specifications.

11.2 **After Award of Contract**

The following documents shall be submitted for Tata Power approval during detailed engineering:

- 11.2.1 Bidder to submit all datasheets, detailed GTP of the proposed BOM items during detailed engineering for the approval and finalization by Tata Power.
- 11.2.2 System Architecture Drawing. This drawing should show in detail of the following:
 - i. Network connections
 - ii. Protocol used
 - iii. Type of interconnecting cable
- 11.2.3 Panel GA and Complete wiring diagram
- 11.2.4 Functional Design Specification document
- 11.2.5 Step by Step test procedures for Factory Acceptance Test (FAT) and Site Acceptance Test (SAT)
- 11.2.6 Interconnection Schedule (ICS) for Communication system (e.g. ICS for all field equipment, system).
- 11.2.7 Hardware, Software and Application manuals for all the equipment supplied including that of third parties.
- 11.2.8 All Software Licenses (both own & third party), key for Hardware Locks
- 11.2.9 All interoperability tables
- 11.2.10 Guaranteed technical parameters & Guaranteed availability and reliability
- 11.2.11 Calculation for power supply dimensioning
- 11.2.12 Bill of Material listing equipment designation, make, type ratings, etc. of all the equipment's supplied
- 11.2.13 Logic Diagram (Hardware & Software)
- 11.2.14 Operator's Manual
- 11.2.15 Complete documentation of implemented protocols between various elements
- 11.2.16 Diagnostic and performance evaluation software and hardware tools
- 11.2.17 Details of software (Operating systems, application software, engineering tools, communication systems management software, license details, I/O distribution protocol-wise etc.)
- 11.2.18 Final as built drawings of all communication system as final documents in AutoCAD & PDF format
- 11.2.19 Other documents as may be required / applicable during detailed engineering
- 11.2.20 All drawings and data shall be annotated in English.

Bidder shall furnish six (6) hardcopies and 3 soft copies on reliable media of all drawings, manuals (Administration, Operation & Maintenance, Troubleshooting and Installation), Technical catalogues, Test Certificates and Acceptance Test Reports.

Two copies of the internal test report, FAT and SAT documents with test protocol formats shall be submitted for approval at least 4 weeks before Factory Acceptance Test. Two

copies of SAT protocol shall be submitted for approval at least two weeks before Site Acceptance Test.

12.0 ANNEXURES

Annexure - 1

Bill of Material (Indicative) Communication (Refer attachment)

Sr. No.	Description	Quantity
1	Layer 3 switches consisting of : each switch with- a) 24 copper ports 100/1000 mbps. b) Minimum 4 SFP Ports 1Gbps (Slot). c) SFP Transceiver 1310 nm single mode 40 km - 4 Nos. d) Power supply module - 230VAC with power cable per switch(5A) - 2Nos e) USB compatible console cable. f) Accessory kit & Rack mounting kit. g) Software license for OS, stacking and other advance routing functions.	5 Nos

Services

Sr. No.	Item	Item Description	Qty
4	L3 Network Switch	Installation & Commissioning of L3 switches across proposed transmission stations & migration of services a)Installation ,commissioning, migration, performance testing and handing over of complete network. b) Integration with existing Automation WAN network. c)End to end connectivity testing of substation network with MCC & BCC network. d) FAT and SAT to the purchaser's satisfaction and demonstration of System Response e) Preparation of ICS, Submission of As-built drawings	5 Nos

SPEC/1808/2025 Rev: A Date:23/06/2025	Specifications for network refresh for TOR switches	Page 1 of 18
	IT Infrastructure Network Upgrade project	

Document title: Technical specifications-

Document No: SPEC/1809/25

IT Infrastructure Network Upgrade Project

Revision	Date	Description	Approvals		
			Prepared By	Checked By	Approved By
A	23-06-2025	Issued for Review & Comment	ADC	SK	KN

Contents

Sr. No.	Description
1.0	Introduction
2.0	Approved Vendor List and Qualifying Requirements
2.1	Approved Vendor List
2.2	Qualifying Requirements
3.0	System Description and Scope
4.0	Codes & Standards
5.0	Special notes to Bidder
6.0	Design Requirement
7.0	General Requirement
8.0	Maintenance Requirement
9.0	Training Requirement
10.0	Technical parameter of Equipment (including Data Sheet)
11.0	Cyber Security Requirement
12.0	Quality Requirements, Inspection and Testing (incl. SQP & SFP)
13.0	Performance Requirements
14.0	Warranty
15.0	Data Submission by Bidder
15.1	Along with Bid
15.2	After Award of Contract
16.0	Annexures (Annexure -1 Indicative Bill of Material ,Annexure -2 Data Sheet)
17.0	Architecture

1.0 **INTRODUCTION**

TATA POWER CO.LTD intends to upgrade IT Infrastructure network used for IT LAN Connectivity across PAN INDIA operations region. IT Infrastructure network is used for IT LAN and internet connectivity. Existing network spans approximately across transmission stations & is based on OSPF routing protocol. Currently deployed L2 switches has reached end of life & is on verge of obsolescence hence TPC is proposing to upgrade entire IT Infrastructure network.

Below listed L2 switches along with Locations are proposed to be upgraded.

Sr.no	Location	Quantity
1	TPC DC	2 Nos

Following are the major systems to be considered for this project

- 1.1 Supply of L2 switch & accessories as per defined BOM.
- 1.2 Installation,Commissioning of L2 switches across IT network & Integration with existing network & NMS system.
- 1.3 Hardening of network switches as per ISO 27001 cyber security standards
- 1.4 Testing of entire network setup as per TATA POWER requirement.
- 1.5 Passive infra cabling & dressing of L2 switch rack.
- 1.6 Warranty for 5 years.

The document covers the specific requirements for complete design, detailed engineering, supply, inspection & testing at Bidder's work, packing, transportation, loading and unloading, delivery to site, storage at site, handling at site, panel mounting, network infra setup for connecting proposed L2 switch to local & remote network, powering up testing, commissioning, performance testing, handing over of entire network with complete as built documentation & tagging.

All equipment, system and services covered under this specification shall comply with all current applicable statutory regulations and safety codes in the locality where the equipment is proposed to be installed. The equipment and systems shall also conform to the latest version of applicable codes and standards on the date of offer made by the Bidder unless otherwise indicated. Nothing in this specification shall be construed to relieve the Bidder of this responsibility.

2.0 **BIDDER'S QUALIFICATION REQUIREMENTS**

2.1 **Approved & preferred OEM:**

1. ToR Switch -Cisco/Aruba/Arista
2. SFP make- As per switch OEM make.

2.2 Bidder's Qualifying Requirements:

Refer Annexure A (separately attached document) -Technical Prequalification Requirement.

3.0 SYSTEM DESCRIPTION AND SCOPE

TATA POWER CO LTD is engaged in field of electricity Generation, Transmission & Distribution. Connectivity required for Network Infrastructure that is provided through TATA Power IT WAN network across PAN INDIA region. Currently TPC has DC (Rabale) & DR(Noida) Datacentre deployed for aggregating of all IT Network traffic to server and client infra at both primary & backup datacentre. Project scope includes survey, Planning, Supply, Inspection, Designing, and Configuration & Commissioning of L2 Switches, Network infra cabling, Migration of existing services & Integration with NMS (SolarWinds), Network Hardening & Documentation

Project scope includes survey, Planning, Supply, Inspection, Designing, Configuration & Commissioning of L2 switches, Network cabling, Migration of existing services & Integration with NMS, Network Hardening & Documentation

- 3.1 Material delivery locations are to be considered by Bidder as per following table: Bidder to note that the locations are tentative which may change during detailed engineering.

Sr.no	Location	Switch Quantity
1	TPC DC Rabale	2Nos

- 3.2 The indicative BOM (**Refer Annexure- 1**) is attached with this document for bidders consideration with respect to make, model and required quantity

- 3.3 It is recommended bidder shall visit the site for finalization of BOM for the respective stations. The final BOM along with detailed architecture shall be submitted by the bidder before placement of the Order by purchaser.

- 3.4 Bidder scope includes installation, configuration & commissioning of L2 switches at respective sites.

- 3.5 Bidder scope includes seamless migration of services on new L2 switch network across proposed Locations. Bidder is responsible for complete migration, testing & demonstration of required functionality at individual site.

- 3.6 Scope includes configuration changes required to be made in other installed existing systems across TATA Power Network.

- 3.7 Bidder shall consider services for wiring, network cabling, configuration and testing of L2 switches at proposed transmission stations.
- 3.8 Passive infra cabling, Power supply wiring, mounting of power supply convertor, switches in network rack is in the scope of bidder. Supply and services of all required material and accessories to establish connectivity at transmission stations is to be considered.
- 3.9 Bidder shall study existing network & should layout clear strategy for upgradation of network.
- 3.10 Bidder shall provide detailed implementation & testing plan for proposed network upgradation. It shall include detailing of IP addressing, Configuration template, Interface, Protocol detailing, Port detailing, network hardening details, connectivity details & testing plan.
- 3.11 Bidder will be responsible for end to end testing of services with DC & DR network & should ensure that all services are running smoothly.
- 3.12 Bidder shall consider scope of integration of proposed network switches with Radius server for authentication, NMS server for real time monitoring of proposed network, Syslog server & File integrity server.
- 3.13 Proposed switches fully compatible & interoperable with existing switches.
- 3.14 Demonstration / testing of the system at OEM works (FAT), before dispatch of the system at site. This testing will include TATA Power engineer for physically witnessing the FAT.
- 3.15 Testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineers
- 3.16 Bidder shall submit typical general arrangement drawings for the supplied equipment along with fitting arrangement. Supply, wiring and testing of passive communication accessories (patch chords / cables / LIU / termination equipment / Fiber splicing , etc.)
- 3.17 Bidder shall submit detail documentation of project.
- 3.18 Offered product should be cyber secure and should be well protected from cyber threats identified. Further security updates and patch upgrades to be considered by bidder for minimum period of 5 years at no additional cost.
- 3.19 Bidder shall supply the L2 switches with latest tested version of firmware. Bidder will be solely responsible to resolve any bug observed in firmware during testing or operation phase & should resolve same within 2 weeks of reporting.
- 3.20 Bidder shall perform POC of offered product to qualify for further bid process. In case Bidder is not performing POC/failure of POC during demonstration will lead in rejection of bid.
- 3.21 Suitable test certificates from accredited agency should be submitted by bidder with product offer.
- 3.22 Bidder shall provide undertaking that offered product will be in support for next 10 years & Bidder will ensure that all spares related to offered product will be available during

this period. In case bidder declares end of life or support for offered product, Bidder has to provide replacement of equivalent product.

- 3.23 Bidder shall include TAC support as a part of project scope.
- 3.24 Bidder shall share escalation matrix & TAC support details of technical support team. Bidder shall provide undertaking of providing 24*7 technical support in case of system breakdown/ critical network issues. Also, Bidder shall ensure that all updates, patches, security features are installed regularly on offered product with no additional cost to TATA Power. It will be responsibility of successful bidder to ensure proposed network is up to date during warranty period.
- 3.25 Bidder shall clearly mention delivery timelines of offered product. Maximum delivery timelines shall be 6 weeks from date of PO & Installation timelines shall be maximum 3 months from date of PO.
- 3.26 All requirements should be made clear during the site visit and also in the offer made by the bidder. Any other requirements coming up during later stages after award of contract will strictly not be accepted and will be to bidders account.
- 3.27 Submission of all project documents design, as built will have to be submitted by the bidder in appropriate soft and hard copy formats.
- 3.28 All engineers deputed at site along with technicians should be well trained and should abide by all safety protocols laid down by TATA Power. Successful bidder will be responsible for carrying out the necessary documentation required for enabling vendor teams to work in TATA Power premises.
- 3.29 Transportation of material to individual site along with manpower will be in bidder's scope.
- 3.30 FAT and SAT Checklist and documentation should be submitted in advance by the bidder for approval by Tata Power.
- 3.31 FAT and SAT testing of the system as per approved design outcomes, healthiness checks of all configured channels using appropriate test instruments in presence of TATA power engineer.
- 3.32 Final documentation shall be submitted by bidder for each substation.

4.0 CODES AND STANDARDS

The design, manufacture and performance of the network switches shall comply with all the requirements of the latest editions of international codes and standards applicable.

5.0 SPECIAL NOTES TO BIDDER

- 5.1 Bidder is required to depute OEM engineer during entire project setup & till handover. Thereafter Bidder can depute OEM Certified network engineer at site for site visit, commissioning, configuration, testing and handing over the system to the purchaser.

- 5.2 Bidder is required to follow all compliance required for gatepass permission at all TATA POWER transmission stations.
- 5.3 Successful bidder team has to follow the safety procedures laid down by TATA POWER and have to undergo all necessary trainings specified for carrying out such jobs.
- 5.4 Bidder shall provide detailed description of project management plan & proposed core team for commissioning & maintenance.

6.0 **DESIGN REQUIREMENTS**

- 6.1 Compatibility with the existing purchasers network

7.0 **General Requirement**

- 7.1 The L2 switch shall be Rack mountable with minimum 48 supporting 1GB/10Gbps SFP/SFP+ & minimum 4 Nos.40Gbps(QSPF+).
- 7.1.1 L2 switch should have dual power supply (230Vac).
- 7.1.2 The LAN switch shall be available with minimum 1.7 Tbps switching Capacity for 48 port Switch.
- 7.1.3 The LAN switch shall have minimum packet forwarding rate of 1300 million packets per second at 64-byte packet length.
- 7.1.4 The LAN switch shall support minimum 100000 MAC address.
- 7.1.5 The switch shall be capable of working with AC Power Supply with a voltage varying from 220vac-240vac at 50 +/-2 Hz.
- 7.1.6 L2 switch support port mirroring & jumbo frame 9k.
- 7.1.7 Switch shall support up to 4K Vlan.
- 7.1.8 The switch must support at least 16GB RAM & 32GB Flash Memory.
- 7.1.9 L2 switch shall comply to following temperature performance parameters.
Operating Temperature- min 0 to 50 degree C.
Storage Temperature- min 0 to 70 degree C.
- 7.1.10 IPV6 & IPV6 multicast functionalities/features for switches are desirable.
- 7.1.11 Switch shall support optical diagnostics monitoring for all SFP/SFP+ ports.
- 7.1.12 Switch shall support web-based GUI /CLI for management.
- 7.1.13 Switch shall support strong event logging function & facility to integrate with syslog server. Switch shall support logging of all events related to STP, LACP & security events.
- 7.1.14 Switch shall have capability of advance debugging & diagnostic.
- 7.1.15 Switch shall support SNMPv1,v2 & v3 for management.
- 7.1.16 Switch shall support advance monitoring functionality like Netflow & sFlow.
- 7.1.17 Switch shall support NTP protocol.
- 7.1.18 The switch must support Ethernet interfaces based on IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3ab and IEEE 802.3ae.

- 7.1.19 The switch SFP port must support any combination of 100FX, 100BX, 1000SX, 1000LX, 1000ZX, 10GSR, 10GLR and 10GER.
- 7.1.20 Switch shall support IPV6 in hardware based on RFC 2460.
- 7.1.21 Switch shall support feature of auto recovery in case of failure.
- 7.1.22 The switch must support Active fiber Monitoring that prevents eaves dropping on fiber communications by monitoring received optical power.
- 7.1.23 Switch shall should support IEEE link aggregation.
- 7.1.24 Switch shall have capability to automate some functions using switch internal scripting.
- 7.1.25 Switch should support SDN with open flow/open stack/scripting.

Safety standards

- 7.1.26 The switch must comply to Restrictions on Hazardous Substances (RoHS)
- 7.1.27 The switch must comply to the following Safety Standards: UL60950-1, CAN/CSA-C22.2 , No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.

L2 features

- 7.1.28 Switch must have VLAN support on all ports.
- 7.1.29 Switch must support Voice VLAN.
- 7.1.30 Switch must support LLDP-MED based on ANSI/TIA-1057.
- 7.1.31 Switch must support 13KB Jumbo Frames.
- 7.1.32 Switch must support IEEE 802.1s Multiple Instance Spanning Tree.
- 7.1.33 Switch must support IEEE 802.1w Rapid Spanning Tree for fast failover in the event of link failure.
- 7.1.34 Switch shall support link aggregation (LACP) feature based on 802.3ad.
- 7.1.35 Switch shall support spanning-tree Port Fast and Port Fast guard for fast convergence.
- 7.1.36 Switch shall support 802.3ah for Detection of Unidirectional Links and to disable them to avoid problems such as spanning-tree loops and shall support UDLD or any other industry equivalent protocol for unidirectional link detection.
- 7.1.37 Switch shall support for switch port auto recovery (err disable) to automatically reenale a link that is disabled because of a network error.
- 7.1.38 Switch shall support NTP protocol.
- 7.1.39 Switch shall support port mirroring, multi-port mirroring & RSPAN feature for capture of network traffic.
- 7.1.40 Switch should support per port broadcast, Multicast & unicast strom control.

Security features

- 7.1.41 Switch must support RADIUS, PIM & TACACS.
- 7.1.42 Switch must support standard & extended ACL.
- 7.1.43 Switch must support minimum 5000 ACL entries.

- 7.1.44 Switch must support VLAN based & port-based ACL.
- 7.1.45 Switch should support MAC security.
- 7.1.46 The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security providing user authentication.
- 7.1.47 It shall have MAC-IP-Port binding up with support for ACL mode.
- 7.1.48 Switch should provide different privilege for login in to switch for management & monitoring.
- 7.1.49 Switch must support Network Access Control.
- 7.1.50 Switch shall support 802.1AE encryption with MACsec.

QOS features

- 7.1.51 Switch must support IEEE 802.1p class of service (COS) prioritization with 8 queues per port.
- 7.1.52 Switch must support rate limiting based on source/destination, IP/MAC, TCP/UDP.
- 7.1.53 Switch must have ability to complete traffic shaping to configurable levels based on source/destination IP/MAC & Layer 4(TCP/UDP) protocols.
- 7.1.54 Switch must support a priority queuing mechanism to guarantee delivery of highest-priority packets ahead of all other traffic.
- 7.1.55 Switch should support rate limiting function to guarantee bandwidth.

Management features

- 7.1.56 Switch must provide management using 10/100/1000-Mbps management or console ports.
- 7.1.57 Switch must have In-band switch management as well.
- 7.1.58 Switch must Support RS-232 serial console port.
- 7.1.59 Switch must have Configuration rollback feature.
- 7.1.60 Switch must support Secure Shell Version 2 (SSHv2), Telnet.
- 7.1.61 Switch must support sFlow / NetFlow - industry standard technology for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
- 7.1.62 The switch must support built in Management Framework to provide the network with backup, recovery and firmware upgrade management without the need of any additional hardware modules or software.
- 7.1.63 The Network must support the ability to centrally manage switches over the WAN network for device backup, zero touch network node recovery and Centralized firmware upgrades with rolling reboots feature.
- 7.1.64 The Switch must support Event-based triggers and scripting.

- 7.1.65 The switch must support full environmental monitoring of PSUs, fans, temperature and internal voltages.
- 7.1.66 Switch shall support for zero touch provisioning & configuration of switch to reduce provisioning time.

Troubleshooting features

- 7.1.67 Switch must support for basic administrative like Ping and tracert.
- 7.1.68 Switch must support built in TCP Dump or Wireshark troubleshooting tool.
- 7.1.69 Switch should be integrated with Security Information and Event Management (SIEM) server. Also should support multiple centralized syslog server, for monitoring and audit trail.
- 7.1.70 Switch must support advance debugging functions like packet capture & packet tracer.
- 7.1.71 Switch shall also support advance ping feature.

SDN Support

- 7.1.72 The switch must be Software Defined Networking (SDN) ready and will support Open Flow v1.3 or similar programmable network protocol.
- 7.1.73 Switch should support 4096 VXLAN. Switch should support both VRF & VXLAN bridging & routing from day1.
- 7.1.74 Switch should support network virtualization using virtual over lay network using VXLAN.
- 7.1.75 Switch should support multi OEM hypervisor environment.

Equipment / Module		Standards
L2 Switch	Environmental condition	Operating temperature range: 0 to 50 degree Celsius Storage temperature range : -10 to 70 degree Celsius Operating relative humidity range 5 to 90% non-condensing Storage relative humidity range 5 to 90% non-condensing
	Electrical compliances	EMC: EN55022 class A, FCC class A, VCCI class A, ICES-003 class A Immunity:EN55024,EN61000-3-levels 2 (Harmonics), and 3 (Flicker) – AC models only
	Safety	Standards: UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.1 Certification: UL, cUL, TUV
	RoHS Compliance	EU RoHS compliant
	Power supply	DC Voltage range- 41 to 60vdc AC Voltage range- 100 to 240vac Frequency- 47 to 55 Hz

8.0 MAINTENANCE REQUIRMENT

- 8.1.1 Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship from of defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, bidder to adhere to the warranty clauses mentioned in this RFP from the date of final acceptance by the Tata Power after completion of 30 days trouble free operation.
- 8.1.2 With respect to defects in equipment part, Bidder's liability is to make arrangement by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment immediately within 24 hours whichever is earlier. Bidder has to have a dedicated service facility in Mumbai to address such emergency breakdowns and ensure system back to normalcy.
- 8.1.3 During the warranty period, the bidder will inform the availability of the latest and factory tested firmware. The same shall be implemented / upgraded on the installed systems after approval of the purchaser. This activity shall be carried out free of cost at site as and when the patches are released for further period of 5 years from date of acceptance of the project. Sample testing for the operation of devices and associated equipment

- shall be carried out after the Upgradation of any software, after obtaining the necessary permissions / system outages.
- 8.1.4 After replacement of the faulty equipment, the Tata Power shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the Tata Power facility CIF (Cost, Insurance, and Freight) free of charge.
- 8.1.5 With respect to software, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder shall be fully responsible to resolve software deficiency reported by the Tata Power within 24 hours
- 8.1.6 With respect to Hardware, the Tata Power shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the Tata Power for corrective action. If the same is not resolved, the Bidder shall depute his system expert to attend the same within 24 hours from the time of reporting the problem. Bidder to note that the purchaser will make best efforts to provide healthy modules from their spare inventory. However, bidder shall repair / replenish the same within seven working days.
- 8.1.7 Bidder shall maintain emergency/critical spares at bidder's factory works that should be made available at TPC site within 24Hrs of demand.
- 8.1.8 With respect to third-party hardware and consumable parts supplied, the Bidder shall consider the warranties from the sub-Vendor as per the RFP and should nowhere be less than the warranty of the main equipment supplied.
- 8.1.9 Upgrades & Modifications: Bidder shall continuously keep Tata Power informed and implement the software upgrades on the supplied Hardware. Any software upgrades which requires hardware modifications shall be informed, for necessary actions by the purchaser. Methodology followed for such update communication by bidder to be clearly mentioned by the bidder.
- 8.1.10 Bidder shall continuously update the purchaser for any platform change of the product life cycle for necessary action at purchaser's end
- 8.1.11 The system referred to above includes Bidder's own as well as third party components.
- 8.1.12 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.
- 8.1.13 Bidder shall depute OEM resident engineer during warranty period on site. Engineer will be responsible for configuration of new features, troubleshooting of network/critical issues & any other support related to L2 network & documentation.
- 8.1.14 Bidder shall assign L2 expert engineer to TPC in case of any complex issues & same shall engineer shall be responsible for handling TAC calls, high level troubleshooting /advance configuration & designing.

- 8.1.15 Bidder shall be equipped with all testing tools & equipment for troubleshooting of network issues. It shall also be ensured that expert engineer should be available 24*7 on site support during emergency condition.

8.2 **TRAINING REQUIREMENT**

- 8.2.1 Bidder should consider training man-days for 5 engineers of TATA Power up to expert level certification on the offered product.
- 8.2.2 Bidder shall provide training to the Purchaser's personnel on the operation and maintenance of the system supplied including Non-OEM equipment/3rd Party equipment. The training shall cover development, integration, installation and commissioning of both software & hardware components of the system.
- 8.2.3 The Bidder shall provide classroom as well as hands-on training on the system. All required training materials such as system catalogues, test instruments, demo equipment, and simulation jigs, etc. shall be provided by the Bidder. The training shall equip the Purchaser's engineers for installation, commissioning, operation and post-warranty maintenance of hardware, software (Operating System, Administration and Applications), protocols and all third-party systems.
- 8.2.4 Bidder shall arrange training at OEM facilities with all required test instruments.

9.0 **TECHNICAL PARAMETERS OF EQUIPMENT INCLUDING DATA SHEET**

QUALITY REQUIREMENTS, INSPECTION, TESTING

9.1 **Software and Database development & system integration**

Software and Database Development and System Integration shall be the responsibility of the Bidder. It shall be the responsibility of the Bidder to indicate and obtain necessary information from the Tata Power and sub vendors.

9.2 **Factory Acceptance Test (FAT)**

The Vendor shall submit a test plan for factory acceptance test (FAT) and commissioning tests of the Communication System for approval. Vendor to submit the type test certificates, pre-FAT testing reports and document before the start of FAT at Vendor's works. The manufacturing phase of the Communication shall be concluded by the factory acceptance test (FAT). The purpose is to ensure that the Vendor has interpreted the specified requirements correctly and that the FAT includes checking to the degree required by the user. The general philosophy shall be to deliver a system to site only after it has been thoroughly tested and its specified performance has been verified, as

far as site conditions can be simulated in a test lab. The extensive testing shall be carried out during FAT. The purpose of Factory Acceptance Testing is to ensure trouble free installation at site. No major configuration setting of system is envisaged at site.

9.3 **Hardware Integration Tests**

The hardware integration test shall be performed on the specified systems to be used for Factory tests when the hardware has been installed in the factory. The operation of each item shall be verified as an integral part of system. Applicable hardware diagnostics shall be used to verify that each hardware component is completely operational and assembled into a configuration capable of supporting software integration and factory testing of the system.

10.0 **PERFORMANCE REQUIREMENTS**

Proposed L2 switch network should be able to provide a highly reliable & seamless connectivity for remote monitoring & control of substations from centralized control center. Upgraded network should able to provide minimum latency<2ms & availability>99.9% across network. Upgraded network should able to mitigate cyber threats & should be resilient to cyber-attacks.

11.0 **Warranty**

- a) Bidder shall warrant that the equipment including software, hardware, firmware and associated documentation are free of defects in material and workmanship and from defects or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, for a period of **60 months** from the date of final acceptance by the purchaser after completion of **30 days** trouble free operation.
- b) With respect to defects in equipment part, Bidder's liability is to make good by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment within **next working day**.
- c) During the warranty period, the bidder shall upgrade the firmware of the modules with the latest available. This activity shall be carried out free of cost at site as and when the patches are released. Sample testing for the operation of devices and associated equipment shall be carried out after the Upgradation of any software.
- d) After replacement of the faulty equipment, the purchaser shall return parts that are defective to the Bidder. The Bidder shall cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered to the purchaser's facility CIF (Cost, Insurance, and Freight) free of charge.

- e) With respect to software, the purchaser shall notify the problem to the Bidder, including a detailed description of the deficiency and associated condition. Bidder shall guide the purchaser for corrective action. If the same is not resolved, the Bidder shall depute his personnel to attend the same within 24 hours whichever is earlier from the time of reporting the problem. The system Bidder shall be fully responsible to resolve hardware and software deficiency reported by the purchaser.
- f) With respect to third-party software and consumable parts supplied, the Bidder shall make reasonable effort to obtain the best warranties possible from the sub-Vendor thereof and assign to the purchaser any such warranties to the extent that such warranties may be assigned to the purchaser.
- g) Bidder may consider longer warranties than included in these specifications.
- h) Bidder shall extend all warranties / guarantees to the purchaser, provided by sub- Vendors, of duration longer than that in this specification.

11.1 Upgrades & Modifications

- 11.1.1 Bidder shall continuously keep the Purchaser informed of all Software and Hardware upgrades as & when these are released.
- 11.1.2 Bidder shall supply upgrades of all installed software (both own and third party) for a period of seven years from the date of system acceptance without any commercial implication.
- 11.1.3 Bidder shall rectify all design defects and software bugs at no extra cost for a period of 5 years from the date of system acceptance
- 11.1.4 Bidder shall provide lifetime support (10 years) for the system, even if no upgrades are implemented.
- 11.1.5 The system referred to above includes Bidder's own as well as third party components.
- 11.1.6 Bidder shall port the supplied software onto upgraded hardware (as per Bidder's standard offerings) without additional Software License Fees.

11.2 Currency of the Equipment:

- 11.2.1 Bidder must offer equipment's which are latest and released not more than 5 years before the date of execution of the contract. The offered equipment should be such that it should not be declared as End of life within period of 10 years from the date of the order execution.
- 11.2.2 Bidder should submit OEM signed and stamped letter mentioning the following:
 - a) Currency of the offered equipment.
 - b) Commitment for support for 5 years warranty.
 - c) System non compromise (Cyber security) compliance since its launch,
- 11.2.3 In case of bidder discontinuing offered system within the warranty period and installed equipment's going faulty and no replacement available. Equipment installed will have

replaced by the latest version complying with same specifications at no extra cost to TATA Power

12.0 DATA SUBMISSION BY BIDDER

Bidder shall submit the following information along with the Technical Bid

12.1 Along with Bid:-

- 12.1.1 Bidder to submit technical data sheet of the critical equipment, architecture drawing along with the technical offer.
- 12.1.2 Bidder to only provide compliance for other data sheets covered in the specification. However bidder to note that, all data sheets and detailed GTP are required to be submitted during detailed engineering for the approval and finalization by Tata Power.
- 12.1.3 Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality Plan (FQP)
- 12.1.4 General Arrangement Drawings for equipment offered
- 12.1.5 Catalogues of the equipment's offered
- 12.1.6 Detailed Bill of Material with make, model and quantity
- 12.1.7 Product life cycle document for all supplied equipment.
- 12.1.8 List of major relevant experiences of the Principal, Collaborator and the Product respectively.
- 12.1.9 Technical support facilities including qualified man-power, testing tools and instruments and integration facilities available within India preferably Mumbai should have major support centre..
- 12.1.10 Confirmation on lifetime, spares, manufacturing, onsite & Offsite technical support of the supplied equipment for the period of 15 years.
- 12.1.11 The Bidder shall give an undertaking to provide full range of local services (including hardware and software maintenance, modifications and upgrade support) for the life of the delivered Communication system
- 12.1.12 All deviations from the specifications shall be set out by the Bidder, clause by clause, with due justifications along with the offer; failing which the offer shall be deemed to conform to Tata Power specifications in all respects
- 12.1.13 Bidder to submit all relevant test certificates of the offered equipment for technical evaluation
- 12.1.14 Bidder to submit Cyber security related test certificates (from accredited Labs) of the offered equipment for technical evaluation.
- 12.1.15 Bidder to submit stamped detailed technical specifications.

12.2 After Award of Contract

The following documents shall be submitted for Tata Power approval during detailed engineering:

- 12.2.1 Bidder to submit all datasheets, detailed GTP of the proposed BOM items during detailed engineering for the approval and finalization by Tata Power.
- 12.2.2 System Architecture Drawing. This drawing should show in detail of the following:
 - i. Network connections
 - ii. Protocol used
 - iii. Type of interconnecting cable
- 12.2.3 Panel GA and Complete wiring diagram
- 12.2.4 Functional Design Specification document
- 12.2.5 Step by Step test procedures for Factory Acceptance Test (FAT) and Site Acceptance Test (SAT)
- 12.2.6 Interconnection Schedule (ICS) for Communication system (e.g. ICS for all field equipment, system).
- 12.2.7 Hardware, Software and Application manuals for all the equipment supplied including that of third parties.
- 12.2.8 All Software Licenses (both own & third party), key for Hardware Locks
- 12.2.9 All interoperability tables
- 12.2.10 Guaranteed technical parameters & Guaranteed availability and reliability
- 12.2.11 Calculation for power supply dimensioning
- 12.2.12 Bill of Material listing equipment designation, make, type ratings, etc. of all the equipment's supplied
- 12.2.13 Logic Diagram (Hardware & Software)
- 12.2.14 Operator's Manual
- 12.2.15 Complete documentation of implemented protocols between various elements
- 12.2.16 Diagnostic and performance evaluation software and hardware tools
- 12.2.17 Details of software (Operating systems, application software, engineering tools, communication systems management software, license details, I/O distribution protocol-wise etc.)
- 12.2.18 Final as built drawings of all communication system as final documents in AutoCAD & PDF format
- 12.2.19 Other documents as may be required / applicable during detailed engineering
- 12.2.20 All drawings and data shall be annotated in English.

Bidder shall furnish six (6) hardcopies and 3 soft copies on reliable media of all drawings, manuals (Administration, Operation & Maintenance, Troubleshooting and Installation), Technical catalogues, Test Certificates and Acceptance Test Reports.

Two copies of the internal test report, FAT and SAT documents with test protocol formats shall be submitted for approval at least 4 weeks before Factory Acceptance Test. Two copies of SAT protocol shall be submitted for approval at least two weeks before Site Acceptance Test.

Bidder shall also furnish Original plus one copy of all System Software (OS, Application and tools) along with delivery. Bidder shall submit two copies of all the configuration, application, display, database backup of all equipment on reliable secondary media.

13.0 ANNEXURES

Annexure - 1

Bill of Material (Indicative) Communication (Refer attachment)

1	Layer 2 switches consisting of : each switch with- a) 48 copper ports 1Gbps/10Gbps SFP/SFP+. b) Minimum 4 QSFP+ Ports, 40 Gbps. c) Power supply module - 230VAC with power cable(5A), C13/C14 per switch - 2No d) USB compatible console cable. e) Accessory kit & Rack mounting kit. f) Software license for OS g) 10Gbps SFP+, MM,850 nm-10Nos h) 40Gbps QSFP, MM, DAC cable compatible with Cisco-4Nos i) Stacking of switches on FO with equivalent SFP	2 Nos
---	---	-------

Services

Sr. No.	Item	Item Description	Qty
1	L2 Network Switch	Installation & Commissioning of L2 switches across proposed transmission stations & migration of services a)Installation ,commissioning, migration, performance testing and handing over of complete network. b) Integration with existing IT WAN network. c)End to end connectivity testing of network with DC & DR network. d) FAT and SAT to the purchaser's satisfaction and demonstration of System Response e) Preparation of ICS, Submission of As-built drawings	2Nos



RFQ No.: 4100052383

ANNEXURE VIII
Inspection Test Plan

NA



RFQ No.: 4100052383

Annexure IX
General Conditions of Contract

Attached as Annexure to this document

CONFIDENTIAL



RFQ No.: 4100052383

Annexure X
Manufacturers Authorization Form

Date:

Tender Enquiry No.:

To,
Chief (Procurement & Stores)
Tata Power Company Limited, Mumbai

Dear Associate,

Whereas M/s. [name of OEM], who are official manufacturers of..... having factories at [Address of OEM] do hereby authorize M/s [name of bidder] to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the following Goods, manufactured by us and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with the Special Conditions of Contract or as mentioned elsewhere in the Tender Document, with respect to the Goods offered by the above firm in reply to this Invitation for Bids.

We hereby confirm that in case, the channel partner fails to provide the necessary services as per the Tender Document referred above, M/s [name of OEM] shall provide standard warranty on the materials supplied against the contract. The warranty period and inclusion / exclusion of parts in the warranty shall remain same as defined in the contract issued to their channel partner against this tender enquiry

Yours Sincerely,

For

Authorized Signatory

The Tata Power Company Limited is hereunder referred to as the “Purchaser” or “Company”. The person, firm or company selling the goods, the subject of this purchase order is referred to as “Vendor” or “Contractor”. The subject of this purchase order is hereinafter referred to as the “Material(s)” or “Goods”.

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

1. Purchase Order (with ‘Commercial Notes’ and Annexures to the Purchase Order referred thereon)
2. Technical Specifications.
3. General Terms & Conditions

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.

1. Price:

Unless otherwise specifically stipulated, the price shall be firm and shall not be subject to escalation for any reason till the validity of this Contract.

Unless otherwise specifically stipulated, the price shall be inclusive of road/ rail worthy water-proof packing & forwarding charges up to effecting delivery at FOT/ FOR despatch point, GST and shall also be inclusive of inland freight, terminal taxes and entry taxes as leviable on the transportation or entry of goods into any local area limits pursuant to the Contract.

2. Taxes and Duties:

- 2.1 The Contract Price shall be inclusive of all taxes, duties, including but not limited to GST or any local taxes, levies imposed by State/Central/Local governments
- 2.2 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
- 2.3 However the payment of GST or local levies shall be restricted to the total amount as indicated in the price schedule.
- 2.4 Any duties, levies or taxes not mentioned in Contract Price or Price Schedule but applicable as per any statute (s) shall be deemed to be

Rev. date: 25 July 2017

included in the Contract price and shall be to the account of the Contractor.

- 2.5 Any statutory variation in duties, levies or taxes if applicable and specified in this Contract till the scheduled date for supply of Goods and limited to direct invoices of the Contractor shall be to the account of Purchaser. 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 supply of goods to claim the difference.
- 2.6 The Contractor shall pass on to the Purchaser 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.
- 2.7 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.
- 2.8 For facilitating availment of a credit, set-off, rebate, drawback or like benefit available to the Purchaser, the Contractor will facilitate the Purchaser by providing the necessary documentary and/or procedural support. In any process of assessment or re-assessment, of taxes payable by the Purchaser. Wherever expressly agreed the purchaser would provide the statutory form ‘C’ to the seller for availing the concessional rate of Central sales tax.
- 2.9 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.
- 2.10 Purchaser shall pay the invoices to the Vendor after necessary deductions as prescribed under the applicable law, income – tax or other

deductions under the State Tax laws as may be applicable to the Contract.

3 Packing details:

Packing details: The material must be packed in suitable packing to suit the mode of transport and to ensure its safe receipt at point of delivery. Any damage to material noticed at the time of delivery at site, due to improper packing or any other reason whatsoever shall be the responsibility of the Vendor. Such damaged goods shall be replaced within 14 days from intimation from the Purchaser.

4 Transportation and Unloading at Site:

The Vendor shall deliver the Material(s) at site/ Stores as per the delivery address specified in the Purchase order. The unloading at delivery shall be organised by the Purchaser unless otherwise specified. The receipt of the material/ equipment is subject to inspection and rejection if Material(s) is found unsatisfactory or any of the clauses under this purchase order are violated.

5 Insurance:

Unless otherwise specified, Purchaser will be responsible to obtain transit insurance for the Material(s). The Vendor shall intimate the Order Manager (as mentioned in the Purchase Order) along with Invoice, packing list, the Railway Receipt/Truck or Lorry Receipt etc. immediately after the consignment is booked, at the e-mail id mentioned in the Purchase order.

6 Payment Terms:

100% payment shall be made within 60 days from the receipt and acceptance of the material at the Consignee Stores/ Site/ Location as per the Contractual terms and conditions herein.

7 Bills and invoice:

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.

8 Transfer of Title and risk:

The transfer of property and risk of Material(s) shall be deemed to take place as follows:

- a. For delivery F.O.R. or F.O.T. despatch point: Transfer of property on handing over the Material(s) to the carrier against receipt of clean Railway Receipt/Truck or Lorry Receipt and such receipt having been handed over to Purchaser. However, the risk of loss shall pass to the Purchaser on delivery of goods at the specified destination.
- b. In case the Material(s) are procured by the Vendor from sub-vendors on receipt of duly endorsed documents of title to the goods.

9 Contract Performance Bank Guarantee (In case applicable):

9.1 The Vendor shall within 15 days of issue of this Purchase Order furnish an unconditional irrevocable bank guarantee duly stamped and strictly as per the prescribed format of the Purchaser from any nationalized bank or any scheduled bank having a branch in Mumbai and approved by the Purchaser for a sum equivalent to 10% of the Total value of Order valid for a period not less than 6 months from the expiry of the Warranty period.

9.2 Irrespective of the performance demonstrated as part of the Factory Acceptance Tests Take-over tests / Performance Tests etc, the Purchaser may call for re-validation of performance of the system during the performance guarantee period by conducting fresh performance tests if in its opinion, the

system is not able to deliver the designed performances based on its operational performance results. If the equipment fails to prove the performance during such performance tests, the Purchaser may allow the Vendor to either rectify the system by addition / modification of equipment etc at the Vendor's costs & risk to restore the performance levels. Failure to rectify the system to achieve the designed performance levels may result in imposition of penalties including revocation of the Performance Bank Guarantee and forfeiture of the entire amount under the Performance Guarantee.

- 9.3 In case the Vendor fails to furnish the requisite Bank Guarantee as stipulated above, then the Company shall have the option to terminate the contract besides other contractual remedies.

10 Price reduction:

- 10.1 The Vendor agrees that time of supply of Material(s) is of prime importance. If the Vendor fails to supply Material(s) before the respective scheduled / fixed date for supply. Company may without prejudice to any other right or remedy available to the Company: -

10.1.1 Recover from the Vendor ascertained and agreed, genuine pre-estimate liquidated damages, and not by way of penalty, a sum equivalent to 1% (of total value of order) per week or part thereof for each week's delay, beyond the scheduled supply date each subject to maximum of 10% of the total order value, even though the Company may accept delay in supply after the expiry of the scheduled supply date. The Company may, at its discretion, set off the aforesaid amounts from any other amounts owed by the Company to the Vendor or recover such amounts in other manner as may be permissible under applicable laws.

10.1.2 Arrange to get supply from elsewhere on account and at the sole risk of the Vendor, such decision of the Company being final and binding on the Vendor; or

10.1.3 Terminate the contract or a portion of supply of the supply work thereof, and if so desired, arrange for the supply in default by the Vendor to be attained from elsewhere at the sole risks and costs of the Vendor.

- 10.2 Liquidated damages for performance shortfall (if applicable) shall be specified in the Technical Specifications.

- 10.3 The Liquidated Damages referred in this clause 10 may be recovered by the Company from the Vendor as set off against any monies owed by the Company to the Vendor or in any other manner permissible under applicable laws.

11 Warranties:

- 11.1 Materials and Workmanship: Vendor shall fully warrant that all the stores, equipment and component supplied under the order shall be new and of first class quality according to the specifications and shall be free from defects (even concealed fault, deficiency in design, materials and workmanship).

- 11.2 Should any defects be noticed in design, material and/or workmanship within 12 months after the Material(s) or any portion thereof as the case may be have been commissioned or for 24 months from the date of delivery, whichever period concludes earlier. Purchaser shall inform Vendor and Vendor shall immediately on receipt of such intimation, depute their personnel within 7 days to investigate the causes of defects and arrange rectification/ replacement/modification of the defective equipment at site, without any cost to Purchaser within a reasonable period. If the Vendor fails to take proper corrective action to repair/replace defects satisfactorily within a reasonable period, Purchaser shall be free to take such corrective action as may be deemed necessary at Vendor's risk and cost after giving notice to the Vendor, including arranging supply of the Goods from elsewhere at the sole risk and cost of the Vendor.

- 11.3 In case defects are of such nature that equipment shall have to be taken to Vendor's work for rectification etc., Vendor shall take the equipment at his costs after giving necessary undertaking or security as may be required by Purchaser. After repair Vendor shall deliver the equipment at site on freight paid basis. Any taxes applicable in relation to this repair shall be to the Vendor's account. All risks in transit to and fro shall be borne by the Vendor.

- 11.4 Equipment or spare parts thereof replaced shall have further warranty for a period of 12 months from the date of acceptance.

12 Quality, Testing, inspection, installation:

- 12.1 All Material(s) supplied under this Contract shall be new and unused.

12.2 Wherever a specific Quality Assurance Plan is provided with the Request for Quotation (RFQ) or agreed as part of the commercial/ technical discussions, the same shall be binding on the Vendor.

12.3 The material shall be inspected

- a. At consignee end by Purchaser.
- b. At factory premise of the Vendor/ sub-vendor by Purchaser or third party duly nominated by Purchaser. The Vendor shall extend all necessary co-operation to Purchaser/ third party inspector carrying out the inspection. The Inspector(s) shall have the right to carry out the inspection or testing, which will include inspection and testing of the raw materials at manufacturers shop, at fabricators shop and at the time of actual despatch before and/or after completion of packing.

12.4 The Vendor will inform Purchaser at least eight (8) days in advance of the exact place, date and time of tendering the Material(s) for required inspection and provide free access to the Inspector(s) during normal working hours at Vendor's or his/ its sub-Suppliers works, and place at the disposal of the Inspector(s) all useful means for undertaking the Inspection, checking the results of tests performed, marking the Material(s), getting additional tests conducted and final stamping of the Material(s).

12.5 Even if the inspection and tests are fully carried out, the Vendor shall not be absolved from its responsibilities to ensure that the Material(s), raw materials, components and other inputs are supplied strictly to conform and comply with all the requirements of the Contract at all stages, whether during manufacture and fabrication, or at the time of Delivery as on arrival at site and after its erection or start up or consumption, and during the defect liability period. The inspections and tests are merely intended to prima facie satisfy Purchaser that the Material(s) and the parts and components comply with the requirements of the Contract.

12.6 *All costs associated with the inspection shall be included in cost of Material(s).*

12.7 Original material test certificate/ performance test certificate/ fitment certificate/ test reports etc. relevant/ applicable as per the

specifications/ standards shall be dispatched along with the material supply failing which the material may be rejected.

13 Rejection:

13.1 Rejected goods shall be removed and replaced within 14 days of the date of communication of rejection.

13.2 Claim in respect of breakage/shortages in any cases shall be referred on the Vendor within ninety (90) days from the date of receipt of Goods by the Purchaser which shall be replaced/made good by the Vendor at his own cost. All risk of loss or damage to the material shall be upon the Vendor till it is delivered to the purchaser/consignee.

14 General Indemnity:

The Vendor shall indemnify and keep the Purchaser 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, performance of the obligations hereunder, or any representation or misrepresentation made by the Vendor or any third party with regard to the subject of this Contract.

15 Indemnity against IPR:

The equipment, system, drawings, and other materials that shall be supplied against the order will become the Purchaser's property. Without limitation of any liability of whatsoever nature, the Purchaser 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 Vendor. 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 Vendor's design, manufacture, use, supply or re-supply & would also cover use or sale of any article or material supplied by the Vendor to the Purchaser under the Purchase Order. The Indemnity shall cover any claim/action taken by a third party either directly against the Purchaser or any claim/action made against the Vendor & 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 Purchaser in relation to the Purchase Order.

16 Latent Defects Liability period (if applicable):

Notwithstanding the inspections, acceptance tests, quality checks etc carried out by the Vendor and witnessed/accepted by the Purchaser, the Vendor shall further warrant the equipment for any latent defects in its design, material or workmanship against the specifications set forth and shall make good any such defects by way of repair or replacement of the part or whole of the defective product at its own cost & risks as and when such latent defects are observed and intimated by the Purchaser and intimated to the Vendor within 36 months of completion of warranty period.

17 Force Majeure:

- 17.1 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.
- 17.2 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.
- 17.3 During the period, the obligations of the parties are suspended by force majeure, the contractor shall not be entitled to payment of any rate.
- 17.4 In the event of the force majeure conditions continuing or reasonably expected to continue for a period more than thirty (30) days, Purchaser shall have the option of terminating the contract by giving seven (7) days notice thereof to the contractor.

18 Variation:

Except for any provisions in this Purchase Order, any change /modification to the terms and conditions of this Order can be issued only by Purchaser or with the prior written approval from Purchaser.

19 Termination

- 19.1 The Contract shall be deemed to be terminated on completion of delivery of Material(s)
- 19.2 Termination of Default by Vendor:
Purchaser may terminate the contract at any time if the Vendor fails to carry out any of his obligations including timely delivery under this Contract. Prior to termination, the Vendor 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 Vendor fails to bring about the improvement to the satisfaction of the Purchaser, then the order shall be terminated.
- 19.3 Without prejudice to the rights and remedies available to Purchaser, Purchaser may terminate the Contract or part thereof with immediate effect with written notice to the Vendor if,:
- 19.3.1 The Vendor becomes bankrupt or goes into liquidation.
- 19.3.2 The Vendor makes a general assignment for the benefit of creditors.
- 19.3.3 A receiver is appointed for any substantial property owned by the Vendor.
- 19.3.4 The Vendor has misrepresented to Purchaser, acting on which misrepresentation Purchaser has placed the Purchase Order on the Vendor.

The Vendor/ Contractor shall not be entitled to any further payment under the Contract if the Contract is terminated. If the order is terminated under clause 19.2 and 19.3, the Vendor shall not be entitled to any further payment, except that, if Purchaser completes the supply of Material(s) and the costs of completion are less than the Total Order value, the Purchaser shall pay Vendor an amount properly allocable to supply of Material(s) fully performed by Vendor prior to termination for which payment was not made to Vendor. In case, the cost of completion of Material(s) exceed the total Order value, the additional cost incurred by Purchaser for such completion shall be paid by the Vendor.

19.4 Purchaser 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:

- 19.4.1 cease all further work, except for such work as may be necessary and instructed by the Company/ Company's representative for the purpose of protecting those parts of the supplies already manufactured;
- 19.4.2 stop all further sub-contracting or purchasing activity, and terminate Sub-contracts;
- 19.4.3 handover all Documents, equipment, materials and spares relating to the supply of goods prepared 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
- 19.4.4 handover those parts of the supplies manufactured by the Contractor up to the date of termination.

Upon termination pursuant to clause 19.4, the Vendor shall be entitled to be paid the full value on the Material(s) delivered in accordance with the Contract.

19.5 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.

20 Sub letting and assignment:

The contractor shall not without prior consent in writing of the Purchaser, 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.

21 Dispute Resolution:

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.

22 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.

23 Jurisdiction

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

24 Limitation of Liability

Notwithstanding anything contained in the Contract, the Contractor's aggregate liability under this Contract shall be limited 100% of the Total order value. This shall however, exclude liability arising pursuant to clause 2.8- tax indemnity, clause 14- General Indemnity, clause 15- Indemnity against IPR, clause 25 – Confidentiality and liabilities arising due to wilful misconduct, gross negligence, third party claims and corrupt acts attributable to the Vendor.

25 Confidentiality:

The Vendor shall use the Confidential Information of the Purchaser only in furtherance of this Contract and shall not transfer or otherwise disclose the Confidential Information to any third party. The Vendor 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.

26 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 Purchase Order.

27 New Legislation (The Micro, Small and Medium Enterprise Development Act 2006)

- a. This Act has been enacted and made effective from 2nd October 2006. The Interest on Delayed Payments to Small Scale and Ancillary Industrial Undertaking Act, 1993 is repealed.
- b. Vendor is requested to inform the purchaser if vendor fall under The Micro, Small and Medium Enterprises Development Act, 2006 legislation and provide the purchaser, registration number and date to enable purchaser to take necessary care. The vendors are also requested to mention the same on their invoice / bill.

28 Relation between parties:

The Purchase Order shall be entered into on a principal-to-principal basis only. The Purchase order 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 Vendor 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.

29 Environment / ISO 14001 Certification:

The Vendor to confirm whether their organization is ISO 14001 certified. If not, the Vendor 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 Vendor 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 Vendor 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 Tata Code of Conduct

The Purchaser abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Purchaser and the Vendor for dealings under this Purchase Order. A copy of the Tata Code of Conduct is available at our website: <http://www.tatapower.com/aboutus/code-of-conduct.aspx>. The Vendor is requested to bring any concerns regarding this to the notice of our Chief Ethics Officer on the e-mail ID: cecounsellor@tatapower.com.

31 Responsible Supply Chain Management:

The Purchaser is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy. The Vendor is required to comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations. The Purchaser 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 Vendor is required to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy.

A copy of the Responsible Supply Chain Management 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>.

Vendor/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.

32 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.

33 Vendor Feedback:

- 33.1 In this dealing Vendors feedback is important for the purchaser to improve its processes. If vendor have to report any grievance, problem or require any clarification, information, vendor is requested to contact purchaser at email ID: CC_CUSTOMERFEEDBACK@tatapower.com
- 33.2 Vendor 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. Vendor performance with

respect to the said factors will be taken into consideration for future business.

34 Non-Waiver:

Failure of Purchaser 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 Vendor 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 Vendor and shall not be deemed a waiver of any right of Purchaser to insist upon the strict performance thereof or of any of its rights or remedies as to any 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 Purchaser or its representative(s) act as waiver of the terms hereof.

35 Repeat Order:

Purchaser may place the repeat order for 100% of ordered quantities within a span of 6 months from the date of issue of this Purchase Order & Vendor shall execute it at same rates, terms and conditions.

36 Severability

If any provision of this Contract is invalid, unenforceable or prohibited by law, this Contract shall be considered divisible as to such provision and such provision shall be inoperative and shall not be part of the consideration moving from any Party hereto to the others, and the remainder of this Contract shall be valid, binding and of like effect as though such provision was not included herein.

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

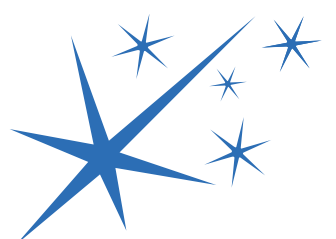
- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the 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 Tohmatu India LLP, 6 floor, AIPL Business, Sector 62, Gurugram, Haryana 122102

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

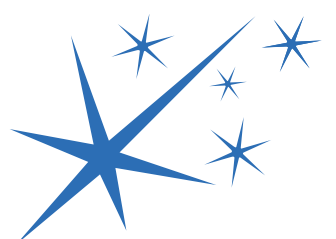
- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the 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.

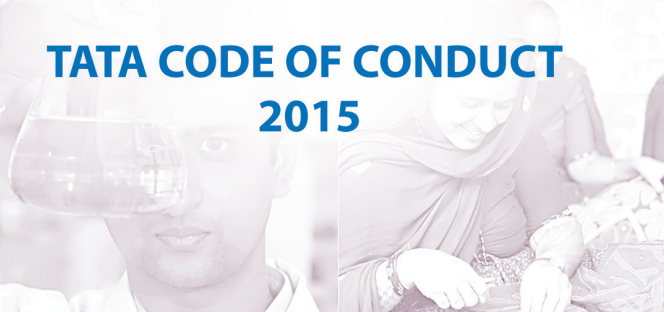
Don’ts

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



TATA CODE OF CONDUCT 2015



LEADERSHIP THAT INSPIRES

For over 100 years, the Tata group has been led by visionaries who have stayed true to the vision of the founder, Jamsetji Tata.

A vision that placed the greater good of society at par with business growth.

A vision that put into practice pioneering social initiatives that changed the way responsible business was run.

And a vision that brought into the group a strong social conscience.



We do not claim to be more unselfish, more generous or more philanthropic than other people. But we think we started on sound and straightforward business principles, considering the interests of the shareholders our own, and the health and welfare of the employees, the sure foundation of our success.

Jamsetji Tata
Founder of the Tata group
Chairman (1868 – 1904)

CONTENTS

Foreword	3
A Our values	4
B Scope and purpose of this Code	5
C Our core principles	7
D Our employees	9
E Our customers	18
F Our communities and the environment	21
G Our value-chain partners	23
H Our financial stakeholders	25
I Governments	27
J Our group companies	29
Raising concerns	30
Accountability	31
Acknowledgement sheet	33

FOREWORD

Tata companies have consistently adhered to the values and ideals articulated by the Founder for over 150 years. The Tata Code of Conduct was first formalized by Mr Ratan Tata. It articulates the Group's values and ideals that guide and govern the conduct of our companies as well as our colleagues in all matters relating to business. Today, the Code is a bedrock on which we base our individual, as well as leadership commitments to core Tata values.

The Tata Code of Conduct outlines our commitment to each of our stakeholders, including the communities in which we operate, and is our guiding light when we are sometimes faced with business dilemmas that leave us at ethical crossroads. The Code is also dynamic in that it has been periodically refreshed in order to remain contemporary and contextual to the changes in law and regulations. However it remains unaltered at its core.

Our stellar reputation and success as a business entity has been defined by the powerful commitment and adherence to the core values and principles expressed in this Code, by all our employees, directors and partners. I trust every Tata colleague and Tata company will continue to not only comply with the laws and regulations that govern our business interests around the world, but will continue to set new standards of ethical conduct that will generate deep respect and inspire emulation by others.

N. Chandrasekaran

21st February, 2017



A. OUR VALUES

TATA has always been values-driven. The five core values that underpin the way we conduct our business activities are:



These universal values serve as the foundation for the Tata Code of Conduct. They find expression within the value system of every Tata company.

B. SCOPE AND PURPOSE OF THIS CODE

1. This Code sets out how we behave with:
 - our employees, or those who work with us;
 - our customers;
 - the communities and the environment in which we operate;
 - our value-chain partners, including suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents;
 - our joint-venture partners or other business associates;
 - our financial stakeholders;
 - the governments of the countries in which we operate; and
 - our group companies.
2. In this Code, “we or us” means our company, our executive directors, officers, employees and those who work with us, as the context may require.
3. The term “our group companies” in this Code typically means companies Tata Sons intends for this Code to apply to, and / or to whom Tata Sons has issued this Code.
4. This Code sets out our expectations of all those who work with us. We also expect those who deal with us to be aware that this Code underpins everything we do, and in order to work with us they need to act in a manner consistent with it.

REMEMBER...

It is our commitment to protect our reputation and our brand equity by adhering to the values and principles set out in this Code. By doing so, we strengthen our unique culture and identity.

OUR CORE PRINCIPLES



The Tata philosophy of management has always been, and is today more than ever, that corporate enterprises must be managed not merely in the interests of their owners, but equally in those of their employees, of the consumers of their products, of the local community and finally of the country as a whole.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

C. OUR CORE PRINCIPLES

1. We are committed to operating our businesses conforming to the highest moral and ethical standards. We do not tolerate bribery or corruption in any form. This commitment underpins everything that we do.
2. We are committed to good corporate citizenship. We treat social development activities which benefit the communities in which we operate as an integral part of our business plan.
3. We seek to contribute to the economic development of the communities of the countries and regions we operate in, while respecting their culture, norms and heritage. We seek to avoid any project or activity that is detrimental to the wider interests of the communities in which we operate.
4. We shall not compromise safety in the pursuit of commercial advantage. We shall strive to provide a safe, healthy and clean working environment for our employees and all those who work with us.
5. When representing our company, we shall act with professionalism, honesty and integrity, and conform to the highest moral and ethical standards. In the countries we operate in, we shall exhibit culturally appropriate behaviour. Our conduct shall be fair and transparent and be perceived as fair and transparent by third parties.
6. We shall respect the human rights and dignity of all our stakeholders.
7. We shall strive to balance the interests of our stakeholders, treating each of them fairly and avoiding unfair discrimination of any kind.
8. The statements that we make to our stakeholders shall be truthful and made in good faith.
9. We shall not engage in any restrictive or unfair trade practices.
10. We shall provide avenues for our stakeholders to raise concerns or queries in good faith, or report instances of actual or perceived violations of our Code.
11. We shall strive to create an environment free from fear of retribution to deal with concerns that are raised or cases reported in good faith. No one shall be punished or made to suffer for raising concerns or making disclosures in good faith or in the public interest.
12. We expect the leaders of our businesses to demonstrate their commitment to the ethical standards set out in this Code through their own behaviour and by establishing appropriate processes within their companies.
13. We shall comply with the laws of the countries in which we operate and any other laws which apply to us. With regard to those provisions of the Code that are explicitly dealt with under an applicable law or employment terms, the law and those terms shall take precedence. In the event that the standards prescribed under any applicable law are lower than that of the Code, we shall conduct ourselves as per the provisions of the Code.

REMEMBER...

“Good faith” means having a reasonable belief that the information you have provided is truthful. It does not mean having ‘all the evidence’ about the potential violation or case reported.

OUR EMPLOYEES



Once you got the best people, the people who shared our values and ideals, we left them free to act on their own. We do not fetter them. We encourage them and give them opportunities for leadership.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

D. OUR EMPLOYEES

Equal opportunity employer

1. We provide equal opportunities to all our employees and to all eligible applicants for employment in our company. We do not unfairly discriminate on any ground, including race, caste, religion, colour, ancestry, marital status, gender, sexual orientation, age, nationality, ethnic origin, disability or any other category protected by applicable law.
2. When recruiting, developing and promoting our employees, our decisions will be based solely on performance, merit, competence and potential.
3. We shall have fair, transparent and clear employee policies which promote diversity and equality, in accordance with applicable law and other provisions of this Code. These policies shall provide for clear terms of employment, training, development and performance management.

Q&A

A job requirement entails extensive travel. One of the candidates has excellent relevant experience and qualifications. However, this candidate is a single parent. As a result, I feel such a situation would significantly hinder this candidate's ability to cope with the job requirement. What should I do?

In accordance with the Code, the decision to recruit an employee should be based upon merit. We cannot make a presumption that the candidate would not be able to meet the travel requirements of the job. All eligible candidates should be provided with equal opportunity to demonstrate or justify that they can cope with the travel requirements of the job. Being a single parent cannot be a ground to be discriminated against at any stage of recruitment or ongoing employment in our company.

REMEMBER...

We do not tolerate harassment in any form and therefore we expect every employee to discourage such misdemeanours in the workplace.

Dignity and respect

4. Our leaders shall be responsible for creating a conducive work environment built on tolerance, understanding, mutual cooperation and respect for individual privacy.
5. Everyone in our work environment must be treated with dignity and respect. We do not tolerate any form of harassment, whether sexual, physical, verbal or psychological.
6. We have clear and fair disciplinary procedures, which necessarily include an employee's right to be heard.
7. We respect our employees' right to privacy. We have no concern with their conduct outside our work environment, unless such conduct impairs their work performance, creates conflicts of interest or adversely affects our reputation or business interests.

Human rights

8. We do not employ children at our workplaces.
9. We do not use forced labour in any form. We do not confiscate personal documents of our employees, or force them to make any payment to us or to anyone else in order to secure employment with us, or to work with us.

Bribery and corruption

10. Our employees and those representing us, including agents and intermediaries, shall not, directly or indirectly, offer or receive any illegal or improper payments or comparable benefits that are intended or perceived to obtain undue favours for the conduct of our business.

REMEMBER...

Violation by even a single employee of any law relating to anti-bribery, anti-corruption, anti-competition, data privacy, etc. could result in severe financial penalties and cause irreparable reputational damage to the company.

Gifts and hospitality

11. Business gifts and hospitality are sometimes used in the normal course of business activity. However, if offers of gifts or hospitality (including entertainment or travel) are frequent or of substantial value, they may create the perception of, or an actual conflict of interest or an 'illicit payment'. Therefore, gifts and hospitality given or received should be modest in value and appropriate, and in compliance with our company's gifts and hospitality policy.

Freedom of association

12. We recognise that employees may be interested in joining associations or involving themselves in civic or public affairs in their personal capacities, provided such activities do not create an actual or potential conflict with the interests of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

REMEMBER...

As a general rule, we may accept gifts or hospitality from a business associate, only if such a gift:

- has modest value and does not create a perception (or an implied obligation) that the giver is entitled to preferential treatment of any kind;
- would not influence, or appear to influence, our ability to act in the best interest of our company;
- would not embarrass our company or the giver if disclosed publicly.

The following gifts are never appropriate and should never be given or accepted:

- gifts of cash or gold or other precious metals, gems or stones;
- gifts that are prohibited under applicable law;
- gifts in the nature of a bribe, payoff, kickback or facilitation payment*;
- gifts that are prohibited by the gift giver's or recipient's organisation; and
- gifts in the form of services or other non-cash benefits (e.g. a promise of employment).

(*'Facilitation' payment is a payment made to secure or speed up routine legal government actions, such as issuing permits or releasing goods held in customs.)

Working outside employment with us

13. Taking employment, accepting a position of responsibility or running a business outside employment with our company, in your own time, with or without remuneration, could interfere with your ability to work effectively at our company or create conflicts of interest. Any such activity must not be with any customer, supplier, distributor or competitor of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

Integrity of information and assets

14. Our employees shall not make any wilful omissions or material misrepresentation that would compromise the integrity of our records, internal or external communications and reports, including the financial statements.
15. Our employees and directors shall seek proper authorisation prior to disclosing company or business-related information, and such disclosures shall be made in accordance with our company's media and communication policy. This includes disclosures through any forum or media, including through social media.
16. Our employees shall ensure the integrity of personal data or information provided by them to our company. We shall safeguard the privacy of all such data or information given to us in accordance with applicable company policies or law.
17. Our employees shall respect and protect all confidential information and intellectual property of our company.
18. Our employees shall safeguard the confidentiality of all third party intellectual property and data. Our employees shall not misuse such intellectual property and data that comes into their possession and shall not share it with anyone, except in accordance with applicable company policies or law.
19. Our employees shall promptly report the loss, theft or destruction of any confidential information or intellectual property and data of our company or that of any third party.

Q&A

I am an accountant in the finance department of my company. Due to my artistic skills, I received an offer to pen cartoons for a children's publication for which I would receive compensation. I plan to undertake this activity during week-ends. What should I do before accepting this offer?

Before accepting the offer, you should ascertain whether the company policies and rules require you to make a disclosure to your supervisor so that the company may determine whether your undertaking this activity adversely affects our company's interests. On confirmation from the company that it does not do so, you would be free to take up the activity. It is also your duty to bring to the attention of the company whenever there is any change in the situation you have disclosed.

20. Our employees shall use all company assets, tangible and intangible, including computer and communication equipment, for the purpose for which they are provided and in order to conduct our business. Such assets shall not be misused. We shall establish processes to minimise the risk of fraud, and misappropriation or misuse of our assets.
21. We shall comply with all applicable anti-money laundering, anti-fraud and anti-corruption laws and we shall establish processes to check for and prevent any breaches of such laws.

Insider trading

22. Our employees must not indulge in any form of insider trading nor assist others, including immediate family, friends or business associates, to derive any benefit from access to and possession of price sensitive information that is not in the public domain. Such information would include information about our company, our group companies, our clients and our suppliers.

Q&A

Our company has recently announced the launch of a new business initiative. In connection with this, your friend who is a journalist with a leading business newspaper has asked you to provide some information that he could cover in his forthcoming article. He has promised not to quote you, or reveal your identity. Should you be giving him this information?

No. You should not be sharing information of this nature with the media, even if it is assured that the source would remain anonymous. Only authorised personnel in the company are permitted to speak to the media and provide information of this nature.

Our company has a “Use of Social Media” policy that lays down the “dos and don’ts” for use of social media even if you may access such media on your own time. Why is there such a policy?

External communication is a serious matter. It must be carefully managed because information put out with reference to our company or its businesses needs to be clear, truthful and not violate any undertakings we have given to other parties. In each business there are managers nominated to authorise and make different types of statements to the outside world. These managers should be consulted about any request for information you may receive or information you think we should give out.

In using social media, in particular blogs or social networking sites, you should exercise great caution while talking about our company or the business we do. It may feel like you are chatting with friends or expressing a personal opinion but even while doing so you cannot share any confidential information of our company.

REMEMBER...

We must respect the property rights of others by never misusing their assets, intellectual property or trade secrets, including the copying or downloading of unauthorised software, trademarks, copyrighted material or logos. We should never make unauthorised copies of computer software programs or use unlicensed personal software on company computers.

Prohibited drugs and substances

23. Use of prohibited drugs and substances creates genuine safety and other risks at our workplaces. We do not tolerate prohibited drugs and substances from being possessed, consumed or distributed at our workplaces, or in the course of company duties.

Conflicts of interest

24. Our employees and executive directors shall always act in the interest of our company and ensure that any business or personal association *including close personal relationships* which they may have, does not create a conflict of interest with their roles and duties in our company or the operations of our company. Further, our employees and executive directors shall not engage in any business, relationship or activity, which might conflict with the interest of our company or our group companies.
25. Should any actual or potential conflicts of interest arise, the concerned person must immediately report such conflicts and seek approvals as required by applicable law and company policy. The competent authority shall revert to the employee within a reasonable time as defined in our company's policy, so as to enable the concerned employee to take necessary action as advised to resolve or avoid the conflict in an expeditious manner.
26. In the case of all employees other than executive directors, the Chief Executive Officer / Managing Director shall be the competent authority, who in turn shall report such cases to the Board of Directors on a quarterly basis. In case of the Chief Executive Officer / Managing Director and executive directors, the Board of Directors of our company shall be the competent authority.

Q&A

You are responsible for maintaining our company's customer database. One of your friends is starting a business venture and requests you to share a few particulars from this database for marketing purposes of his business. He assures you that he would keep the data as well as his source confidential. Should you do so?

No. You should respect the confidentiality of customer information and not share any part of the database with any person without due authorisation.

You have access to revenue numbers of different business units of our company. While having a conversation with you over evening drinks, your friend enquires about the financial performance of our company. You do not share detailed information with your friend, but share approximate revenue figures. Is this conduct of yours correct?

No, it is not. You are not permitted to share financial information of our company with others who do not need to know this information. Financial information should always be safeguarded and disclosed only on a need-to-know basis after obtaining requisite approvals. Sharing of any price sensitive information that is not generally available with the public could also lead to violation of applicable insider trading laws.

27. Notwithstanding such or any other instance of conflict of interest that exists due to historical reasons, adequate and full disclosure by interested employees shall be made to our company's management. At the time of appointment in our company, our employees and executive directors shall make full disclosure to the competent authority, of any interest leading to an

actual or potential conflict that such persons or their immediate family (including parents, siblings, spouse, partner, children) or persons with whom they enjoy close personal relationships, may have in a family business or a company or firm that is a competitor, supplier, customer or distributor of, or has other business dealings with, our company.

REMEMBER...

A conflict of interest could be any known activity, transaction, relationship or service engaged in by an employee, his/her immediate family (including parents, siblings, spouse, partner, and children), relatives or a close personal relationship, which may cause concern (based upon an objective determination) that the employee could not or might not be able to fairly perform his/her duties to our company.

Examples of Potential Conflicts of Interest

A conflict of interest, actual or potential, arises where, directly or indirectly, an employee or executive director:

- (a) engages in a business, activity or relationship with anyone who is party to a transaction with our company;
- (b) is in a position to derive an improper benefit, personally or for any family member or for any person in a close personal relationship, by making or influencing decisions relating to any transaction;
- (c) conducts business on behalf of our company or is in a position to influence a decision with regard to our company's business with a supplier or customer where a relative of, or a person in close personal relationship with, an employee or executive director is a principal officer or representative, resulting in a personal benefit or a benefit to the relative;
- (d) is in a position to influence decisions with regard to award of benefits such as increase in salary or other remuneration, posting, promotion or recruitment of a relative or a person in close personal relationship employed in our company or any of our group companies;
- (e) undertakes an activity by which the interest of our company or our group companies can be compromised or defeated; or
- (f) does anything by which an independent judgement of our company's or our group companies' best interest cannot be exercised.

28. If there is a failure to make the required disclosure and our management becomes aware of an instance of conflict of interest that ought to have been disclosed by an employee or executive director, our management shall take a serious view of the

matter and consider suitable disciplinary action as per the terms of employment. In all such matters, we shall follow clear and fair disciplinary procedures, respecting the employee's right to be heard.

Examples of activities normally approved (post-disclosure) as per applicable company policy

Acceptance of a position of responsibility (whether for remuneration or otherwise) in the following cases would typically be permitted, provided the time commitments these demand do not disturb or distract from the employee's primary duties and responsibilities in our company, and are promptly disclosed to the relevant competent authority:

- (a) Directorships on the Boards of any of our group companies, joint ventures or associate companies.
- (b) Memberships/positions of responsibility in educational/professional bodies, where such association will promote the interests of our company.
- (c) Memberships or participation in government committees/bodies or organisations.

Q&A

You are in a relationship with a colleague who has been recently moved into your team and would now be reporting to you. What should you do?

Romantic or close personal relationships with another employee where a reporting relationship exists and one is responsible for evaluating the other's performance, is likely to create a conflict of interest. In such a situation, you would need to report the potential conflict to your supervisor.

Your company is submitting a proposal to a company in which you were previously employed. You have confidential information pertaining to your previous employer, which you believe will help your present employer in winning the contract. Should you share this information?

No. You should not share this information with your company since it relates to confidential information of a third party. Your company respects its employees' duty to protect confidential information that they may have relating to their previous employers.

You are the purchasing manager in the procurement department of your company. You receive an invitation from a supplier to attend a premier sporting event as her guest. This particular supplier is one of the vendors who has submitted a proposal for an open tender issued by your company. Should you accept the invitation?

No. You should not accept the invitation in this instance. Since you are in a key decision-making role for the tender, any unusual benefit that you receive could be perceived as an inducement that could compromise your objectivity.

OUR CUSTOMERS



We have continued to enjoy prosperity, even with adverse times to fight against.
 Our relations with all concerned are the most friendly. We have maintained the
 same character for straight-forward dealing with our constituents and customers.
 Our productions have continued to be of the same high quality, and therefore
 command the best reputation and realise the highest prices. ... I mention these
 facts only to point out that with honest and straight-forward business principles,
 close and careful attention to details, and the ability to take advantage of
 favourable opportunities and circumstances, there is a scope for success.

Jamsetji Tata

Founder of the Tata group
 Chairman, Tata Sons (1868 – 1904)

E. OUR CUSTOMERS

Products and services

1. We are committed to supplying products and services of world-class quality that meet all applicable standards.
2. The products and services we offer shall comply with applicable laws, including product packaging, labelling and after-sales service obligations.
3. We shall market our products and services on their own merits and not make unfair or misleading statements about the products and services of our competitors.

Export controls and trade sanctions

4. We shall comply with all relevant export controls or trade sanctions in the course of our business.

Fair competition

5. We support the development and operation of competitive open markets and the liberalisation of trade and investment in each country and market in which we operate.
6. We shall not enter into any activity constituting anti-competitive behaviour such as abuse of market dominance, collusion, participation in cartels or inappropriate exchange of information with competitors.
7. We collect competitive information only in the normal course of business and obtain the same through legally permitted sources and means.

Dealings with customers

8. Our dealings with our customers shall be professional, fair and transparent.
 9. We respect our customers' right to privacy in relation to their personal data. We shall safeguard our customers' personal data, in accordance with applicable law.
-

Q&A

You are the Regional Sales Manager of our company. You have become a member of an “informal group”, on an instant messaging service, whose members are the regional sales heads of our company’s competitors. The administrator of the group has requested an in-person meeting to informally discuss market conditions and brainstorm on “pricing strategy” from an industry perspective. What should you do?

Any meeting with competitors, especially to discuss “pricing strategy”, could be an attempt to promote an anti-competitive practice or manipulate prices. You should respond by declining this invitation and exiting the “informal group”. You should also report this incident to your supervisor and your Legal department.

You are attending a customer meeting with a colleague, and your colleague makes an untruthful statement about the company’s services. What should you do?

You should assist your colleague in correcting the inaccuracy during the meeting if possible. If this is not possible, raise the issue with your colleague after the meeting to enable him/her or the company to correct any misrepresentation made to the customer.

While working on a customer project, you receive a call from your colleague. He used to manage that customer account before you took over his role. He recalls that he had worked with the customer on developing a new ordering system which he thinks would be beneficial for another customer and requests you to send him the project details. What should you do?

You must not share this information without specific approval of the customer; you are not permitted to use a customer’s assets, including software, for another customer or for any personal use.

REMEMBER...

Striving for excellence in the standards of our work and in the quality of our goods and services is a core Tata value. It is the unwavering practice of this value that builds and sustains customer trust in our brand.

OUR COMMUNITIES AND THE ENVIRONMENT



In a free enterprise, the community is not just another shareholder in business but is in fact the very purpose of its existence.

Jamsetji Tata

Founder of the Tata group
Chairman, Tata Sons (1868 – 1904)

F. OUR COMMUNITIES AND THE ENVIRONMENT

Communities

1. We are committed to good corporate citizenship, and shall actively assist in the improvement of the quality of life of the people in the communities in which we operate.
 2. We engage with the community and other stakeholders to minimise any adverse impact that our business operations may have on the local community and the environment.
 3. We encourage our workforce to volunteer on projects that benefit the communities in which we operate, provided the principles of this Code, where applicable, and in particular the 'Conflicts of Interest' clause are followed.
-

The environment

4. In the production and sale of our products and services, we strive for environmental sustainability and comply with all applicable laws and regulations.
5. We seek to prevent the wasteful use of natural resources and are committed to improving the environment, particularly with regard to the emission of greenhouse gases, consumption of water and energy, and the management of waste and hazardous materials. We shall endeavour to offset the effect of climate change in our activities.

OUR VALUE-CHAIN PARTNERS



If we had done some of the things that some other groups have done, we would have been twice as big as we are today.
But we didn't, and I would not have it any other way.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

(on the pace of expansion of the Tata group in the 1960s and 70s)

G. OUR VALUE-CHAIN PARTNERS

1. We shall select our suppliers and service providers fairly and transparently.
2. We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.
3. Our suppliers and service providers shall represent our company only with duly authorised written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
4. We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
5. We respect our obligations on the use of third party intellectual property and data.

Q&A

You head the procurement function in our company. You have tight budgetary constraints for a project that you are working on. In order to complete the project within the targeted costs, you intend to request your supplier to provide you an exceptional discount on this project order on the understanding that you would “make it up to him” in future orders. Would you be violating the Code?

Yes, you would. Inducement in any form, including future benefits to the supplier, could compromise your ability to act objectively and in the best interests of the company and therefore must be avoided.

REMEMBER...

Our value-chain partners would include our suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents; joint-venture partners and other business associates.

OUR FINANCIAL STAKEHOLDERS



Ethical behaviour in business – in every sphere and with all constituents – has been the bedrock on which the Tata group has built, and operates, its enterprises. This has been an article of faith for the group ever since its inception, a fundamental element of our cherished heritage and the essence of our way of life.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

H. OUR FINANCIAL STAKEHOLDERS

1. We are committed to enhancing shareholder value and complying with laws and regulations that govern shareholder rights.
 2. We shall inform our financial stakeholders about relevant aspects of our business in a fair, accurate and timely manner and shall disclose such information in accordance with applicable law and agreements.
 3. We shall keep accurate records of our activities and shall adhere to disclosure standards in accordance with applicable law and industry standards.
-

GOVERNMENTS



Business, as I have seen it, places one great demand on you; it needs you to impose a framework of ethics, values, fairness and objectivity on yourself at all times. It is not easy to do this; you cannot impose it on yourself forcibly because it has to become an integral part of you.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

I. GOVERNMENTS

Political non-alignment

1. We shall act in accordance with the constitution and governance systems of the countries in which we operate. We do not seek to influence the outcome of public elections, nor to undermine or alter any system of government. We do not support any specific political party or candidate for political office. Our conduct must preclude any activity that could be interpreted as mutual dependence/favour with any political body or person, and we do not offer or give any company funds or property or other resources as donations to any specific political party, candidate or campaign.

Any financial contributions considered by our Board of Directors in order to strengthen democratic forces through a clean electoral process shall be extended only through the Progressive Electoral Trust in India, or by a similar transparent, duly-authorised, non-discriminatory and non-discretionary vehicle outside India.

Government engagement

2. We engage with the government and regulators in a constructive manner in order to promote good governance. We conduct our interactions with them in a manner consistent with our Code.
3. We do not impede, obstruct or improperly influence the conclusions of, or affect the integrity or availability of data or documents for any government review or investigation.

OUR GROUP COMPANIES



I do not think anyone was on par with Jamsetji as an industrial visionary. But that is not the sole reason why I have been an admirer of Jamsetji.

The major reason was his sense of values, sterling values, which he imparted to this group. If someone were to ask me, what holds the Tata companies together, more than anything else, I would say it is our shared ideals and values which we have inherited from Jamsetji Tata.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

J. OUR GROUP COMPANIES

1. We seek to cooperate with our group companies, including joint ventures, by sharing knowledge, physical resources, human and management resources and adopting leading governance policies and practices in accordance with applicable law including adherence to competition law, where relevant.
2. We shall strive to achieve amicable resolution of any dispute between us and any of our group companies, through an appropriate dispute resolution mechanism so that it does not adversely affect our business interests and stakeholder value.
3. We shall have processes in place to ensure that no third party or joint venture uses the TATA name/brand to further its interests without proper authorisation.
4. Our Board of Directors shall consider for adoption policies and guidelines periodically formulated by Tata Sons and circulated to group companies.

Q&A

You are in the process of selecting potential vendors for an IT project in our company. In the final shortlist of two companies, one is a new start-up with limited references and a lower price-quotation, while the other is a Tata company with thirty years of implementation experience and good references, but a marginally higher quote for the same job. With all other parameters of choice being nearly equal, which company should you select for the job?

While price is undoubtedly an important criterion for decision making, it is clearly not the only one to be evaluated. You may also need to consider good customer references, proven track record and shared value systems in order to decide on your IT partner.

You are in the process of selecting potential vendors for a project. One of the three finalists is a group company. In reviewing the final proposals, you rank the group company second out of the three proposals based on pricing and total cost of ownership, and select the first-ranked vendor. Is this the right decision?

Yes. You should select the vendor that, on its own merits, is the vendor that is most appropriate for your company's requirements. You should not select a group company only because of its affiliation.

RAISING CONCERNS

We encourage our employees, customers, suppliers and other stakeholders to raise concerns or make disclosures when they become aware of any actual or potential violation of our Code, policies or law.

We also encourage reporting of any event (actual or potential) of misconduct that is not reflective of our values and principles.

Avenues available for raising concerns or queries or reporting cases could include:

- immediate line manager or the Human Resources department of our company
- designated ethics officials of our company
- the 'confidential reporting' third party ethics helpline (if available)
- any other reporting channel set out in our company's 'Whistleblower' policy.

We do not tolerate any form of retaliation against anyone reporting legitimate concerns. Anyone involved in targeting such a person will be subject to disciplinary action.

If you suspect that you or someone you know has been subjected to retaliation for raising a concern or for reporting a case, we encourage you to promptly contact your line manager, the company's Ethics Counsellor, the Human Resources department, the MD/CEO or the office of the group's Chief Ethics Officer.

Q&A

My supervisor has asked me to do something which I believe may be illegal. I am afraid if I do not do what I am told, I could lose my job. Should I do it?

No. Breaking the law is never an option. Discuss the situation with your supervisor to be certain that you both understand the facts. If your concerns are not resolved, contact a higher level supervisor, the Ethics Counsellor, the Legal department or report them via the company's confidential reporting system, if available.

I feel that my supervisor is treating me unfairly for reporting a concern to the Ethics Counsellor. What should I do?

Retaliation against anyone who raises a concern is a violation of the Code. You should therefore promptly report this action of your supervisor to the Ethics Counsellor or the MD/CEO of your company or via the company's confidential reporting system, if available.

ACCOUNTABILITY

This Code is more than a set of prescriptive guidelines issued solely for the purpose of formal compliance. It represents our collective commitment to our value system and to our core principles.

Every person employed by us, directly or indirectly, should expect to be held accountable for his/her behaviour. Should such behaviour violate this Code,

they may be subject to action according to their employment terms and relevant company policies.

When followed in letter and in spirit, this Code is *'lived'* by our employees as well as those who work with us. It represents our shared responsibility to all our stakeholders, and our mutual commitment to each other.

SPEAK UP...

If you are unsure whether a particular action you are about to take is consistent with the principles set forth in the Code, ask yourself:

- Could it directly or indirectly endanger someone or cause them injury?
- Is it illegal/unlawful or out of line with our policies and procedures?
- Does my conscience reject it? Does it conflict with my personal values?
- Would I feel uncomfortable if the story appeared in the media? Would it shame my company, spouse, partner, parent or child?
- Does it 'feel' wrong?

If the answer to any of these questions is "Yes", please stop and consult your reporting manager, the Ethics Counsellor, the Human Resource department, the Legal department or any member of the senior management team, to assist you in making the decision.

When faced with a dilemma: Stop, Think, Act Responsibly

NOTE

The Code does not provide a comprehensive and complete explanation of all expectations from a company standpoint or obligations from a stakeholder standpoint.

Our employees have a continuing obligation to familiarise themselves with all applicable law, group-level advisories and policies, company-level policies, procedures and work rules as relevant. For any guidance on interpretation of the Code, we may seek support from our company's Ethics Counsellor or from the group's Chief Ethics Officer, as appropriate.

All joint ventures are encouraged to adopt the Tata Code of Conduct (TCOC) or a code of conduct that incorporates all elements of the TCOC.

This version of the Tata Code of Conduct supersedes all earlier versions and associated documents and stands effective from 29th July, 2015.

For any query or clarification on the Code, please contact the office of the group's Chief Ethics Officer via email at: ethicsoffice@tata.com.



TATA CODE OF CONDUCT – 2015

I acknowledge that I have received the Tata Code of Conduct.

I have read the Tata Code of Conduct and I acknowledge that as a Tata employee, I am required to comply with the guidelines described therein and failure to do so may subject me to action as per my employment terms and relevant company policies.

If I have a concern about a violation, or a potential violation of the Tata Code of Conduct, I understand that there are channels available to me in my company to report such concerns. By making use of these channels when necessary, I will play my part in maintaining the high ethical standards to which we hold ourselves.

Signature: _____

Date: _____

Name: _____

Department: _____

Address: _____

(Please submit this declaration to your Ethics Counsellor or the Human Resource department of your company.)

35

NOTES

[illegible]



For further information on the Code please contact:
The Ethics Office,
Tata Sons Ltd.,
Bombay House,
24, Homi Mody Street,
Mumbai – 400001, India.
Email: ethicsoffice@tata.com