ANDREW YULE & COMPANY LIMITED (AYCL)
ELECTRICAL-CHENNAI OPERATIONS
5/346, OLD MAHABALIPURAM ROAD,
PERUNGUDI, CHENNAI-600096

TENDER NO. T -003 / 2025 –26 DTD. 05/07/2025

AYCL INVITES TENDER FROM ELIGIBLE TECHNOCRATS / FIRM FOR DESIGN OF POWER TRANSFORMER RATING AS 16/20 MVA, 110/33-11 KV

Last Date of submission of Tender	:	28.07.2025 up to 10.45 A.M.
Date of Opening of Tender	:	28.07.2025 at 11.00 A.M.

Cost of Tender documents	:	NIL
EMD	:	NIL

1. NOTICE INVITING TENDER

ANDREW YULE AND CO. LTD (AYCL) invites Tender from eligible Technocrats / firm for design of Power Transformer of rating 16/20 MVA, 110/33-11 kV.

Interested Technocrats / firm are requested to visit http://www.andrewyule.com/tender, for bid documents, qualification criteria etc. Any amendment, update will be published in the above website only.
Interested technocrats / firm are requested to forward their Tender in sealed envelope.

2. BID CONDITIONS & GENERAL TERMS

Sealed Tenders are invited for the following,

To engage a technocrat / firm for the design of power transformer of the following rating,

1. 16/20 MVA 110/33-11 KV -1 No

Complete design should be submitted within 4 weeks from the date of order.

2. Scope of Work:

1) Preparing Electrical and Mechanical Design as per the below specification.
2) Preparing Guaranteed Technical Particulars (format as per Annexure I) & Calculation as per the below specifications.
3) Preparing BOM as per the below specifications.

SPECIFICATION FOR 16/20 MVA 110/33-11 KV POWER TRANSFORMER: -

Sl.NO	DESCRIPTION	PARAMETERS
1	Reference Standard	IS:2026; IEC:60076, CBIP & Statutory Regulations for Transformer Designs
2	Service	Outdoor
3	Duty	Continuous
4	Rating	16/20 MVA
5	HV Voltage	110 kV
6	LV Voltage	33-11 kV
7	Rated Frequency	50 Hz (+/-5%)
8	Vector Group	Dyn11
9	No of Phase	3
10	Type of Cooling	a) ONAN (80%) / ONAF (100%) b) Separate 2X50% cooler bank Tank mounted c) One Fan for each bank as standby.
11	Working Flux Density	1.6 Tesla (Max)
12	Material of Core Lamination	Hi-B grade non aging cold rolled super grain-oriented silicon steel – Conventional grain oriented

		(CGO) core of grade M4 or better		
13	Maximum temperature rise over Ambient temperature of 50ºC			
	a) Winding	50ºC		
	b) Oil	45ºC		
	c) Winding Hot Spot	61ºC		
	d) Tank Hot Spot	110ºC		
14	Winding Arrangement	LV-HV-TAP (Connects at line end of HV main winding and insulation level shall be higher than main winding)		
15	Tap Changing Gear	Separate tap winding inserted over HV winding		
	a) Type	On load suitable for bidirectional flow. In tank Hi Speed Transient Resistor Type on load		
	b) Step Voltage%	1.25% of 110 KV		
	c) Tap Range	+5% to -15%		
	d) Tapping's provided at	Line end of the HV Delta winding		
	e) Tap Control	Full capacity OLTC suitable for group /independent, remote/local electrical and local manual operation		
16	Type of mounting	On wheel mounted on rails		
17	No. of windings	Two windings with separate tap winding inserted over HV winding.		
18	Maximum permissible losses of Transformers			
	a) Max. No Load Loss at rated voltage and frequency	13 kW (Max)		
	b) Max. Load loss at rated current & frequency and at 750C at principal tap position	53 kW (Max)		
	c) Max. I2R loss at rated current and frequency and at 750C (at principal tap position)	45 kW (Max)		
	d) Max. Auxiliary Loss at rated voltage & frequency	1.0 kW (Max)		
19	Working Current Density	2.3 Amps/Sq.mm @ any winding		
20	Percentage impedance Voltage on normal tap & at rated MVA with tolerance as per IS2026	10.0% (Tol as per IS 2026)		
21	Minimum air core reactance of HV winding	20%		
22	Short time thermal withstand capacity & duration in Sec.	100/z times the rated primary current of transformer for 3 secs. Where z is the Percentage impedance of the transformer. Calculation to be furnished		
23	Permissible overloading	As per IS 6600		
24	Insulation level for winding & OLTC	HV	LV	LVN
	a) Lightning impulse withstand kV(peak)	550	170	170

	b) Chopped Wave Lightning Impulse Withstand voltage (kVp)	605	187	NA
	c) Power frequency voltage withstand kV (rms)	230	70	70
25	Tan Delta of winding	<=0.5%		
26	RIV at 1.1 times minimum phase to ground voltage	5000 micro Volts		
27	Max. Noise level at rated voltage, at principal tap & No load and all cooling active.	75 dB		
28	System short circuit level & duration for which the transformer shall be capable to with stand thermal & dynamic stress kA rms/ sec	AS per IS 2026		
29	Insulating and cooling medium	EHV grade transformer Oil confirming to IEC:60296		
30	Oil preservation			
	a) Main conservator	Maintenance Free Breather		
	b) OLTC conservator	Conventional type conservator with 2 numbers Silica gel breathers with oil seal		
31	Bushings	HV	LV	LVN
		145 kV /800 Amps RIP Bushing	36 KV / 2000 Amps Porcelain	36kV / 2000 Amps Porcelain

For any technical queries please contact

MANAGER- Design & Development,
ANDREW YULE AND CO. LTD (AYCL)
5/346, OLD MAHABALIPURAM ROAD,
PERUNGUDI, CHENNAI-600096
M.NO:9790743300

3. ELIGIBILITY CRITERIA

1. Technocrats / firm should be a senior professional having more than 15 years' experience of transformer design minimum 50MVA and 132kV class

   (or)

   Any academia/institute professors who have knowledge in Transformer designs of minimum 50MVA and 132kV class transformers.

2. Self-declaration of technocrats / firm successfully designed and Dynamic short circuit type tested for minimum 5 number of transformers rating of 132kV class .

4. DOCUMENTS REQUIRED

The bidder should submit the following mandatory documents,

a) Registration details of the of the firm / incorporation details / Profile in case of individual.

b) Copies from the client certifying their services/ Work order of the Designing power transformer minimum 50MVA 132 KV class.

c) Performance certificate towards completed projects

The following documents may be submitted

a) Brief presentation of Technocrats / firm including number of staff, turnover, years of experience in similar business.

b) List of present Projects/Jobs in hand.

c) List of projects/jobs completed so far.

5. IN ADDITION TO THE ABOVE THE APPLICATION SHALL CONTAIN / COMPLY THE FOLLOWING:

a) Duly filled in application (Annexure II).

b) Documentary evidence in respect of the eligibility criteria.

c) Declaration that the applicants have not been barred / black-listed by any central/ state government Department / Organization / PSUs. (Annexure-III)

d) The following certificates may be furnished:

We certify that there has been no conviction by a court of law or indictment / adverse order by a regulatory authority for any offence against us. It is further certified that there is no investigation pending against us or the CEO / Directors / Managers of our concerned.

It is certified that there is no conflict of interest exist as on date and in future if such a conflict of interest arises, we will intimate AYCL of the same.

6. VALIDITY OF OFFER:

Your offer should be valid for a period of 90 days from the date of opening of Techno-Commercial Bid.

7. PAYMENT TERMS: We prefer 30 days' credit from the date of submission of design.

8. RIGHT TO ACCEPT/REJECT ANY OR ALL APPLICATIONS

AYCL reserves the right to accept or reject any or all Applications and to annul the qualification process at any time without any liability or any obligation for such acceptance, rejection or annulment, without assigning any reasons.

9. STANDARD OF PERFORMANCE:

The Technocrats / firm shall perform the Services and carry out the obligations with all due diligence, efficiency and economy in accordance with generally accepted professional standards and practices and shall observe sound management practices. The Technocrats / firm shall always act, in respect of any matter relating to this contract or to the services, as faithful adviser to AYCL and shall at all-time support and safeguard its legitimate interests in any dealings with the third parties.

10. CONFIDENTIALITY:

Except as provided, the Technocrats / firm must not disclose, divulge or make public or shall personally use for his gain any of the materials, processes, accounts, transactions dealings, and information etc. without the prior written consent of AYCL. In this regard, the successful Technocrats / firm will require to sign a non-disclosure agreement (NDA) before issue of Award.

11. FAIRNESS AND GOOD FAITH:

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measure to ensure the realization of the objectives of this Contract.

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration.

12. RESOLUTION OF DISPUTES:

If dispute or difference of any kind shall arise between the AYCL and the Technocrat / firm in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultants.

If the parties fail to resolve their disputes of differences by such mutual consultation within twenty-one days of its occurrence or its intimation of occurrence whichever is later, then either the AYCL or the Technocrat/ firm may give notice to the other party of its intention to commence arbitration, as hereinafter provided, the applicable arbitration procedure will be as per the Arbitration and Conciliation Act, 1996 of India. Such dispute or difference shall be

referred to the sole arbitrator appointed by the CMD of AYCL or his authorized representative.

The award of the arbitrator shall be final and binding on the parties to the contract subject to the provision that the Arbitrator shall give reasoned award. The venue of arbitration shall be Kolkata (India).

13. LEGAL CONDITIONS:

Any contract entered against this tender will be as per the following legal condition

It is recorded that this purchase order / contract / agreement is executed and concluded by and between the parties hereto at premises No.5/346, Old Mahabalipuram Road, Perungudi, Chennai 600 096 and in the event any dispute arises out of this agreement between the parties only the appropriate Civil Court in the City of Kolkata shall have the exclusive jurisdiction to entertain, try and determine the said proceedings in exclusion of all other courts.

BID SUBMISSION

The offer should be submitted as follows:

1. SUBMISSION OF OFFER

Tender should be submitted in Two Separate Parts in **two separate sealed envelopes** as given hereunder:

Part 1. TECHNO COMMERCIAL BID in a SEPARATE SEALED COVER Super scribing "QUOTATION FOR ENGAGING A SERVICE PROVIDER FOR TECHNOCRATS IN THE DESIGN OF POWER TRANSFORMERS ", DUE ON 28.07.2025 (TECHNO COMMERCIAL BID)".

Part 2. PRICE BID in a SEPARATE SEALED COVER Super scribing ""QUOTATION FOR ENGAGING A SERVICE PROVIDER FOR TECHNOCRATS IN THE DESIGN OF POWER TRANSFORMERS ", DUE ON 28.07.2025 (PRICE BID)".

Both the Techno Commercial Bid and Price Bid should be put in one cover Superscribing ""QUOTATION FOR ENGAGING A SERVICE PROVIDER FOR TECHNOCRATS IN THE DESIGN OF POWER TRANSFORMERS ", DUE ON 28.07.2025 (TECHNO –COMMERCIAL BID & PRICE BID)".

Offers sent thro' E-mail, fax and envelopes without super scribing the tender reference and due date on the envelope will not considered

TECHNO-COMMERCIAL BID WILL BE OPENED ON 28 .07.2025 AT 11.00 A.M

Annexure - I

SL.NO	PARTICULARS	LV	HV	TAPPING
1	Phase Current A)			
2	Cross sectional Area (mm)			
3	Current Density			
4	a) Type of Coil			
	b) ID - mm			
	c) OD – mm			
	d) Mean – Dia (Dm) mm			
	e) Size of conductor including parallels			
5	No of turns/phase (T)			
6	No of spacers per circle			
7	Length of mean turn(Lmt)=Dm*T*∏			
7	Copper Weight = (3 x LMT x density x Area x 10^-3)			
8	Per phase resistance of winding (Ohms) = 0.0211 x Lmt/ A			
9	3 x I2 R Loss (Kw)			
10	Eddy Current & stray loss (Kw)			
11	Total copper Loss (kW)			
12	Guaranteed loss(kW) at 75 degree cent			
13	Core material			
14	(a) No. of steps of core			
	(b) No of limbs			
15	Gross core area			
16	Stacking factor			
17	Net core area (Ai)			
18	Core circle dia (D)			
19	Height of window (H) Width of window			
20	Centre to center distance of limb			
21	Voltage per turn (V/t)			
22	Weight of core in Kg			
23	Working flux density (B in tesla) =			

24	Core loss in watt per KG from graph for grade of core material and selected flux density	
25	Building factor	
26	No Load Loss in wats per Kg x Building factor	
27	Guaranteed No Load Loss (W)	
28	Transformer Cooling Calculation Shall be furnished	
29	Oil Quantity in Ltrs	
30	Transformer Tank & Fittings Weights shall be furnished	
31	OLTC Model & Type to be furnished	

Annexure - II

APPLICATION FORM FROM TECHNOCRAFTS / FIRM FOR DESIGN OF POWER TRANSOFMRER

Details of the Bidder	
Name of Organization/Individual	
Year of Incorporation/ registration/Years of experience in Transformer design	
Registered Address	
Correspondence Address	
Maximum rating of transformer designed (MVA and kV)	

Annexure - III

Declaration

I/We certify that the above information is correct and true to the best of our/my knowledge and belief. In the event of any information being found false or incorrect, action can be taken against us.

We declare that we have not been barred / black-listed by any central/ state government Department / Organization / PSUs

We also declare that there is no pending litigations and contingent liability against our company.

Place :

Date : Signature of the applicants

PRICE BID

Sl.no	Description	Quantity	Rate in Rs
1	CHARGES FOR DESIGNING OF 16/20 MVA 110/33-11KV POWER TRANSFORMER AS PER THE SPECIFICATION	1 No	