Tender No TPSODL/OT/2021-22/074

Package Name Rate Contract for Supply of AL Wound and CU Wound Distribution Transformer of various rating at TPSODL.

	Detailed Reference to TPSODL						
Sr. No.	Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response			
1	2	3	4	5			
er-Bid Quer	ies for 1-Ph Distribution Trans	formers					
1	-	As per clause No.1. Scope  This specification covers the technical requirements of design , manufacture testing at manufacturers works , packing , forwading , supply and unloading at site; store and performance of oil immersed, non sealed, naturally cooled, three phase 11kV/0.250kV,50Hz,Aluminium wounded, double wound outdoor type distribution transformers. The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International Standards and shall conform to the regulations of the authorities.  As per clause No:4.General technical requirements.  9.No.of phases :single	We wish to bring to your kind notice that both the clauses are contradicting with each other. Hence kindly confirm No of phases and Rated voltage of the transformer.  Kindly confirm.	Single phase			
2	Ç	AS per clause 4.General Technical Requirements  20.Short circuit  Impedance voltage at 75DegC: 4.5%  As Per Clause no.19: General Technical Parameters:  % Impedance at 75 deg.C. 16kVA & 25kVA: 4.5%	We wish to bring to your kind notice that,both the Clauses are Contradicting with each other, as per Table 9 of 15:1180 (Part-I):2014 Impedance is 4% for single pahse distribution transformers upto and including 25kVA.  Hence, we request you to take note of the above and amend the this clause inline with IS 1180 (Part-I): 2014	Specification to be complied			
3	clause No.5.3/Page No.9	As per clause 5.3 Winding Connections  1. Primary and secondary windings shall be constructed from high conductivity (Aluminium conductors), Double paper covered (DPC) Aluminium conductor.	We wish to bring to your kind notice that, Option for Super enamel covering is also mentioned in the guidelines for energy efficient distribution transformers, issued by Central Electricity Authority(CEA).So kindly provide the provision for Super enamel covered aluminium conductor also.  Kindly confirm.	Specification to be complied			
4	-	As per Clause 5.2.Losses The transformer shall be designed for minimum level of efficiency 99.05% for loading range in between 20% to 60% at unity P.F.  Percentage of regulation should be less than 4% at 0.8 Power factor	We wish to bring to your kind notice that,Percentage regulation value will be arrived based on achieved No Load, load Losses w.r.t. Energy Efficiency level losses but it Is not a fixed value.  Kindly confirm.	Specification to be complied			
5		As per Clause 8.0 Type Test Certificates.  The bidder shall furnish the type test certificates of the Distribution Transformer for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI as per the relevant standards. Type Test should have been conducted in certified Test laboratories during the period not exceeding 5 years from the date of opening the bid.in the event of any discrepancy in the test reports, i.e. any test report not acceptance, same shall be carried out without any cost implication to TPSODL.	We request you to allow us to submit the simillar or higher rating type test reports during the technical evaluation of this tender. However we will submit the Type test reports of offered design before commencement of supplies. Kindly accept the same enabling us to participate and submit our most competitive offer.	Ok Noted			
6		As Per clause No.5.4  7.The tank cover shall be conical Shape(Slope of atleast 15 degree taking horizontal plane as reference)	We wish to bring to your kind notice that, We will provide Dome Shaped Tank Cover.  Kindly Confirm.	Dome shape is accepted			

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response
7	5.4 of Technical Specification	As Per clause No.5.4  13.Minimum Oil Level mark shall be embossed inside the tank (at 25 Deg.c)	We Wish to Bring to your kind notice that, As per Latest amended IS 1180-2014, Minimum position corresponds to an operating temperature of 30 Deg.c for sealed type transformers.  Kindly amend this Clause as per IS 1180-2014 Standard.	Minimum Oil Level mark shall be embossed inside the tank (at 25 Deg.c)
8	5.5 of Technical Specification	As Per Clause No.5.5: Lifting Lugs & Mounting Lugs  15:The transformer shall be provided with two permanent lifting lugs (Enclosed type) of MS Plate.	We Wish to bring to your kind notice that, Kindly Provide the Information about Lifting Lugs (Enclosed type) Construction.  Kindly Confirm.	Lifting lug welded with body in circular shape
9	4. of Technical Specification	As Per Clause No.4: General Technical Requirements: 6.Line current HV : 2.519A(16kVA) & 3.94A(25kVA) 7.Line Current LV :66.66A(16kVA) & 104.17A(25kVA)	For 16 KVA, 11/0.250 KV transformer (a)current mentioned for HV side = 2.519 Amp but the Achieval Current is 1.45 Amp. (b) For LV side = 66.66 Amp but the Achieval Current is 64 Amp. For 25 KVA, 11/0.250 KV transformer (a) Current mentioned fo HV side = 3.94 amp but the Achieval Current is 2.27 Amp. (b) For LV side = 104.17 amp but the Achieval Current is 100 amp. Kindly mentioned exact value of KVA and KV.	1) For 16 KVA, 11/0.250 KV transformer the HV Current =1.45Amp &LV Current =64Amp & 2) For 25 KVA, 11/0.250 KV transformer the HV Current =2.27Amp &LV Current =100Amp
10	5.10. of Technical Specification	As per Clause No.5.10: Make of the Major Component & Material  A: Copper	We wish to Bring to your kind notice that, As per Technical Specification Clause no.:5.3 the winding material is Aluminium Wound. But as per Clause no.:5.10. Winding Material is mentioned as Copper.  Kindly Confirm the Winding material.	The winding Material is Aluminium
11	5.4. of Technical Specification	As per Clause No.:5.4: Transformer Tank  4. The Thickness of the Tank should be as below  For Top & Bottom plate - 2.5mm Min.  For sides - 2.25mm Min.	We wish to bring to your kind notice that, Kindly Allow us for Top & Bottom Plate: 2.5 mm Min. (Sheet thickness tolerance applicable as per IS 1852) and For sides: 2.2mm Min. (Sheet thickness tolerance applicable as per IS 1852).  Kindly Confirm.	The thickness of tank shall be as below Top& Bottom Plate :2.5(min) For sides:2.25mm(Min)
12	5.4. of Technical Specification	As per Clause No.:5.4: Transformer Tank  4. The Thickness of the Tank should be as below  For Top & Bottom plate - 2.5mm Min.  For sides - 2.25mm Min.  As per Clause No.:19.0 General Technical Parameters:  28.3). Thickness of Plates for a) Side plate(min): 5mm  b) Top & bottom plate(min): 6mm	We wish to bring to your kind notice that, kindly Confirm the Tank Sheet Thickness.	The Thickness of the Tank should be as below For Top & Bottom plate - 2.5mm Min. For sides - 2.25mm Min.
13	4. General Technical Requirements	As per Clause No.:4.General Technical requirements:  24B: Normal Flux Density at rated Voltage & Frequency : 1.5Tesla	We wish to bring to your kind notice that, As per IS 1180 Clause No 7.9.1, The maximum flux density in any part of the core and yoke at rated voltage and frequency shall be such that the flux density with + 12.5 percent combined voltage and frequency variation from rated voltage and frequency does not exceed 1.9 Tesla. Tesla (max 1.9)/1.125=1.69Tesla. Hence with respect to above clause could we proceed with 1.69T Max.  Please Confirm.	Normal flux density at rated voltage and frequency 1.5T

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response	
14		As per Clause No.:4.General Technical requirements:  24B: Normal Flux Density at rated Voltage & Frequency : 1.5Tesla  As per Clause no.:19. General Technical Parameters:  10)Core Material used and grade  C)Flux density at Normal Voltage: 1.6Wb/mm^2	We wish to bring to your kind notice that, both the Clauses are Contradicting with Each other.  Kindly confirm the Normal Flux density at rated Voltage.	Normal flux density at rated voltage and frequency 1.5T	
15	5.19 Fittings	As per clause No.:5.19. Fittings  k) Terminal Connector For HT & Palm Connector For LT side.	We Wish to bring to your kind notice that, as per Fittings: Palm Connector for LT side is Mentioned.But for termination for single cable Bi-Metallic Connector is suitable. Kindly allow us for Bi-metallic Connector in Place of Palm Connector and Bus Bar.	Palm connector is not required for Single phase 16KVA & 25KVA LT Distribution BOX.	
16	5.9.LV Box With MCCB	As per clause no.:5.9: LV box with MCCB:  4.The Single Phase MCCB shall be provided with suitable size of Al Bus bar w.r.t minimum current density(calculated) of 1A/sq.mm insidefor further distribution of supply.	We wish to bring to your kind notice that, MCCB AI Bus Bar Current density is 1A/sq.mm Minimum is mentioned. AI Bus bar Maximum current density Should be 1A/sq.mm.  Kindly Amend this Clause as Above.	Ok Noted	
17	5.0 General Construction	As Per Clause No.: 5.0: General Construction  The Transformer shall be double wound, Aluminium coil, oil immersed, naturally cooled(ONAN) and sealed type with Rectangular tank.  As per Clause No.: Transformer Tank:  1) The Transformer Tank should be Round.	We Wish to bring your kind notice that, Kindly confirm the Transformer Construction Round (or) Rectangular Construction.	Round Tank	
18	5.1: Core	As per Clause No.: 5.1: Core: The Core shall be Stacked Type.	"We request you to kindly add option for wound core construction by considering the advantages of Wound core construction over Stacked core construction. Wound core construction is ideal for transformers with CRGO silicon steel also wound cores features a step – lap joint will minimizing eddy current losses. Hence, the core destruction factors will be less compared to the core with stacked construction resulting in lower No-load loss. Wound core transformers are light weight and compact. Wound core certainly eliminates the possibility to use small pieces of lamination. This can avoid the use of scrap pieces of CRGO in distribution transformers. Hence in a way if wound core transformers are incorporated, it eliminates the use of scrap CRGO. Mechanically strong to resist short circuit forces. This aspect has been adopted by PGCIL for smaller distribution transformers.  1.Thermally strong for higher load capability and longer life.  2.Efficient, providing maximum output at minimum operating cost.  3.Electrically strong to resist lightning and switching surges.  4.Generation of low radial leakage flux which leads to Less short circuit axial forces."	Core shall be wound core.	

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response	
19	Document No / Clause No / Page No  5.3: Winding  As per Clause No.:5.3: Winding  The coil shall be Circular Shape		"We wish to bring to your kind notice that, in case of wound core design the coil construction shall be rectangular type instead of Circular coil. We kindly request you to amend this clause as incase of Wound core design coil shall be Rectangular type.  Kindly confirm."		
Per-Bid Quer	ies for 3-Ph Distribution Trans	formers			
1	ENG-HV-DT Cu Wdg/Clause No.5.2 WINDING CONNECTIONS:	As per Clause No.5.2 WINDING CONNECTIONS:  1. Primary and secondary windings shall be constructed from high- conductivity (copper conductors), Double Paper Covered (DPC) copper conductor with 60% overlap	We wish to bring to your kind notice that transformers with foil winding has low axial forces during short circuit resulting into better short circuit withstand capability when compared to strip windings. And also there will be no shearing stress between turns.  we will provide the overlap for Double Paper Covered (DPC) copper conductor with min. 30% overlap per layer of paper & TPC with 25% overlap per layer.  We wish to bring to your kind notice that, Option for Super enamel covering is also mentioned in the guidelines for energy efficient distribution transformers, issued by Central Electricity Authority(CEA).So kindly provide the provision for Super enamel covered aluminium conductor also.  Kindly confirm	Primary and secondary windings shall be constructed from high- conductivity (copper conductors), Double Paper Covered (DPC) copper conductor with 60% overlap	
2	ENG-HV-DT Cu Wdg/Clause No.4	As per Clause No.4.0 General Technical Requirements:  22.0 Normal flux density (at rated voltage and frequency) – 1.6T  26.Maximum flux density (Increase of +12.5% combined voltage and frequency variation from rated voltage and frequency) - 1.9T	We request you to kindly allow the Normal flux density (at rated voltage and frequency) up to 1.69T which is in limits, as the Max flux density(Increase of +12.5% combined voltage and frequency variation form the rated voltage and frequency) is 1.9T (i.e-1.9 Tesla Max/1.125%=1.6888 Tesla)	Normal flux density (at rated voltage and frequency) – 1.6T	
4	ENG-HV-DT Cu Wdg/Clause No.5.25- Surface Preparation and Painting  ENG-HV-DT Cu Wdg/Clause No.5.15-	As per clause 5.25 Surface preparation and painting  As per clause 5.25 Surface preparation and painting  As per clause 5.25 Surface preparation and painting  Heat resistant (Hot oil proof) paint shall be used for the inside surface and whereas for external surface one coat of thermosetting powder paint or one coat of epoxy primer (zinc chromate) followed by two coats of polyurethane (P.U.) base paint  Kindly confirm.		Accepeted	
5	Earthing connections			Specification to be complied	
6	NG-HV-DT Cu Wdg/Clause No.5.17- onservator  As per clause 5.17 Conservator:  3. The connecting pipe of the conservator shall be so fitted to transformer tank that the pipe can be detached from the tank  We wish to bring to your kind notice that detachable conservator is not provided for small rating transformers and is mostly provided for power transformers. So we will provide welded type conservator tank. Kindly confirm.		Specification to be complied		
7	ENG-HV-DT Cu Wdg/Clause No.5.23- Oil Temperature Indicator & Clause No.5.28 Fittings	As per clause 5.23. Oil temperature indicator  14. Dial Type Oil temperature indicator shall be provided on the top cover of the transformer  As per clause 5.28. Fittings  22. Oil Temperature indicator with alarm & trip	We wish to bring to your kind notice that Oil temperature indicator is not provided for small rating transformers and is mostly provided for power transformers. Kindly remove this clause.  Kindly confirm.	Specification to be complied	

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response	
8		As per clause 5.28 .Fittings  24 Magnetic Oil Level Gauge,	We wish to bring to your kind notice that as perIS:1180(Part-I):2014 clause No.20.2 Fittings,Magentic oil level guage is provided for ratings above 1600kVA.So, so kindly amend this clause as per IS:1180.	Accepted as per relevant IS	
9	ENG-HV-DT Cu Wdg/ Clause No.5.28 Fittings	As per clause 5.28 .Fittings  17.Jacking Pads.,	We wish to bring to your kind notice that as per IS:1180(Part-I):2014 clause No.20 .2 Fittings, Jacking padsare provided for ratings above 1600kVA .So , so kindly amend this clause as per IS:1180.	Accepted as per relevant IS	
10	ENG-HV-DT Cu Wdg/Clause No.5.1 Core	As per clause No.5.1 -Core  1. Transformer core shall be stack type, 2D, constructed from high grade cold rolled, non-ageing, grain oriented, silicon steel lamination which shall be properly annealed (under inert atmosphere, if required) to relieve stresses	Amorphous metal core is not accepted		
11	ENG-HV-DT Cu Wdg/ clause No.4.0. General Technical Requirements	We wish to bring to your kind notice that, against these clauses please clearly confirm whether the transformers are of pole mounted or plinth mounted?	Plingth mounted		
12	ENG-HV-DT Cu Wdg/ clause No.5.10. CABLE BOXES	As per clause No5.10. CABLE BOXES  1. For HV side, bare bushings shall be provided on top for 160 kVA, 250 kVA, 315 kVA, 400 kVA and 500 kVA transformers suitable for bare jumper connections. For plinth mount DTs in these ratings, sidewall mounted bushings with cable box are to be provided.  As per clause No5.11. TERMINAL CONNECTORS	We wish to bring to your kind notice that, these two clauses are contradicting to each other in case of cable box, terminal connectors shall not be provided please confirm the requirement of cable boxes.	Cable box required	
13	ENG-HV-DT Cu Wdg/Clause No.5.5- TRANSFORMER TANK AND TANK CONSTRUCTION	As per clause 5.5- TRANSFORMER TANK AND TANK CONSTRUCTION  4. Negative tolerance is not accepted in tank sheets and only positive tolerance shall be applicable as per IS 1852.	We wish to bring to your kind notice that, We will provide the thickness of tank as per IS:1852 with +/- Tolerance. Kindly confirm.	Negative tolerance is not accepted in tank sheets and only positive tolerance shall be applicable as per IS 1852.	
14	ENG-HV-DT Cu Wdg/ clause No.8. TYPE TEST CERTIFICATES	As per clause No.8. TYPE TEST CERTIFICATES  1. The Bidder shall furnish the type test certificates of the offered rating and design of transformer for the tests as mentioned above as per the corresponding standards.	We request you to allow us to submit the simillar or higher rating type test reports during the technical evaluation of this tender. However we will submit the Type test reports of offered design before commencement of supplies. Kindly accept the same enabling us to participate and submit our most competitive offer.	Ok Noted	
15	ENG-HV-DT Al Wdg/ clause No.5.27	As per clause No.5.27 The transformer shall be suitable for loading as per IS 6600		The transformer shall be suitable for overloading as per IS 2026-7	
16	ENG-HV-DT Al Wdg/ clause No.5.6  As Per Clause No.5.6 of Technical Specification Thickness of sheet for radiators shall be 1.2mm.  ANNEXURE – I INSPECTION TEST PLAN FOR STAGE INSPECTION OF DISTRIBUTION TRANSFORMER H) Profarma Radiators Fin radiator of 1.25mm thick sheet		These two clauses are contradictory please provide the required radiator thickness.  Kindly Confirm.	Thickness of sheet for radiators shall be 1.2mm	
17	ENG-HV-DT Al Wdg/ clause No.4.28	4.28 Metering CT for LV Side CT not required in neutral.Kindly confirm		Specification to be complied	
18	ENG-HV-DT AI Wdg/ clause No.5.29	5.29.WTI  1.WTI shall be Provided in one Winding	It is mentioned WTI shall be provided in one winding of each LV and HV phase, but in general WTI is provided only on one winding of LV. Please clarify.	Specification to be complied	

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No					Remarks - Query / Clarification	TPSODL Response
19	ENG-HV-DT Al Wdg/ clause No.5.17 & 5.28(24)	As per Clause no.5.17(7), For DT up to 1600kVA, the conservator to be fitted with float switches such that it shall operate/open contact when the oil level in conservator goes below -5 degree C /Minimum mark. The float switch shall be with normally closed type. This contact shall be wired up in auxiliary terminal box.  As per Clause no.5.28(24)  Magnetic Oil level Gauge (>1600kVA),				We wish to bring to your kind notice that, these two clauses are contradicting to each other .Kindly confirm requirement of MOG rating wise.	Accepted as per relevant IS
	ENG-HV-DT Cu Wdg/5.4/13	As Per Clause No.5.4 Losses:  8. Transformer shall be designed for below efficiency Level:			We wish to bring to your kind notice that, we will provide Efficiency level as per our Design.  Kindly Confirm.		
		Description		Efficiency Lev	/el		
20			160kVA to 250kVA	315kVA to 630kVA	800 kVA and Above		Specification to be complied
		At 20% to 60% Loading with unity power factor at 75°C	Minimum 99.1%	Minimum 99.3%	Minimum 99.3%		
21	TPSODL/OT/2021-22/074 / Clause no.3.Price Variation Clause/ Page No. 10 of 26	3.1 Price Variation Clause for Al Wound Transformers (16 kVA, 25 kVA) Price variation shall be applicable as per PV formulae a below:  P =P0/100 * (10 + 19*(AL/AL0) + 30*(ES/ES0) + 13*(IS/IS0) + 4*(IM/IM0) + 11*(T0/T00) + 13*(W/W0))				Please note, recently M/s. IEEMA has issued a revised price variation formula, vide their cicular No.  IEEMA/PVC/DIST_AL_upto 2.5 MVA/2021 and recommended for implementation with effect from 1st September - 2021. The copy of the circular is enclosed herewith as an Annexure-1. The revised formula also mentioned below for your easy reference:  P = P0/100 * (8 + 22*(AL/AL0) + 36 * (ES/ES0) + 12 * (IS/IS0) + 5 (IM/IMO) + 10 (TO/TO0) + 7 * (W/WO))  We requust to take note of the above and amend the PV formula in the tender specification.	No Change. Tender Terms and conditions are prevail
22	TPSODL/OT/2021-22/074 / Clause no.3.Price Variation Clause/ Page No. 11 of 26	3.2 Price Variation Clause for Cu Wound Distribution Transformers (315 kVA) Price variation shall be applicable as per PV formulae as below:  P =P0/100 * (10 + 33*(C/C0) + 24*(ES/ES0) + 9*(IS/IS0) + 4*(IM/IM0) + 5*(TO/TO0) + 15*(W/W0))				Please note, recently M/s. IEEMA has issued a revised price variation formula, vide their cicular No.  IEEMA/PVC/DIST_CU_upto 2.5 MVA/2021 and recommended for implementation with effect from 1st September - 2021. The copy of the circular is enclosed herewith as an Annexure-2. The revised formula also mentioned below for your easy reference:  P = P0/100 * (7 + 41*(C/C0) + 23 * (ES/ES0) + 10 * (IS/IS0) + 5 (IM/IMO) + 8 (TO/TOO) + 6 * (W/WO))  We request to take note of the above and amend the PV formula in the tender specification.	No Change. Tender Terms and conditions are prevail
23	TPSODL/OT/2021-22/074 / General Conditions of Contract/Clause no. 8.0. Security cum Performance Deposit Page No. 9 of 48	Guarantee (SPBG) in the format as per Annex (a) 5% of the PO value if purchase order value (b) 10% of the PO value if purchase order value				We request you to amend the clause as per the below: Associates shall submit within 15 days from the effective date of issue of PO/RC, Security cum Performance Bank Guarantee (SPBG) in the format as per Annexure B of this document from banks acceptable to TPSODL for:  (a) 1% of the PO value if purchase order value is more than Rs 5 Crores.  (b) 3% of the PO value if purchase order value is less than Rs 5 Crores. This shall remain valid till the end of the Guarantee Period of contract, plus one month.	No Change. Tender Terms and conditions are prevail