

POWER GRID COMPANY OF BANGLADESH LIMITED

Dhaka and Western Zone Transmission Grid Expansion Project

Design, Supply, Installation, Testing and Commissioning of new 400/230/132 kV GIS Substation at Purbachal on turnkey basis (Package-6)

(OCB No.PGCB/ADB/L3853 /DWZTGEP/GIS/P6)

CLARIFICATION NO.1

Pre Bid meeting was held on February 07, 2022 at 11:00 o'clock at the PGCB Headquarter.

All comments, queries and requests for clarification, regarding the Bidding documents, received from prospective Bidders, and relevant replies and clarifications prepared by PGCB, and associated addendums (if any), are part of Bid document.

Sl No	Reference and Queries of Prospective Bidders	PGCB's Reply/Clarification
1.	<u>Volume-I, Section 3 - Special Conditions of Contract, Page 8-11, 26. Clause 26: Completion Time Guarantee</u> Applicable rate for liquidated damages: 0.5% (zero point five percent) of the contract price or the relevant part thereof per week From the said clause, we understand 0.5% per week of Liquidated Damages shall be levied on undelivered portion of the contract price. Kindly confirm.	Your understanding is not correct. Liquidated Damages shall be calculated as per the provisions of the bidding documents.
2.	<u>Volume-I, Section 3 - Evaluation and Qualification Criteria, Page 3-4, 1.3.7 Domestic Preference</u> From the said clause, we understand that 15% will be loaded on foreign procured items ie., CIP price component during price evaluation To bring all bidder at par, we request to reduce/remove the Domestic preference. Kindly	Your request can not be accepted. Please follow the bidding documents.

	consider and confirm	
3.	Volume-I, Section 3 - Evaluation and Qualification Criteria, Page 3-11, Submission of Type test reports: As per the referred clause, bidder needs to enclose type test reports for power transformer, GIS, CRP SAS, disconnecting switch, current and voltage transformer, lightning arrester, Circuit breaker, XLPE Cable, Battery & Charger and communication panels and systems. Since the quantity of disconnecting switch, lightning arresters, circuit breakers, current and voltage transformers will be less. Hence, we request to the submission of type test for these AIS equipment in the bidding stage	Please follow the bidding documents.
4.	Volume-I, Section 3. Evaluation and Qualification Criteria, Page 3-9, Participation as a contractor, Joint Venture partner in at least three the Bidder's (or JV partner) participation under each contract exceeds 21.0 million USD. & Volume-I, Section 4: Bidding Forms, Page 4-42, Form EXP-1: Contracts of similar size and nature We understand the bidder need to fill the form "Form EXP-1: Contracts of similar size and nature" for bidder qualification. While filling the form, if contract value is in other currency then it should be converted to USD and the exchange rates will be as on date of award of that particular contract. Kindly confirm If our above understanding is not correct, kindly provide the methodology for considering exchange rates And also we request to provide the methodology for considering exchange rates for converting annual turnover and current contract commitments to USD	As per the Form EXP-1, Volume 1 of the bid documents "The exchange rate to be used to calculate the value of the contract for conversion to a specific currency shall be the selling rate of the Borrower's national bank on the date of the contract" As per the Form FIN-2, Volume 1 of the bid documents, "The information supplied should be the Annual Turnover of the Bidder or each member of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US dollars at the rate of exchange at the end of the period reported" As per the Form FIN-4, Volume 1 of the bid documents, "Remaining outstanding contract values to be calculated from 28 days prior to the bid submission deadline (\$ equivalent based on the foreign exchange rate as of the same date)."
5.	Volume-I, Section 6: Employers Requirements, Page 6 - 1, 1.3 Type test requirements Since type test validity is not provided in here. We understand that there is no limit on the type test validity	Your understanding is correct.
6.	Clause 2.5.1, "Evaluation and Qualification Criteria" Section 3, Vol.1 Qualification criteria for "Gas Insulated Switchgear (GIS)". "Manufacturer's proposed factory shall have at least fifteen (15) years of manufacturing experience All GIS shall be from same factory." We understand that the qualification requirement stated for the referred clause is applicable	Please follow the bid documents.

	only for 400kV GIS the GIS equipment of different voltage levels may be sourced from different suppliers/factories.	
7.	Clause 2.5.1, "Evaluation and Qualification Criteria" Section 3, Vol.1 Qualification criteria for "Power Transformer". "Manufacturer's proposed factory shall have at least twenty (20) years of manufacturing experience prior to the date of bid submission of 380 kV or higher voltage rating power transformer with minimum delivery of at least ten (10) nos. of similar or higher rating (kV, MVA) three phase/3-single phase Power transformer over the last ten (10) years outside the manufacturer's own country or in Bangladesh". We understand that 3 nos of single phase transformers of similar or higher rating (i.e. 250MVA) will be considered equal to 1 no of 3 phase transformer of similar or higher rating (i.e. 750MVA). Please confirm.	Your understanding is correct. The clause you have referred to is applicable for supply records of power transformers only. Please follow the bidding documents carefully.
8.	Volume-I, Section 7. General Conditions Page 7-12 GCC 10. Employer's Responsibilities We understand from the said clause that land for site office shall be provided by the employer to the contractor free of cost. Kindly confirm	Your understanding is not correct. The contractor shall be responsible for his site office.
9.	Volume-I, Section 7. General Conditions Page 7-10 GCC 9. Contractor's Responsibilities For the water and electricity for construction works, we request you to kindly confirm whether Water and Power for construction can be made available. Further we request you to kindly share the existing rates/tariffs for the same	It is the contractor's responsibility to arrange the water and electricity required for construction works. However, if requested by the Contractor, the Employer may assist the Contractor in obtaining permits and/or approvals from the respective utilities in this regard.
10.	Volume-I, Section 7. General Conditions Page 7-50 GCC 39.2 Changes Originating from the Employer 39.2.5 From the said clause we understand that if there is change of more than +/- 15% in the quantities of any item with respect to tender quantity then unit rates for those items shall be mutually decided between contractor and employer. Kindly confirm	Your understanding is not correct. Please follow the bidding documents
11.	Volume-I, Section 8: Special Conditions of Contract (SCC) Page 8-5 PC 14. Taxes and Duties PC 14.2 b In the said clause it is mentioned that Employer is not responsible for the payment of customs duties and VAT for the items imported for civil works material specified in price schedule No.4.	Your request can not be accepted. Please follow the bidding documents

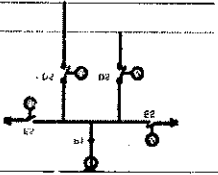
	In the same context we request you to kindly confirm that Steel structures / Super Structures required for buildings and foundation of equipment can be part of imported supply and waiver of customs duty and local VAT shall be applicable. Please confirm	
12.	Volume-I, Section 8: Special Conditions of Contract (SCC) Page 8-5 PC 14. Taxes and Duties PC 14.2 c From the said clause we understand that contractor at his own cost and expense shall secure any work permit, labor permit any other authorization which may be required by the Government of Bangladesh for the imported personnel of contractor and his subcontractor, however there shall not be any expatriate tax on such imported personnel of contractor or his subcontractor who may visit Bangladesh for short duration during execution of contract for supervision and other relevant works. Kindly Confirm	Please follow the bidding documents. Also, the bidders are requested to collect necessary information from the respective Government agency(ies) for clear understanding.
13.	Volume-I, Section 8: Special Conditions of Contract (SCC) Page 8-5 PC 14. Taxes and Duties PC 14.2 d From the said clause we understand that there shall not be any custom duty and other taxes as Local VAT etc. on imported contractor's equipment for purpose of testing & commissioning of the facilities under present scope of works if the imported contractor's equipment are brought back to contractor's/ subcontractor's country after completion of the testing and commissioning and not subsequently sold in Bangladesh. Kindly Confirm.	Your understanding is not correct. Please follow the bidding documents.
14.	Volume-I, Section 9: Contract Forms Page 9-12 Appendix 2 - Price Adjustment..... Power Transformers..... & Volume-I, Section 4 - Bidding Forms Page 4-16 Tables of Adjustment Data..... We understand that price adjustment is applicable only for power transformers and bidder has to fill table of adjustment data only for Power Transformers. However, as per tender specifications there is requirement of , 36kV (MV) & LV Cables also. We would like to bring to your kind attention that EHV, MV & LV Cables along with Power Transformers shall be adjusted with price variation formula since both have mainly Metals in their construction.	Your request can not be accepted. Please follow the bidding documents.

	We request PGCB to kindly provide the price adjustment formula for EHV, MV & LV Cables also	
15.	<u>Volume-I, Section 9: Contract Forms Page 9-14 Appendix 3 - Insurance Requirements.....</u> We understand that all the insurances mentioned in the tender clause can be purchased from any reputed Insurance company in Bangladesh. Kindly Confirm.	Insurances shall be taken as per the prevailing rules and regulations of the Government of Bangladesh.
16.	<u>Volume-I, Section 9. Contracts Forms Page 9-9 Appendix 1. Terms and Procedures of Payment</u> As per the payment procedures Foreign Currency payment shall be made through Letter of Credit (L/C). The charges for establishment of letter of credit shall be to PGCB's account. Please confirm	All costs in connection with the Letter of Credit inside Bangladesh shall be borne by the Employer and costs outside Bangladesh shall be borne by the Contractor
17.	<u>General</u> We understand the land for construction is already acquired by PGCB and PGCB will provide contractor encumbrance free land during award of contract. Any disputes arising against land acquisition of land provided by PGCB during construction of works will be taken care by PGCB. Kindly confirm.	Your understanding is correct.
18.	<u>General</u> We understand that PGCB shall provide water and electricity for construction works for free of cost at each sub-station location to Bidder. Kindly confirm whether our understanding is correct.	The Contractor shall have to arrange water and electricity for construction works at their own cost at each substation location.
19.	<u>General</u> If the lockdown is imposed due to any epidemic/pandemic situation in employer's country or contractor's country, in such cases whether contractor is eligible to get (i) a time extension to complete the works and (ii) reimbursement to cost implication incurring due to that?	Please follow the bidding documents.
20.	<u>General</u> Kindly provide the Soil Electrical Resistivity Parameters / Plot Size and ERT Data for the proposed SS.	The bidder shall be responsible for measuring the soil parameters like resistivity and others during execution to perform the contract as per bid requirement if awarded.
21.	<u>General</u> Kindly confirm the incoming line availability for commissioning of new substations.	Please follow the bid documents.

	Also, If commissioning of substations is delayed due to factors which are not attributable to contractor Kindly confirm whether Taking over (TOC) and DLP can start within next 3 months of completion of facilities.	
22.	Section 3 - Page 3-12 All GIS shall be from same factory We understand that this implies all equipment of a particular voltage rating shall be from the same factory. Different voltage level ratings may be from different factories as long as entire equipment of particular voltage level will be from one factory. Viz. 400kV GIS will be completely from one factory, 220kV GIS will be completely from one factory, 132kV GIS will be completely from one factory while different level GIS may not be from the same factory due to manufacturing constraints. Kindly confirm and clarify our understanding	Please follow the bid documents.
23.	Section 3 - Page 3-12 400/235/34.5 kV Power Trans-former In line with previous PGCB Bid: PGCB/ADB/ 3683 /400KV/BOG-RAH-GOP/SS We request that "Manufacturer's proposed factory shall have at least ten (10) years of manufacturing experience prior to the date of bid submission of 380 kV or higher voltage rating power transformer with minimum delivery of at least Six (6) nos. same or higher rating (kV, MVA) Power transformer over the last ten (10) years outside the manufacturer's own country or in Bangladesh." May be accepted as sufficient for qualification. Kindly Confirm	Please follow the bid documents
24.	Section 3 - Page 3-18 Outdoor/GIS Cable Sealing We request that evidence for similar or higher rating for at least one (1) project with a minimum of three (3) years in satisfactory service in outside the manufacturer's country as on the date of tender opening may be accepted. Kindly confirm	Please follow the bid documents

25.	Section 3: Evaluation and Qualification Criteria, 2.5.1 D) 1. "Satisfactory Type test reports as per clause 1.3 of Section 6: Employers Requirements of volume 1 of 3 of the bidding document for GIS with similar or higher rating (KV, rated current, short circuit current)." We understand that as per the qualification requirement indicated in clause no 2.5.1 D) 1 of Section 3, bidder has to submit the type test report of highest rating equipment only. Please confirm if our understanding is correct.	Bidder has to submit the type test report for each voltage level separately as per bidding requirement. For 400kV GIS- Type test report of Similar rating (kV, Rated Current, Short Circuit Current) GIS shall be considered as acceptable. For 230kV GIS- Type test report of Similar rating (kV, Rated Current, Short Circuit Current) GIS shall be considered as acceptable. For 132 kV GIS- Type test report of Similar rating (kV, Rated Current, Short Circuit Current) GIS shall be considered as acceptable.
26.	Section 6: Employers Re-quirements 1.3 Type Test Requirements Type test certificates of GIS, Circuit Breaker and Lightning Arrester shall be issued by STL member testing laboratories. We request to accept the Type test certificates of GIS, Circuit Breaker and Lightning Arrester, issued by any STL member testing laboratory or from manufacturer's own testing laboratory or independent testing laboratory and test carried out at manufacturer's own testing laboratory or independent testing laboratory must have been witnessed and certified by a representative from STL member testing laboratory.	Please follow the bidding documents.
27.	Clause 5.1, "Protection, Metering & Control and Substation Automation System" Section 5, Vol.2 "For standardisation of operating performance, facilities and spare requirements, the protection relays, control systems and Substation Automation System (SAS), together with complete panels, to be supplied under this project shall be manufactured by: ABB (Switzerland/Sweden), Alstom/GE (France/USA/UK), SEL (USA/UK/Canada), Siemens (Germany) or equivalent." We understand that the above mentioned suppliers are limited to Protection Relays and SAS. Complete panel may be sourced/assembled at other factories/Suppliers. Please confirm.	Your understanding is not correct. Please read the bidding document carefully.
28.	Item No: FS1-a, Schedule B1 36 Nos of Differential Protection Relay with backup Distance Protection & Directional Earth Fault Protection Functions are required as spare.	14 Nos. of Line Differential Protection Relay with backup Distance Protection & Directional Earth Fault Protection Functions are required as spare.

	The required quantity for spare seems to be very higher side. We request you to kindly recheck the requirement.	
29.	Item No: 1A13, Schedule B1 Kindly provide the detailed technical specification for Disc Insulator	Please follow the bidding documents.
30.	Item No: 1S1, Schedule B1 Kindly provide the detailed technical specification for Scissor Lift	Please follow the bidding documents.
31.	Item No: 1N4, Schedule B1 Kindly provide the detailed technical specification for CCTV with motion sensor.	Please follow the bidding documents.
32.	Item No: 1R1, Schedule B1 Kindly provide the detailed technical specification for 250kW DG set.	Please follow the bidding documents.
33.	Item No: 1D1, Schedule B1 Kindly provide the detailed technical specification for 33kV AIS Switchgear Equipments (CB,CT,VT,Isolator,LA)	Please follow the bidding documents.
34.	Item No: 1D1.x Both Auto-Transformers' Tertiary are loaded as per item no:1D1. Kindly re-check and update the requirement.	Please follow the bidding documents. Item No: 1D1.x of price schedule is for 36kV AIS Switchgears for unloaded tertiary Auto-Transformer Bays.
35.	Item No: 1L1 We presume that, Generator power supply shall be fed for dedicated ACDB panel. Please confirm the requirement.	Please follow the bidding documents.
36.	Purbachal grid substation lay-out drawing From the layout, the bus layout is crossed. We recommend rearranging the GIL according to our own design to avoid GIB crossing. Please confirm	The layout drawing provided in the volume 2 of the bidding document is for tender purpose only. This shall be finalized during detailed design and execution stage.
37.	GTP 1.2.1.1 GIS Switchgear 400 kV	Please follow the bidding documents.

	5-4-4 Damping resistor : Yes Normally, voltage transformers do not have damping resistors, so we request to revise this parameter to N.A. Kindly confirm.	
38.	"GTP 5-4-7-2 Secondary Box IP rating --IP 55 We request you to accept the ingress protection for all secondary box to IP54, as most of the manufacturer has this rating which is sufficient for outdoor use.	Please follow the bidding documents.
39.	Drawing In the single line drawing, it shows that two ES are in the same location which is not required technically. Hence, we request to accept one single ES. Please confirm. 	Please follow the bidding documents.
40.	Technical Specification-3.HV Switchgear and Outdoor Equipment/3-48 3.3.15.14. To reduce the effect of solar gain all SF6 or other types of insulated bus ducts exposed to direct sun-light shall be covered with metallic sun shielding, for part of outdoor installation. We understand that the sun shielding is not required for the GIL if the same is suitable for out-door operations. Please confirm.	Please follow the bidding documents.
41.	Transformer short circuit design In "GTP-Transformer" datasheet (item 3.3) short circuit design shall be done with 105% pre-fault voltage and infinite bus at HV, LV & TV (was 100% pre-fault voltage and grid strength acc. IEC). Also, as per specification cl.4.3.6.1.1.i the Pre-fault voltage is mentioned as 1.1 Um. Please clarify.	Notwithstanding the over current limits tabulated in IEC 60076-5, the transformer with the standard minimum percentage impedances given in the specification, shall be capable of withstanding the thermal, mechanical and other effects using the following criteria for calculating the short circuit withstand condition: i. Pre-fault voltage of 1.05 Um; ii. Source fault capacity shall be assumed to be infinite (zero impedance); iii. Fault duration of 2 s.
42.	Core hot spot temperature and absolute hot spot temperature, 1.2.4.1, 400/230/34.5 kV	To maintain Internal Hot-spot Temperature (Amb. Temp. + Top oil

[Signature]

[Signature]

[Signature]

[Signature]

	Autotransformer Max. core hotspot temperature in item 4.3.5 is specified $\leq 78^{\circ}\text{C}$ this contradicts the next item 4.3.6 indicating the absolute core hotspot of 130°C. <table border="1"><tr><td>4.3.6</td><td>Internal Hot-spot Temperature (Amb. Temp. + Top oil rise + Core hot spot)</td><td>$^{\circ}\text{C}$</td><td>130</td></tr></table> The absolute temperature from the given rise in item 4.3.4 is $= 78+40$ (ambient) $= 118^{\circ}\text{C}$. this con-tradicts to the 130°C given in item 4.3.6. Please clarify.	4.3.6	Internal Hot-spot Temperature (Amb. Temp. + Top oil rise + Core hot spot)	$^{\circ}\text{C}$	130	rise + Core hot spot) limit of 130°C, the bidder shall reasonably specify the allowable maximum hot spot temperature rises in core at rated power.
4.3.6	Internal Hot-spot Temperature (Amb. Temp. + Top oil rise + Core hot spot)	$^{\circ}\text{C}$	130			
43.	Core hot spot temperature and absolute hot spot temperature, 1.2.4.2, 230/135/34.5 kV Autotransformer Max. core hotspot temperature in item 4.3.6 is specified $\leq 78^{\circ}\text{C}$ this contradicts the next item 4.3.7 indicating the absolute core hotspot of 130°C. The absolute temperature from the given rise in item 4.3.6 is $= 78+40$ (ambient) $= 118^{\circ}\text{C}$. this contradicts to the 130°C given in item 4.3.7 Please clarify	To maintain Internal Hot-spot Temperature (Amb. Temp. + Top oil rise + Core hot spot) limit of 130°C, the bidder shall reasonably specify the allowable maximum hot spot temperature rises in core at rated power.				
44.	Schedules ; Item 1M : Civil works, Building and foundation We understand that site surveying and soil investigation is in scope of work. Please confirm and if our understanding is correct may include the same in schedule of civil works, building and foundation.	Site surveying and soil investigation costs are deemed to be included within the quoted price of the bidder.				
45.	Technical specification - 10A Buildings and Civil Engineering works, Cl. 10A.1.1, Scope of work - point (f) -page no 4 of 9 and schedule 1M - Civil works, Building and foundation Please confirm the capacities of under ground and over head water tank and may include in the schedule 1M - Civil works, Building and foundation.	Please follow the bidding documents.				
46.	Technical specification - 10A Buildings and Civil Engineering works, Cl. 10A.3.3, Drainage In the referred cluse, please confirm the type of open channels, concrete or brick.	Drainage system will be finalized during execution stages.				

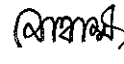
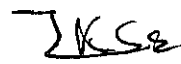








47.	Technical specification - 10A Buildings and Civil Engineering works, Cl. 10A.3.22, Transformer Bases Please confirm if wall type foundation can be provided for Transformer base.	Please follow the bidding documents.
48.	Purbachal grid substation lay-out drawing We understand that Ansar Barak building is not in bidder's scope, as the same is not indicated in Bid Price Schedule. Please Confirm	Please see Addendum-1
49.	400kV & 220kV GIS Building We understand that only provision of lift to be provided by bidder as the lift is not indicated in Bid Price Schedule. Please Confirm	Please see Addendum-1
50.	Volume 2, Section13, Clause 13.31.2 Air Cooled Split System Air Handling Units is mentioned in TS which require additional AHU room. We are considering the Ductable split with Ducting/Cassette Type/Hi-wall type split AC units which suffice the system design and have less maintenance cost and running cost. Please confirm.	Please follow the bidding documents.
51.	Volume 2, Section13, Clause 13.31.2 Standby AC units qty will be considered for 20% of required tonnage capacity for CRP Room/ Control Room only. For other room No Standby AC unit shall be considered. Please confirm.	Please follow the bidding documents.
52.	Volume 2, Section13, Clause 13.31.2 Air- Conditioning heat load calculation shall be done on the basis of max site temperature and unit will satisfactory work up to ambient temperature i.e. 50 deg C. Please confirm.	Please follow the bidding documents.
53.	Volume 2, Section13, Clause 13.31.2 We understand that No Heating system is envisaged for this tender. Please confirm	Please follow the bidding documents.

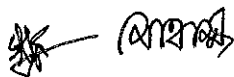
     

54.	Volume 2, Section13, Clause 13.31.3 We Understand that Exhaust Fan (Propeller type) with Cowl & Bird/Insect Screen shall be provided for 400/220KV GIS Hall. Please Confirm.	Please follow the bidding documents.
55.	Volume 2, Section13, Clause 13.31.2 As per referred clause, Compressed Air foam Supply Room shall be Air conditioned. As per our understanding the same is not required. Please check & clarify	Please follow the bidding documents.
56.	Price Schedule-1, Clause no. 1N3 Please clarify the type of Fire Detection System (Conventional or Addressable type) to be considered. Please confirm.	Conventional type of Fire Detection System may be considered.
57.	Price Schedule-1, Clause no. 1E4 & 1N3 As per referred clause of Price schedule, we understand that only following fire fighting system shall be envisaged for this tender: 1. CAFS of Fire Fighting System for 400/235/34.5 kV Auto-transformer with water feeding equipment 2. Fire Detection & Alarm System for 400KV GIS Building, 220KV GIS Building 3. Portable Fire Extinguisher Any other type of Fire Fighting system shall not be envisaged for any other building or facility. Please confirm	The following fire fighting system shall be envisaged for this tender: 1. CAFS of Fire Fighting System with water feeding equipment for 400/235/34.5 kV Auto-transformers & 230/135/34.5 kV Auto-transformers 2. Fire Detection & Alarm System for 400KV GIS Building, panel room & Control Room and 230KV cum 132kV GIS Building & panel room 3. Portable Fire Extinguisher
58.	Price Schedule-1, Clause no. 1N3, iii There is discrepancy in price schedule & Tender drawing. As per price Schedule Fire Fighting system for Control Room shall be provided, however as per tender layout, there is no separate control building. Please clarify.	Please follow the bidding documents.
59.	Price Schedule-1, Clause no. 1N3 We understand that, Hydrant system is not envisaged for this tender, as the same is neither mentioned in TS nor in price schedule, so we are not considering the same. Please confirm	Your understanding is correct.

60.	Volume-2, 10A.7 Fire Extinguisher, Table-1 We understand that Fire Extinguisher shall be provided as per referred clause. Quantity shall be as per Table-1 only. Please confirm.	Your understanding is correct.								
61.	General We are considering the Following Make/origin list for Fire Fighting System. Please provide confirmation on the same. <table><tr><th>Sr. No</th><th>Item Description</th><th>Make / Manufacture</th><th>Remarks</th></tr><tr><td>A</td><td>CAF System</td><td>Indian Make/Standard</td><td>Non UL Listed</td></tr></table>	Sr. No	Item Description	Make / Manufacture	Remarks	A	CAF System	Indian Make/Standard	Non UL Listed	Please follow the bidding documents.
Sr. No	Item Description	Make / Manufacture	Remarks							
A	CAF System	Indian Make/Standard	Non UL Listed							
62.	Vol 2 - 1.2.1.1- 400kV SLD As per vol 2 space provision shall be kept for future extension for 2 bus reactor bays, but in 400kV SLD there is no such provision kept for future extension. Please confirm.	Future bay provisions shall be as per schedule A: Scope of works.								
63.	Vol 2- 1.2.1.3, Vol 3 -1.1.1 and 132kV SLD As per 132kV SLD and vol 2, there is space provision for 2 nos. of future line bays, but in vol 3, there is no such provision. Please confirm.	Future bay provisions shall be as per schedule A: Scope of works.								
64.	General Please provide soil resistivity value for earthmat sizing.	Please follow the bidding documents.								
65.	General Please specify emergency load requirement for 110V DCDB.	Please follow the bidding documents.								
66.	230kV CUM 132kV GIS BUILDING- GROUND FLOOR PLAN As per our understanding cable cellar is required only for 132kV GIS. There is no requirement of cable cellar for 230kV GIS floor. Please confirm if we can propose separate GIS halls for 230kV and 132kv.	Please see Addendum-1								
67.	Vol 2 - 1.2.1.2- six (06) transformer bays (one spare bay) As per our understanding spare bay is required for 230/135/34.5 transformer. Please confirm.	Your understanding is correct.								

68.	General Please specify earth fault current and duration for 500kVA earthing/auxiliary transformer.	Please follow the bidding documents.
69.	Vol 2 Power cables and cable terminating accessories- 17B 10.8 Corrugated Seamless Aluminium Sheath Metallic sheath shall consist of the extruded corrugated seamless aluminum sheath. Please confirm if we can propose seam-welded corrugated aluminium sheath.	Please follow the bidding documents.
70.	Vol 2 Power cables and cable terminating accessories As per technical specification of clause 17B.10.6 metallic screen of copper wire screen shall be provided to carry short circuit current. Please note that corrugated aluminium sheath shall be capable of carrying short circuit current. Hence in case of corrugated aluminum sheathed cable copper wire metallic screen is not required. Please confirm	Please follow the bidding documents.
71.	Vol 2 Power cables and cable terminating accessories As per annexure 17B.2 metallic sheath short circuit current 40 kA for 3 second whereas 132 kV data sheet of S. No. 50 specify that metallic sheath short circuit current shall be minimum 90% of conductor capacity. So please confirm short circuit current of metallic sheath.	Metallic sheath earth fault current carrying capacity of 132kV XLPE Cable shall be minimum 40 kA for 3 second.
72.	Vol 2 Power cables and cable terminating accessories 132kV data sheet of S. No. 39 specify average XLPE insulation thickness 23-25 mm, the same insulation thickness has been specified for 230 kV cables. So please review insulation thickness for 132 kV cables and confirm.	For 132kV XLPE Cable bidders shall specify average XLPE insulation thickness to meet the technical specifications.
73.	Vol 2- 17 B 10.9 Vol 3 - 132kV XLPE cable Jacket of 132KV XLPE Cable is MDPE type as per vol 3 but in 132kV XLPE Cable GTP, Jacket is of HDPE type. Please confirm.	Outer covering material shall be MDPE.
74.	Technical specification-19. Drawing forming part of specification 19-4, Electrical Layout of Purbachal 400/230/132 kV GIS SS In the referred tender layout drawing, Open Store is shown but not included the same in schedule of civil works, Building and foundation. We understand the same is not in	Your understanding is correct. Only space provision shall have to be kept in the layout for store yard.

	Bidder's scope. Please confirm.	
75.	Based on site visit, 5m level difference encountered between outside road and site existing level. Site Level Difference Based on site visit, observed that there is a 5m level difference between outside road and site existing level. As the level difference is considerably high we request you to please confirm if the FGL of the plot can be maintained at a lower level than the outside road level.	Please follow the bidding documents.
76.	Volume 3, clause 1.2.1, SI No. 1A.1A1.iii : Control Switching Device As per VOLUME-2, Chapter 1, scope of work, clause 3.3.9.4.1 & 3.3.9.4.2, CSD, Controlled switching Device shall be supplied for 400kV circuit breaker of Transformer & Reactor bay only. However, as per referred clause CSD is required for feeder bay circuit breaker as well. Please clarify the actual requirement.	CSD shall be supplied for 400kV circuit breaker of Line Feeder and Transformer Feeder bays.
77.	Volume 3, clause 1.2.1, SI No. 1A.1A7 : Busbar extension module As per referred clause, only 2 sets of Busbar extension module are specified. However, as per bidder's understanding, for double busbar scheme with Bus-sectionalizer, 4 sets of Busbar extension modules are required to provide extension facility on both the sides. Please confirm whether bidder understanding is in order & issue suitable amendments.	Your understanding is not correct. Two sets of busbar extension modules shall be provided. One set shall be installed at one end of double busbar and another set shall be installed at the other end of double busbar of the 400kV GIS. One set shall comprise extension interface for both the busbars at one end in case of double busbar arrangement.
78.	Volume 3, clause 1.2.1, SI No. 1B.1B7 : Surge Arrestor We understand that the quantity of 198kV surge arrestors required are as follows: a. 230kV Feeder Lines - 6 Nos. b. 230kV Transformer Bays - 18 Nos. (15 nos. for Present Bays + 3 nos. for future Bays) However as per Layout (Drg No. PGCB/DESIGN/ 2021/PURBACHAL/E01), surge arrestor for future 450MVA trafo is not in present scope. Please Clarify the actual requirement.	The quantity of 198kV surge arresters is 24. Surge arrester for future 450MVA trafo is in present scope.
79.	Volume 3, clause 1.2.1, SI No. 1B.1B6 : Busbar extension module As per referred clause, only 2 sets of Busbar extension module are specified. However, as per bidder's understanding, for double busbar scheme with Bus-sectionalizer, 4 sets of Busbar extension modules are required to provide extension facility on both the sides. Please confirm whether bidder understanding is in order & issue suitable amendments.	Your understanding is not correct. Two sets of busbar extension modules shall be provided. One set shall be installed at one end of double busbar and another set shall be installed at the other end of double busbar of the 230kV GIS. One set shall comprise extension interface for both the busbars at one end in case of double busbar arrangement.



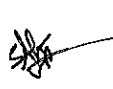




80.	Volume 3, clause 1.2.1, SI No. 1C.1C6 : Busbar extension module As per referred clause, only 2 sets of Busbar extension module are specified. However, as per bidder's understanding, for double busbar scheme with Bus-sectionalizer, 4 sets of Busbar extension modules are required to provide extension facility on both the sides. Please confirm whether bidder understanding is in order & issue suitable amendments.	Your understanding is not correct. Two sets of busbar extension modules shall be provided. One set shall be installed at one end of double busbar and another set shall be installed at the other end of double busbar of the 132kV GIS. One set shall comprise extension interface for both the busbars at one end in case of double busbar arrangement.
81.	Volume 3, clause 1.2.1, SI No. 1C.1C3.v : Current Transformer As per SLD (Drg no. PGCB/DESIGN/2021/PURBACHAL/E04), we understand that two Sets of 145kV current transformers are required for Bus Coupler bays. However, as per referred clause only one Set is mentioned. Please confirm whether bidder understanding is in order & issue suitable amendments as required.	For each set of Bus Coupler bays the number of 145kV current transformers shall be 6.
82.	Volume 3, clause 1.2.1, SI No. 1C.1C4.v : Current Transformer As per SLD (Drg no. PGCB/DESIGN/2021/PURBHACHAL/E04), we understand that two Sets of 145kV current transformer are required for Bus Section bays. However, as per referred clause only one Set is mentioned. Please confirm whether bidder understanding is in order & issue suitable amendments as required.	For each set of Bus Section bays the number of 145kV current transformers shall be 6.
83.	Volume 3, clause 1.2.1, SI No. 1C.1C7 : Surge Arrestor As per the referred clause & SLD (Drg no. PGCB/DESIGN/2021/PURBHACHAL/E04), the quantity of 120kV surge arrestors required are as follows: a. 132kV Feeder Lines - 18 Nos. b. 132kV Transformer Bays - 6 Nos. (2 nos. for Present Bays) We understand that surge arrestor for future 450MVA trafo is not in present scope. Please confirm whether bidder understanding is in order.	Your understanding is correct.
84.	Volume 3, clause 1.2.1, SI No. 1K.1K1.ii.a : 110V Battery Bank As per referred clause, 400Ah battery is mentioned for 230kV SS. However, as per Volume 3, clause 1.2.5.41, SI No. 1.13, 500Ah battery is required for 230kV SS. As the requirements are contradicting, Please clarify the actual requirement.	The capacity of the batteries given in item no. 1K1, clause 1.2.1, Volume 3 of the bidding document is for tender purpose only. During execution stage the battery capacity shall be confirmed with calculation by the contractor considering the bays under scope of work and future bays. The battery with higher capability, if required after calculation, shall be supplied by the Contractor within the same Contract price.
85.	Volume 3, clause 1.2.1, SI No. 1K.1K2.i : 48V Battery Bank	The capacity of the batteries given in item no. 1K2, clause 1.2.1,

	As per referred clause, 200Ah battery is mentioned for 48V DC system. However, as per Volume 3, clause 1.2.5.41, SI No. 1.13, 150Ah battery is required for 230kV SS. As the requirements are contradicting, Please clarify the actual requirement.	Volume 3 of the bidding document is for tender purpose only. During execution stage the battery capacity shall be confirmed with calculation by the contractor considering the bays under scope of work and future bays. The battery with higher capability, if required after calculation, shall be supplied by the Contractor within the same Contract price.
86.	Volume-3, clause 1.2.1, SI No. 1B1.III As per referred clause, 245kV, 3150A, 50kA/3s, three phase busbar disconnector with earth switch complete with motor operating mechanism is mentioned. However, we propose separate disconnector and Earthing switch for 230kV GIS based on earlier PGCB projects. Please confirm acceptance.	Separate disconnector and Earthing switch for 230kV GIS are acceptable.
87.	Volume-3, clause 1.2.1, SI No. 1C1.III As per referred clause, 145kV, 2500A, 40kA/3s, three phase, three positions, busbar disconnector with earth switch, complete with motor operating mechanism is mentioned. However, we propose separate disconnector and Earthing switch for 145kV GIS based on earlier PGCB projects. Please confirm acceptance.	Separate disconnector and Earthing switch for 145kV GIS may be acceptable. However, both electrical and mechanical interlocking between disconnector & earthing switch shall be available.
88.	Schedule B1,1A11, 400kV Wave trap Phase to phase coupling is required as per Volume-2, Chapter 15, Power Line carrier, Teleprotection and Communication Equipment, Clause 15.1.3.(b). However as per Layout (Drg no. PGCB/DESIGN/2021/PURBACHAL/E01) and Telecommunication Diagram (PGCB_DESIGN_2021_PURBACHAL_E24), wave trap is indicated in Y-phase alone. Please clarify the actual requirement.	Wave trap shall be installed in Y-phase of each circuit.
89.	VOLUME-2, Chapter 1, Scope of work, Clause 1.2.1 As per referred clause, The scope of works shall also include Transient study to ascertain Over-voltages & mitigation techniques to control the over-voltages for the substations. We understand that only system studies are in scope of the bidder and we do not envisage any software license and training for the same. Please confirm whether bidder understanding is in order.	Please follow the bidding documents.
90.	Volume-2, Chapter 19, Substation Automation System Architecture, Drg no. PGCB/DESIGN/2021/PURBACHAL/E22 As per volume 2, clause 1.2.1.11, telecontrol and telemetering facilities needs to be provided at existing NLDC at Rampura and Biddyut Bhaban, however, as per referred	The actual requirement is to complete design, supply, delivery, installation, testing & commissioning of hardware and software to provide the telecontrol & telemetering facilities required at the existing National Load Dispatch Center (NLDC) at Rampura and Siddhirgaj for integration of complete new 400/230/132kV substation.

	drawing, integration at Siddhirgaj and Rampura NLDC is required. Please clarify the actual requirement & location of NLDC.	
91.	Volume-2, Chapter 19, Telecommunication Diagram, PGCB_DESIGN_2021_PURBACHAL_E24 As per referred Diagram, We understand that Remote end side wave traps are also under present scope of work. However, as per volume 3, clause 1.2.1, SI. No. 1A11, only 4 Nos. of wave trap are mentioned. We presume that 2Nos. are for Purbachal end & 2Nos. are for Kaliganj end. Please confirm.	Please follow the bidding documents.
92.	Volume-2, Chapter 19, Protection SLD & Trip Logic of 132kV GIS Substation with Double bus arrangement for line feeder_Drg no. PGCB_DESIGN_2021_PURBACHAL_E06 As per volume 3, clause 1.2.2.1, SI No. 2.2.5, auto reclosing for 132kV line bay circuit breaker is mentioned as 1 Phase + 3 Phase. However, as per referred drawing only 3 Phase auto reclose needs to be used in 132kV GIS. As the requirements are contradicting, please clarify the actual requirement.	The requirement of auto reclosing for 132kV line bay circuit breaker of GIS is 1 Phase + 3 Phase.
93.	Volume-3, clause 1.2.1, SI No. 1H1 & 1H2 : Gas Insulated line (GIL) We presume that the quantity mentioned in the referred line item is inclusive of both Indoor & outdoor Gas insulated busducts. Please confirm.	GIL length shall be counted from the end of the last GIS equipment toward line entry to the bottom of the bushing at the GIL terminal for each phase of each circuit.
94.	Volume-3, clause 1.2.2.4, SI No. 37, 132kV XLPE cable & Volume-3, schedule B1, SI No. 1H3.ii As per referred clause, current rating for 132kV XLPE cable is mentioned as 2000A and as per BPS 132kV GIS bay shall be suitable for terminating 1 runs per phase. However, we understand that multiple runs may be employed in order to meet the ampacity inline with the provisions of BPS. Please confirm whether bidder understanding is in order & issue suitable amendments.	The minimum required nominal current rating of 2000A shall have to be met and for this, if required, higher than 2000mm ² cross-sectional cable may be offered.
95.	Volume-3, clause 1.2.1.2, SI. No. 2.20 : Capacitive voltage transformer Please furnish the capacitance value for 400kV Capacitive voltage transformer.	Please follow the bidding documents.
96.	Volume-2, clause 3.3.8.2 : Circuit Breaker operating mechanism	For 230kV Circuit Breaker of GIS motor wound spring or hydraulic or spring & hydraulic operated mechanism may be acceptable.

	As per the referred clause, please clarify the below requirements for circuit breaker operating mechanism: 1. For 230kV Circuit Breaker- i) As per volume-3, clause 1.2.2.1, SI No. 2.2.17.1, motor wound spring type mechanism is required for breaker. ii) As per volume-3, clause 1.2.1, SI No. 1B.1B1.ii, spring/hydraulic/spring & hydraulic mechanism is mentioned. 2. For 132kV Circuit Breaker- i) As per Volume-3, clause 1.2.2.1, SI No. 2.2.17.1, motor wound spring type mechanism is required for breaker. ii) As per volume-3, clause 1.2.1, SI No. 1C.1C1.ii, spring mechanism is mentioned. However, as per referred clause, Circuit breakers shall be complete with spring or hydraulic or spring & hydraulic operated mechanisms are acceptable. As the requirements are contradicting, please clarify the actual requirement	For 132kV Circuit Breaker of GIS motor wound spring operated mechanism are acceptable.
97.	Volume-3, clause 1.2.1, SI No. 1C.1C1.ix : Local Control Cubical We understand that integrated local control cubical is also acceptable for 145kV GIS. Please Confirm.	Integrated local control cubicle is also acceptable for 145kV GIS.
98.	VOLUME-2, Chapter 1, Scope of work, Clause 1.2.1 & VOLUME-3,1. Schedule A : Scope of Work, Clause 1.1.1 As per Volume-2, clause-1.2.1, it is mentioned that the scope involves, 400/230kV GIS substation & associated three (3) buildings and civil works. As per Volume-2, Clause-1.2.1.13, it is mentioned that "construction of 400kV, 230kV & 132kV GIS and control buildings, and Fire suppression water feeding (CAFS)" As per Volume-3, clause-1.1.1, it is mentioned that Complete civil works and facilities for two new GIS building for 400kV & 230/132 kV GIS and control building separately. As per Layout drawing, 400kV GIS Hall, 230/132kV GIS Hall, DG room and Transformer Fire suppression CAF feeding room are shown. As the requirements are contradicting, we understand only the following buildings shall be	Please see Addendum-1









	in the scope of this package as per BPS schedule-B4: a) 420kV Indoor GIS Building including Protection & Metering Room, Control Room, 110V Battery Room, 48 Battery Room and Warehouse b) 245/132kV Indoor GIS Building including Protection & Metering Room & 110V Battery Room c) Emergency Aux. power Room & Water feeding Room (CAF -cum-DG room) Please confirm.	
99.	VOLUME-2, Chapter 1, Scope of work, Clause 1.4.3 As per referred clause, Creepage distance for proposed station is given as 31mm/kV. However in various parts of the specification (Transformer, GIS etc.) creepage distance is indicated as 25mm/kV. As there is a discrepancy, please confirm the actual requirement.	Creepage distance shall be 31mm/kV
100.	VOLUME-2, Chapter 1, Scope of work, clause 1.2.1.1, 1.2.1.2 & 1.2.1.3 & VOLUME-2, Chapter 3, HV Switchgear and Outdoor equipment, clause 3.3.1.45.3 As per referred clause, we understand that one interface module with double isolator & earth switch in-between at both ends need to be provided for future extension while as per clause 3.3.1.45.3, one interface module with isolating link also needs to be provided. We understand that only double isolator & earth switch needs to be provided, as disconnecter will provide the function of isolating link. Please confirm whether bidder understanding is in order.	Busbar extension/interface module at both ends of GIS bus shall be comprised with sufficient buffer gas compartments and appropriate disconnect facilities for extensions without de-energization of complete GIS.
101.	VOLUME-3, 1.2.2.1 GIS Switchgear 230kV, SI No.1.2.12.1.2 As per referred line item, Digital type density monitor to be supplied for CB. Please specify what does "digital" density monitor means. Is it a density monitor with RS 485 signal output (or) just conventional temperature compensated density monitors with two alarms levels?	Please follow the bidding documents.
102.	VOLUME-2, Chapter 3, HV Switchgear and Outdoor equipment, Clause 3.3.13.14 As per referred clause, We would like to clarify following points : 1) GIS manufacturer can not supply neutral current transformer for power transformer 2) NCT supplied by GIS manufacturer can not be used for transformer Request client to kindly accept the different manufacturer for NCT and GIS system.	Please follow the bidding documents.

103.	VOLUME-2, Chapter 3, HV Switchgear and Outdoor equipment , Clause 3.3.14.7 As per referred clause, Voltage transformers on feeder circuits shall be located on the feeder side of the circuit breaker outside the protected zone covered by the busbar protection. However, as per BPS we understand that only AIS type Capacitive voltage transformer and AIS type Surge arrestor for all 400kV, 230kV line feeder bays are in present scope of supply. Please confirm whether bidder understanding is in order.	Please follow the bidding documents.
104.	VOLUME-2, Chapter 3, HV Switchgear and Outdoor equipment, Clause No.3.3.1.22 As per referred clause, "The GIS shall be designed, so as to take care of the VFT over voltages generated as a result of pre-strikes and re-strikes during isolator operation. Maximum VFT over voltages peak shall not be higher than rated lightning impulse withstand voltage (LIWV) of the equipment. Necessary measures shall be under taken by GIS manufacturer to restrict maximum VFT over voltages lower than the LIWV. Manufacturer shall submit the study report of VFTO generated for GIS installation". However, as per clause no. 3.3.3.1.7.1 Study report of VFTO generated for GIS installation for 400 kV and above only. In this regard, we understand that VFTO study report is not required for 230kV & 132kV GIS. Please confirm.	Your understanding is correct.
105.	VOLUME-2, Chapter 5, Protection , Metering & Control and Substation Automation System, Clause 5.9.1 As per referred clause , We understand that Differential protection with in built distance protection needs to be provided for Overhead transmission line. Please confirm whether bidder understanding is in order.	Your understanding is correct.
106.	Remote End CRP & SAS Please clarify the following : a) Please confirm whether remote end line differential protection relays are in the scope of this package. b) If the remote end relays are already available, please confirm the make & model number c) If the remote end relays are not available, we presume only loose supply of remote end relays are to be supplied under this scope. d) Any installation on to the existing C&R panels, retrofitting & augmentation of the existing SAS are not considered in the scope of works. e) If SAS Augmentation & retrofitting are required, please confirm the make & model number of the existing SAS.	Only loose supply of remote end line differential protection relays are in the scope of this package. If make & model of the line differential relay at Kaliganj Substation (which will be constructed under the scope of another package) differ from that of the line differential relay offered under this package, the contractor of this package shall have to install and commission the line differential relay at Kaliganj 400kV line bay in Purbachal Substation with the line differential relay supplied from PGCB, i.e., Line differential protection shall be established for Purbachal - Kaliganj 400kV Line feeder, within the contract price. No additional payment shall be made in this regard.

107.	General We presume that DSLP, Lighting, Cable trench & other associated works are required to be executed only for the present scope of works and the same are not required for future bays and future areas. Please confirm.	DSLP is required to be executed only for the present scope of works and the same is not required for future bays and future areas. But cable trench and lighting are required to be executed for both the present scope of works and the future bays and future areas.
108.	Transmission Line length Please specify the following transmission line length from proposed Purbachal substation : a) 400kV lines to Kaliganj 1 & 2 b) 400kV lines (spare lines - 2 nos.) c) 220kV lines (Spare lines - 2 nos.) d) 132kV lines (spare lines - 6 nos.)	Transmission Line length may be provided during the execution stage as per requirement.
109.	Volume-2, Section-3, Clause No.3.3.15.3 As per referred clause, "All bushings shall be Resin Impregnated Paper (RIP) bushings with silicon composite housing.". However, Normally SF6 to air bushing shall be provided for GIS which is universally acceptable by all utilities. We request PGCB to accept the same in place of RIP bushings.	Please follow the bidding documents.
110.	Volume-2, Section-3, Clause No. 3.3.15.14 As per referred clause, " To reduce the effect of solar gain all SF6 or other types of insulated bus ducts exposed to direct sunlight shall be covered with metallic sun shielding, for part of outdoor installation." In this regard, if Bidder proves that the temperature rise is within the limits either by calculation (or) based on the result of simulation of temperature rise due to solar flux, then Sunshielding will not be provided. Please confirm whether Bidder's understanding is in order.	Please follow the bidding documents.
111.	Volume-2, Section-3, Clause No.3.3.29 We understand that the type test need not be repeated for 400kV, 230kV & 132kV GIS, if bidder can substantiate with valid type test reports of similar or higher rated equipment (kV, rated current, short circuit current) issued by any STL laboratory or manufacturer's own testing laboratory or independent testing laboratory witnessed and certified by a representative from STL member laboratory. Please confirm whether bidder's	Please follow the bidding documents.

	understanding is in order.	
112.	Volume-2, Section-3, Clause No.3.4.3.16 - Portable Lightning Arrester Diagnostic System (PLADS) As per referred clause, "Contractor shall provide two PLADS (one per S/S) to diagnose of the aging state of lightning arrester for condition test and MRE." As there is only one substation in the present scope, we presume that One PLADS is sufficient for the substation under this package. Also, there is no line item in the BoQ for the above item. Please check and include the same in the BPS, if required.	The requirement is as per BPS.
113.	Volume-2, Section-3, Clause No.3.3.7.15 - Partial Discharge & Volume-3, clause 1.2.1, SI No.1A8 -Standalone Partial Discharge measurement and analyser system for Complete GIS As per referred clauses of technical specification, we understand that one portable PD measuring and analyser device shall be provided as common for all the voltage levels 400kV, 230kV & 132kV GIS. Online PD Monitoring device is not required for this package. Please confirm whether Bidder's understanding is in order.	Your understanding is correct.
114.	Volume-2, Chapter 8, Clause No.8.8 - Insulation Monitoring System As per referred clause, we understand that Insulation Monitoring System need to be supplied under present scope of work while same is not given in BPS. If required, please add a separate line item in the price schedule.	The requirement is as per Bid Price Schedule (BPS).
115.	Volume-2, Chapter 7, Clause No.7.7.2 - Earthing Design Requirement As per referred clause, It is mentioned that " The earthing system shall be sized to ensure the temperature rise is limited so as not to cause failure of the electrode, conductor or joints. The maximum design or operating temperature for bare copper and joints is 300 °C. ". However, as per IEEE 80 Table-I, Fusing temperature for copper is 1084 °C. We request PGCB to accept the same as per IEEE 80.	Please follow the bidding documents.
116.	Volume-2, Chapter 17, Annex 17B.2, HV Cable types used	Please follow the bidding documents.

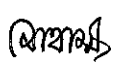
	As per referred clause, Min. Short circuit rating of metallic sheath for 132kV cable is indicated as 40kA for 3sec. As the requirement is higher for 132kV level, we request PGCB to recheck the requirement & propose suitable amendments with regards to both STC & its duration.	
117.	Auto-Transformer : Tap Step As per Volume-3, 1.2.4 D , Transformers, Sl.no. 2.4.11 Tapping step/Size of Each tapping step is given as 1.25. However as per volume-2, clause 4.7.2.2.1, the same is given as "high voltage winding in 17 steps of approximately 5/8 (0.625) % each". As the requirements are contradicting, please clarify the actual requirement.	Tapping step/size of each tapping step shall be 1.25%.
118.	Volume-2, Section-4 - Clause No. 4.16.11 Oil Storage (Tanks and Bags) a) As per referred clause, "the Contractor shall supply the first filling of transformer oil. It is envisaged that the oil will be supplied to site in 200kg drums and filtered by use of the plant described in the preceding paragraph into a storage tank prior to transfer again via filter plant into the transformer." In this regard, we shall provide the first filling of transformer oil to site in 200kg. However, no separate storage tank shall be provided. If any separate storage tank is required, please add a separate line item in the BoQ. b) Further, as per referred clause, "Contractor shall also provide a rubber oil bag (pillow type) for MRE at Purbachal substation, which shall be able to contain the oil capacity more than the oil quantity of the biggest transformer". However, no separate line item in the price schedule for the same is given. If required, please add a separate line item in the price schedule.	Please follow the bidding documents.
119.	Volume-3, Price schedule- B1 - Item No. 1E4 We understand that the Power transformer fire protection for all new GIS stations shall be compressed Air foam system (CAFS) only. We do not envisage any water spray system & water mist fire protection system in this contract as mentioned in the technical specification, Volume-2, Chapter 4, clause no. 4.15.3 & 4.15.4. Please confirm whether bidder's understanding is in order.	Your understanding is correct.
120.	Volume-2, Section-4 - Clause No. 4.17.1.1 & 4.17.2.8 As per referred clause, "The following type tests shall be conducted on the first power transformer in a single FAT schedule:". Further, as per clause no. 4.17.2.8 "The following tests shall be performed on each unit in accordance with IEC Standards 60076-1."	Please follow the bidding documents.

	However, as per Vol.1, Section-6, Clause No. 1.3 , type test certificates of the equipment of similar or higher specifications (voltage & capacity) shall be provided which shall be issued by STL member testing laboratories or from manufacturer's own testing laboratory or independent testing laboratory. Test carried out at manufacturer's own testing laboratory or independent testing laboratory must have been witnessed and certified by a representative from STL member testing laboratory. In this regard, Valid type test reports shall be submitted as per Vol.1, Section-6. Repetition of type tests are not envisaged. Please confirm.	
121.	Volume-2, Section-4 - Clause No. 4.17.1.1 & 4.17.1.3 - Type test & Special Tests As per referred clause, Type test shall be conducted on the first transformer in a single FAT. However, as per clause no. 4.17.2.8, Tests shall be performed on each unit in accordance with IEC Standards 60076-1. As there are discrepancies in the above clauses please clarify the following: a) As per clause no. 4.17.1.3 (Special test), it is not mentioned that whether special test need to be conducted on first transformer (or) on each unit. In this regard, we propose that type test & special test of transformer shall be conducted on only first unit if required. Please accept the same. b) Further, as per Vol.1, section-6, Only type test report need to be submitted for similar or higher specification. In this regard, please clarify whether type test & special tests for transformer need to be re-conducted during detail engineering (or) only test reports are sufficient?	Please follow the bidding documents.
122.	Volume-2, Section-17 - Clause No. 17B.10.8 Corrugated Seamless Aluminium Sheath As per referred clause, "Metallic sheath shall consist of the extruded corrugated seamless aluminium sheath" In this regard, proposed metallic sheath shall consist of the seam-welded aluminium sheath instead of extruded corrugated seamless aluminium sheath as the same is universally acceptable and accepted in earlier PGCB projects also. We request PGCB to accept both Seamless & Seam-welded Aluminium sheaths.	Please follow the bidding documents.
123.	Volume-3 - Technical data sheet, clause no.1.2.2.4, 132kV XLPE Cable - Type of curing (dry) - VCV We request PGCB to accept cables manufactured using Catenary continuous vulcanizing (CCV) process also. Please confirm.	Please follow the bidding documents.

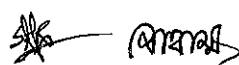
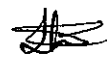
124.	Volume-3 - Technical data sheet, clause no.1.2.2.4, 132kV XLPE Cable - Longitudinal water tightness & Radial moisture barrier As per referred data sheet, Following two type of layers are asked for 132kV Power cable. a) Longitudinal water tightness b) Radial moisture barrier However, these layers are not mentioned in the technical specification, section-17, Clause no. 17.10 Cable Specification. In this regard, please check and confirm the requirement of above layers.	Please follow the bidding documents.
125.	Volume 2, chapter 19, Telecommunication Diagram (Drg. No.PGCB_DESIGN_2021_PURBACHAL_E24) Please confirm the following points based on referred drawing: i) FOTE interfaces are not required for 400kV spare lines ii) 230kV spare lines 1 & 2 are Basundhara lines only and FOTE interfaces are required for the same iii) FOTE interfaces are not required for 132kV spare lines	Please follow the bidding documents.
126.	"Volume-2. Section-14 - Clause No.14.4 General Requirements & 14.6.1 Vol.3 - Technical data sheet , clause no. 1.2.5.43 Fibre Optic Multiplexer Equipment" "As per the referred clause ""optical STM-1 aggregate interfaces on 155Mbit/s shall be available."" Further, as per clause no. 14.6.1, The following SDH interfaces shall be available: i) STM-1/4 for 132kV & lower voltage level ii) STM-4/16 for 230kV voltage level iii) STM-16 for 400kV voltage level As per data sheet, Transmission capacity shall be STM-4. In this regard, please check and confirm the transmission capacity for 400kV & 230kV Lines."	The following SDH interfaces shall be available: i) STM-4 for 132kV voltage level ii) STM-4/16 for 230kV voltage level iii) STM-16 for 400kV voltage level
127.	Technical Specification –Section-4, cl.no.4.7.2 On-Load Tap Changers	Please follow the bidding documents.

	As per referred clause, it is mentioned that " The OLTC shall be installed inside the main tank. Current making and breaking switches [i.e., diverter switches] associated with the tap selectors or otherwise where combined with tap selectors shall be contained in a tank in which the head of oil is maintained by means of completely independent of that on the transformer itself for Oil type OLTC and the same [i.e., diverter switches] shall be in vacuum for Vacuum type OLTC. Details of maintaining oil separation, oil levels, detection of oil surges and provision of alarm or trip contacts will be dependent on the design of tap-changer and be to the approval of the Engineer." However , we shall provide the same as follows: The position of OLTC is inside the main tank but inside a separate chamber. Hence, Oil in OLTC is separated from the main tank Oil. Please give your acceptance.	
128.	Technical Specification –Section 4. Power Transformers, cl.no.4.3.6.2 Calculations and Tests In the referred clause, it is mentioned that "Evidence shall be submitted with the Bid as to the extent to which the Manufacturer has proved, or is able to prove, by test, or by calculation, the ability of the specified Transformers to withstand short circuit". We understand that the dynamic short circuit test report as per Vol.1, Section-6, clause no. 1.3 shall be submitted along with the bid. The calculation shall be submitted during design review after award of contract. Please confirm whether bidder's understanding is in order.	Please follow the bidding documents.
129.	Volume -2, Section -6 ,Cl.no.6.12.4, Trays and Racks As mentioned in referred clause, cable trays are to be perforated. Kindly confirm whether ladder type cable trays shall be used instead of perforated trays.	Please follow the bidding documents.
130.	Volume -2, Section -6, Cl.no.6.12, Cables Supported on Racks, Trays, Etc.: Cable laying in trenches We propose to lay cables on support angles in outdoor trenches. For control building, cables shall be laid in trays. Please confirm.	Please follow the bidding documents.
131.	Volume -2, Technical Specification – 7. Earthing System and Lightning Protection, cl.no.7.7.8 As per referred clause, we request PGCB to furnish the X/R ratio which need to considered for Earthing design of all new substations, as the same is not mentioned in the referred	It will be provided during detailed design and execution stage.

	specification.	
132.	Technical Specification – 7. Earthing System and Lightning Protection, cl.no.7.8.9 As per referred clause, we understand that when compound wall is used as property fence, then bidder shall adopt separately earthed fence. Please confirm	Please follow the bidding documents.
133.	Insulator Please confirm whether bidder can propose long rod polymer insulator instead of disc insulator. Please furnish the technical specification for the same.	Please follow the bidding documents.
134.	Dismantling work We are not envisaging any dismantling work in New & extension stations. Please confirm.	Please follow the bidding documents.
135.	Volume-3 : Technical data sheet ,1.2.1 A: GIS Switchgear 400kV, SI No. 2-29-16, Page No. 57 & 1.2.2 B: GIS Switchgear 230kV, SI No. 2.4.15, Page No. 93 As per referred clause, IP Protection of Weatherproof, corrosion resistance enclosure is as follow: a) 400kV - IP 55 b) 230kV - IP 55 c) 132kV - IP 55 In this regard, please check and confirm whether standard solution as specified below can be acceptable. Regarding indoor GIS: Enclosure (Pressure vessel: IP67 for all 400kV, 230kV & 132kV GIS. Density monitor: IP 65 for all 400kV, 230kV & 132kV GIS. Mechanism drive box of DS/ES/FES: IP43 for all 400kV, 230kV & 132kV GIS. Mechanism drive box of CB: IP43 for 400kV / IP33 for 230kV GIS. LCC: IP4X for all 400kV, 230kV & 132kV GIS.	Please follow the bidding documents.
136.	General Please furnish the standard GA drawings (Plan & Section) for 33kV switchyard.	Please follow the bidding documents.

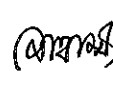
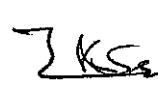
137.	Volume 2 of 3, Scope of work '1.2 As per referred clause, geotechnical studies and soil investigation are in contractor's scope of work. However in price schedule there is no separate line item for the same. Kindly add an item for the same in price schedule.	Soil investigation costs are deemed to be included within the quoted price of the bidder.
138.	Volume 2 of 3, scope of work 'Cl.no: 10B.6, 1.2.1.13 (Land Development, Civil Works, Building and Foundation) As per referred clause, Land development work is in bidder's scope for all New SS. Kindly provide the following details for all S/S in order to estimate the quantum of work. 1. Contour survey (if available) 2. Soil investigation report (if available) 3. FGL for the proposed SS 4. High Flood Level	Estimating the quantum of work is the bidder's responsibility. Corresponding contract clause shall be applicable.
139.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10A.3.1 & 10B.3.1 As per clause 10A.3.1, it is mentioned that the horizontal earthquake force is 0.1G. However in Cl.no : 10B.3.1, the same earthquake force is mentioned as 0.2G. Please clarify, which one is to be considered for design.	Please follow the bid document.
140.	Volume 2 of 3, Technical specification, Section 11(Supporting Structures for Outdoor Equipment) '11.7.4 We presume that, the galvanisation thickness for structures is 610g/sq.m for all proposed substations. Please confirm.	Please follow the bid document.
141.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10B.3 We trust that, the buildings shall not be designed with future floor load, as the same is not mentioned in the specification. Please confirm.	All future loads shall be considered for building design. Future floor requirements shall be finalized in the execution stage as per scope of bid.





	If the building to be designed considering future floor loads. Please furnish the future floor requirements.	
142.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10B.3.28 In referred clause, the reinforcement grade is mentioned as Fe 415. We propose to use higher grade of Fe500 in design and supply instead of Fe 415, as it is not readily available in market. Please confirm.	Mentioned reinforcement grade (Fe 415) is minimum grade.
143.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10B.3.4 e We wish to inform that, the detailed pile foundation specification is not attached with tender document. please provide the same, in order to ascertain the quantum of work.	Please follow the bid document.
144.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10B.1.6.1 As per referred clause, it is mentioned that On each major site the Contractor shall provide an office of approx size 5 x 8m. However in price schedule there is no separate item given for the same. Kindly add an item for the same in price schedule if required.	Site office costs are deemed to be included within the quoted price of the bidder.
145.	'Volume 2 of 3, Electrical layout of PURBACHAL 400/230/132kV GIS SS & Price shedule (Schedule B4 (Purbachal)) '19.2.1 Purbachal substation drawing list 1.PGCB/DESIGN/2021/PURBACHAL/E01 & 1M2 ix In referred layouts, 5nos of Blast walls are indicated. However in price schedule 4 nos of blast wall wih foundation only given. Kindly include the total nos of Blast walls in Price schedule.	Please see Addendum-1

146.	Volume-2 of 3, Technical specification Sec-10 (Buildings and Civil Engineering Works) '11.2 (STRUCTURE ARRANGEMENT) We trust that, all girders, towers and equipment support structure shall be of steel lattice type connected with their foundation by foundation bolts with base plate. Please confirm.	Please follow the bid document.
147.	Volume 3 of 3, scope of work '1.2.1.13 As per referred clause of scope of work, the GIS building is in bidders scope. Kindly provide the finishing details for the building in order to estimate the quantum of work.	Please follow the bid document.
148.	Volume 2 of 2, Technical specification Sec-10 (Buildings and Civil Engineering Works) '10A.3.3 The type of drain & provision of drain is not specified in the tender document. We presume that, the drain shall be brick masonry type and the same shall be provided on one side of the road. Please confirm.	Detail design of drainage system will be finalized in execution stage.
149.	Volume 2 of 3, Electrical layout of PURBACHAL 400/230/132kV GIS SS As per referred Electrical layout of PURBACHAL 400/230/132kV GIS SS, the steel bridge is indicated in the approach road to the substation entry. we trust that the strengthening of existing steel bridge is not in bidders scope Please confirm.	The mentioned steel bridge is not on the approach road of the substation. Hence it is not in the scope of work of this bid. But note that carrying of materials/equipment to the project area is the sole responsibility of the bidder.
150.	Volume 2 of 3, Electrical layout of PURBACHAL 400/230/132kV GIS SS As per referred Electrical layout of PURBACHAL 400/230/132kV GIS SS, the steel bridge is indicated in the approach road to the substation entry. Please provide the following details of the existing steel bridge in order to estimate the	The mentioned steel bridge is not on the approach road of the substation. Hence it is not in the scope of work of this bid. But note that carrying of materials/equipment to the project area is the sole responsibility of the bidder.





	quantities. 1) width of steel bridge 2) Length of steel bridge 3) GA dwg. of steel bridge (if available)	
151.	Price Schedule B2 'Item IN3 Fire Fighting As per line item it has been mentioned to consider Fire fighting system for GIS & Control room buildings. We presume that particular line item for fire fighting specify about to consider portable fire extinguishers .Please clarify & confirm	Fire fighting system for GIS & Control room buildings comprises Fire Detection & Alarm System and Portable Fire Extinguishers.
152.	Volume 2 of 3, Fire protection System 'Cl.no '4.15 Fire protection We are not considering any Hydrant System protection for buildings & SS. Please confirm. If required kindly include the line item in Price schedule.	Hydrant system is not envisaged for this tender.
153.	Volume 2 of 3, Air Conditioning & ventilation 'Cl.no '13.31 Air Conditioning & ventilation type of AC units shall be selected as suitable to requirement. Cassette type or Hiwall type split AC units shall be selected accordingly.Please confirm.	Please follow the bidding document.
154.	Volume 2 of 3, Air Conditioning & ventilation 'Cl.no '13.31 Air Conditioning & ventilation We are considering N+1 units as a stand by for AC units .Please confirm.	Please follow the bidding document.
155.	Volume 2 of 3, Air Conditioning & ventilation 'Cl.no '13.31 Air Conditioning & ventilation We are considering 4 Air changes per hour for GIS hall ventilation system.Please confirm.	Please follow the bidding document.
156.	Volume 2 of 3/Drawing No. PGCB/DESIGN/2021/PURBACHAL/C02-page01 230KV CUM 132kV GIS building -Ground floor plan From the layout, GIS equipment are arranged on the first floor instead of ground floor .According to our understanding of GIS equipment, we strongly recommend that GIS equipment must be arranged on the ground floor for operation and maintenance.so we recommend canceling the cable cellar floor Please confirm.	Please follow the bidding document.

157.	In general spec item 4.4.2.4.1 of volume 2 of the bidding document the core is specified to be 3-legged type. This was 5-leg in the previous design mainly due to limitation for transport. By 3-leg core the shipping height would be around 5.5 m. Please clarify.	The bidders can offer either 3-legged core or 5-legged core type transformer.
158.	Volume 1 Section 3: Evaluation and Qualification Criteria 1.3.4 Functional Guarantee of the Facilities Capitalization of the transformer losses will be evaluated using average no-load loss (core loss) in kW and average load loss (copper loss) in KW Volume 2 Chapter 4 4.3.10 Loss and evaluation of losses Evaluated price of transformer loss shall be no-load loss (core loss) at rated voltage in kW and load loss (copper loss) at 75degree, 50Hz maximum continus rating in KW Volume 3 Schedule E 3.4 Guaranteed losses: Average no-load loss and average on load losses will be evaluated. Inconsistent evaluation criteria of transformer losses. Please confirm which to follow.	Capitalization of the transformer losses will be evaluated using average no-load loss (core loss) in kW, average load loss (copper loss) at 75 °C in kW and total load of transformer cooling fans at transformer maximum continuous rating in kW (when all the cooling fans are in operation).
159.	Clause 5.18.- (h) "All input signals shall be able to scan and record simultaneously at least 2 or 3 user programmable sampling rates from 500Hz to 24kHz for fast (short-term) transient monitoring" We want to offer sampling rates from 500Hz to 12kHz for fast (short-term) transient monitoring for DFDR application. Please confirm whether this is acceptable.	All input signals of the DFDR shall be able to scan and record simultaneously at least 2 or 3 user-programmable sampling rates from 500Hz to 12kHz or higher for fast (short-term) transient monitoring and from 1Hz to 500Hz for slow phenomena (long-term) monitoring in order to detect and record fast (short-term) and slow phenomena (long-term) events.

160.	Volume-2, Section-3, Clause No. 3.3.1.43. UHF sensors for PD detection: Adequate number of UHF sensors shall be provided in the offered GIS for detection of Partial discharge (of 5 pC and above) as per IEC 60270. Volume-2, Section-3, Clause No. 3.3.7.15.1. Appropriate numbers of sensors (PD antennas) inside the GIS shall be installed. Our understanding is that UHF sensors shall be used for PD detection. Please confirm whether Bidder's understanding is in order."	Your understanding is correct. Adequate number of UHF sensors shall be provided inside the 400kV & 230kV GIS offered for detection of Partial discharge (of 5 pC and above) as per IEC 60270.
161.	TDS 1.2.3.7 33kV XLPE Cable Max. DC resistance at 20°C ohm/km 0.0366 "Max. DC resistance at 20°C ohm/km 0.0366 and Short circuit rating for 3 sec kA 31.5. But they are not the value of 300mm². Please confirm."	DC resistance value shall be as per IEC 60228 standard. The short circuit current rating of 31.5kA/3sec is for metallic screen earth fault carrying capacity.
162.	17.A.1 GENERAL: This specification covers the general requirements of the design, manufacture, testing and inspection requirement of 33 KV XLPE Insulated Copper Cable (300 mm²) as specified. 17A.4.3 Conductor The conductor shall be stranded compacted round copper conductor complying the requirement of flexibility Class-2 of IEC 60228. The wires shall be made of high conductivity copper and shall be stranded mid compacted. The copper used for the conductor shall be of highest purity. The nominal area of conductor shall be 800 sq. mm. Please specify the conductor crosssection.	The cross section of 33 KV XLPE Insulated Copper Cable shall be 300 mm².

