NEPAL ELECTRICITY AUTHORITY

(Government of Nepal Undertaking)

Project Management Directorate

Project Management Department

Dadakhet Rahughat 132 kV Transmission Line Project

Email: roshan_agr@nea.org.np

Our Ref. No.: **077/78-03**

Date: September 24, 2020

To,

All Prospective Bidders,

Subject: Issuance of Clarification-II

Ref: Design, Supply, Installation, Testing and Commissioning of Dadakhet - Rahughat 132 kV Transmission Line and associated Substations at Rahughat and Dadakhet(OCB NO:PMD/EGMP/DRTLSS/077-78-01)

Dear Sirs/Madams,

In reference to the captioned Bid published on 10th August, 2020, we are hereby attaching the clarifications-II sought by the bidders pursuant to clause 7.1 of the bidding documents.

It is hereby requested to acknowledge the receipt of the same.

With Regards,

Roshan Agrawal
Project Manager

NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

DADAKHET RAHUGHAT 132 KV TRANSMISSION LINE PROJECT

CLARIFICATION-II TO PRE BID QUERIES

PROCUREMENT OF: Design, Supply, Installation, Testing and Commissioning of Dadakhet - Rahughat 132 kV Transmission Line and associated Substations at Rahughat and Dadakhet.

OCB NO:PMD/EGMP/DRTLS-077/78-01

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
1	Chapter 1-Project Specific requirements/Clause No. 4.1.27-a)	Drawings of Master/General Layout Plan, Earthworks (cutting and filling)Gabion/Retaining Wall and partial drawing of Control room building , GIS hall & security room building has been prepared. Employer will provide such drawings for reference purpose only.	We have received General arrangement layout plan along with tender documents. Bidder request to provide other drawings viz. Contour plan, retaining wall layout, plan and section drawings, GIS hall drawings, Security room, Township quarters.	**Please refer clarification -I**
2	Chapter 1-Project Specific requirements/Clause No. 4.1.27-i) & j)	i) Cable trenches outside control room building and GIS hall building along with covers and sump pits. j) Cable trench crossings with roads,rails tracks,drain etc.	As there is no line item for cable trench & cable trench crossings in price schedule,please clarify under which item, payment for cable trench shall be made to the bidder.	**Will be paid under item no; 3.9 to 3.15 in BPS of 4C if required at site**
3	Chapter 1-Project Specific requirements/Clause No. 4.1.27-l)	Approach Road (Outside NEA boundary): The road shall be bituminous black top rod designed as per relevant BS with drainage. Width of the bituminous section of approach road shall be 4-6 m.	a) We understand that approach road only (approx. 1.5 kms) is under present scope of works and same shall be paid under Price schedule item no. 3.1 to 3.17 - Rahughat Civil works. Please confirm. b) Further, no bridge strengthening is under present scope of works. Please confirm. c) If the Bridge strengthening is under present scope, then same shall be measured under which respective items of Price schedule. Please confirm.	**CONFIRM. If any bridge strengthning need to be done for transportation of material, contractor has to do at its own cost.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
4	Chapter 1-Project Specific requirements/Clause No. 4.1.27-p)	Drain and culverts, Drain Layout shall be developed by the contractor based on various type of drains.	a) Bidder request to provide the drain layout. b) We understand that outfall point for drain shall be within plot premises or near to boundary.Please confirm.	**During detailed engineering**
5	Chapter 1-Project Specific requirements/Clause No. 4.1.27-q)	Boundary wall along substation property line and main gate	As boundary wall is mentioned under specific exclusion and line item for same is also not there in price schedule, please confirm that boundary wall is not under present scope of works.	**Confirmed**
6	Chapter 1-Project Specific requirements/Clause No. 4.1.27-r)	GIS Buildings including control room cum administrative building. The GIS hall shall be suitable for mounting of EOT crane. The control room building shall be of RCC structure and GIS room shall be pre engineered steel structure as per Section “Civil”.	Bidder request to provide following drawing for Bid preparation. a) Control room plan and section drawings b) GIS plan and section drawings. c) Architectural details required for control room.	**Please refer clarification -I**
7	Chapter 1-Project Specific requirements/Clause No. 4.1.27-s) & t)	s) All civil works including foundations associated with erection of SF6 gas insulated metal enclosed switchgear along with its SF6 ducts inside the building. t) Foundations for SF6 duct supporting structure (outside building), SF6/Air bushing	As there is no line item for bus duct and bushing foundations in price schedule, please clarify if Bus duct is requried, if yes then under which item, payment shall be made to the bidder. Please confirm.	**. Termination will be through XLPE Cable, Bus duct is not required**
8	Chapter 1-Project Specific requirements/Clause No. 4.1.27-y)	Contractor shall carry out soil investigation test for confirmation.The cost for such test shall be included in respective item of price schedule.	a) Bidder request customer to share soil investigation report available to ascertain the type of foundations. b) We understand that payment for soil investigation shall be made under item no. 3.1-3.6 of Rahughat Price schedule. Please confirm.	**In the Scope of Contractor.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
9	Chapter 1-Project Specific requirements/Clause No. 4.1.27-z)	The substation area shall be developed in terraces at single or multi levels by remaining cutting and filling to attain final finished ground level.	a) Request NEA to share Contour map, proposed benches along with levels and volume of job completed so that balance scope can be ascertained and planned accordingly. B) Please clarify that payment for cutting/filling shall be made under which line item of price schedule.	**Under item no 3.6**
10	Chapter 1-Project Specific requirements/Clause No. 4.1.27-cc)	Construction of random rubble stone masonry wall and gabion wall	a) Bidder request to specifically mention where gabbion wall is required in the layout and Also provide the reason for considering the same the project. b We understand that payment for gabbion wall required in station and if required in approach road shall be made under item no. 3.8 of Price schedule and for random rubble stone masonry wall in station and if requried in approach road shall be provided under item no. 11.0 & 12.0 of Rahughat price schedule.Please confirm.	**Will be decided during execution of project. Will be as BPS**
11	Chapter 1-Project Specific requirements/Clause No. 4.1.27-dd)	The technical specification for external finishing of control room building and roofing has been included in Annexure…. Based on the specification included in Chapter 14 and Annexure… , external finishing shall be decided during detail engineering design.	Annexure No. is missing in said clause.Request to specify the same.	**external finishing shall be decided during detail engineering design.**
12	Chapter 1-Project Specific requirements/Clause No. 4.2.27-ee)	Any other item/design/drawing for completion of scope of works.	a) Bidder request to provide the Order of Precedance. b) We understand that our Proposal will be as per bidding price schedule only. Any item extra other than those mentioned in the price schedule shall be considered as extra item and paid to us seperately.Please confirm.	**Major item if any shall be paid accordingly. Any miscellaneous item to complete the specified scope of works shall be considered to be included**
13	Price Schedule Rahughat/item No. 3.9 -3.17	Item No. 3.9 to 3.17	Bidder request to clarify the quantities of which items shall be paid under Item No. 3.9 to 3.17	**Item no. 3.9 to 3.15:Any items of works not mentioned under BPS and that has to be done as per the requirement of site**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
14	Price Schedule Rahughat/item No. 3.17 & Item No.13	3.17) Switchyard drainage with RCC slab covering for efficient drainage in substation all complete as per specifications. 13) Stone masonry Drain in cement mortar 1:4 in foundations complete including excavation,PCC as per drawing and technical specifications.	Please clarify mode of measurement for drains as there are 2 line items for Drainage.	**Will be as per the price item of BPS**
15	Price Schedule Rahughat	Price Schedule Rahughat	Quantities have not been provided or missed in some of the items of price schedule Rahughat. We understand whereever quantities have not been mentioned, those items are not required.Please clarify our understanding is correct.	**Please refer attached revised Price Schedule**
16	Chapter 1-Project Specific requirements/Clause No. 4.2.v)-d)	All roads as shown in GA including culverts.	We understand that internal as well as approach road shall be paid under item no. 3.4.5 to 3.4.11 of Dadakhet price schedule.Please confirm.	**Will be as per the price item of BPS**
17	Chapter 1-Project Specific requirements/Clause No. 4.2.v)-g)	Drains along with crossings with cable trenches.	We understand that items for drainage works shall be paid under item no. 3.4.5 to 3.4.11 of Dadakhet price schedule.Please confirm.	**Will be as per the price item of BPS**
18	Chapter 1-Project Specific requirements/Clause No. 4.2.v)-j)	Surveying,soil investigation,contouring,leveling and filling	We understand that payment for soil investigation,survey works, retainining wall and gabbion walls,drains required inside substation and on approach road shall be made under 3.4.1 to 3.4.11 items of Dadakhet price schedule.Please confirm.	**Will be as per the price item of BPS**
19	Technical Specifciations/Section 14.2 - Pile foundation	Pile foundation	Section 14.2 is provided for pile foundations. Please clarify if pile foundations are required in any of the stations.	**At present not envisaged**
20	Drawings	Dadakhet Layout	Bidder request to provide General arrangement drawing for Dadakhet station as same is not available in drawings provided.	**Please refer clarification -I**
21	Drawings	Dadakhet Layout	Contour has been provided in parts for Dadakhet station which is not readable.Request customer to share single contour drawing for overall plot.	**Please refer clarification -I**
22	Price Schedule/Item No.28	Approach Road	We understand that required permissions for carrying out appraoch road works shall be provided by NEA only.Please confirm.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
23	Site	Site	Due to the country wide lockdown and travel ristrictions due to the Covid 19, we request M/s.NEA to provide us the i).Construction material availability (aggregate, sand, borrowed earth, bricks etc..) and its rates along with supplier details. ii). Local condition like availibilty of water and power, proposed site location along with coordinates and village name. iii).Availability of guest house, nearest bus/railway station, availability of guest house if any, detail of nearby any construction work. iv). Borewell depth to be considered for water supply, photographs of the proposed site etc... v). We would like to setup labour camp for approximately labour force of 300Nos (Skilled and unskilled) during the peak period adjecent to the proposed site. Request M/s.NEA to provide permission for the same. Kindly do inform us about the lease cost for the same in monthly basis inorder to set up the same adjecent to the proposed site.	**Bidder to determine the same at its own end**
24	Site	Site	We assume that necessary construction permission along with required gate passess without any delay will be provided to us for our staff, labour, vehicles and for working at night. Kindly confirm	**Will be decided during Contract execution**
25	Site	Hinderance Register	Hinderance register shall be maintained by us at site which shall include the delays due to force majures,rain fall,natural calmaities, local issues etc. and extension/compensation shall be provided to us for the same.	**Time extension for the same shall only be provided**
26	Site	PV clause	Due to the volatile market, nationwide lock down and travel rsitrictions due to Covid 19 request M/s.NEA to add the price variation clause for civil works.	**Will be as per the bid documents**
27	Site	Site office,stores, batching plant, fabrication yard etc …	Request M/s.NEA to permit for having site office / stores / batching plant/fabrication yard within NEA proposed site for smooth coordination works.	**CONTRACTOR HAS TO ARRANGE FOR THE SAME**
28	Site	Hinderances in the proposed site	We understand that encumbrance free land shall be handed over to us.No dismantling,tree cutting,jungle clearance etc. is under present scope of works.Please confirm.	**Site clearance is in the Scope of works**
29	Site	Construction power and water	We assume that construction power and water will be provided at one point within the proposed Switchyard free of cost. Kindly confirm	**Contractor to pay the cost and the employer will coordinate for the same**
30	Site	Testing Laboratory	We request you for the details on the approved construction material testing laboratory.	**Contractor to propose**
31	Site	Land acquisition	We understand that proposed land for both stations has been acquired by NEA.Please confirm.	**CONFIRMED**
32				
33	Layout Plan	General	Bidder request to provide the exact plot size for the proposed station	**Please refer clarification -I**
34	Layout Plan	General	We understand that the 220kV and 132kV line orientation is fixed and the same	**Finalized during detailed engineering**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
	Layout Plan	General	We understand that no Gantry structures and outdoor equipments are to be provided for the spare bays of 220kV, Please confirm	**CONFIRMED**
	Layout Plan	General	2 numbers of 220kV future bays (1 Line and 1 transformer) are shown in the layout, Please confirm the future requirements.	**CONFIRMED**
	Layout Plan	General	2 numbers of 132kV future bays (1 Line and 1 transformer) are shown in the layout, Please confirm the future requirements.	**CONFIRMED**
	Layout Plan	General	Bus duct is shown in the layout for both 132kV and 220kV where as in PSR, cable connection is mentioned. Please confirm.	**Will be through XLPE Cable**
	Layout Plan	General	We understand the 5th unit shown in the layout is the 132/33kV ,30MVA , 3 phase transformer, Please confirm.	**Confirmed**
	SLD	General	The Aux bus for single phase spare bank switching is not shown in the SLD, Please confirm the requirement and provide revised SLD & Layout.	**Finalized during detailed engineering**
	Price Schedule	Schedule 1C, D2, 2.0	The quantity for CVT is mentioned as 21 Nos, However the correct quantity would be 5(Lines)x3=15 Nos, please correct us.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
35	Price Schedule	Schedule 1C, E2, 2.0	The quantity for CVT is mentioned as 15 Nos, However the correct quantity will be 3(Lines)x3=9 Nos, please confirm	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
36	Price Schedule	Schedule 1C, F, 1.2	The 1 No. DBR Isolator mentioned is not shown in the SLD , Kindly confirm where DBR isolator will be used.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
37	Price Schedule	Schedule 1C, F, 1.4	The quantity for DO Fuse is mentioned as 3 Nos, However the correct quantity will be 2(Aux Trafo)x3=6 Nos, Kindly confirm	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
38	Price Schedule	Schedule 1C, G, 1.0	The Quantity mentioned in the same is 1 incomer, 2 Outgoing, 1 Buscoupler and 1 station transformer where as in SLD/PSR is mentioned as 1 incomer, 1 Outgoing, 1 Buscoupler and 2 station transformer Please provide correct requirment along with amended Bidding documents.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
39	Price Schedule	Schedule 1C, E.1, 1.8	We understand that the connection outside the GIS hall shall be with EHV cable, In that case SF6 to Air bushing is not required, Kindly confirm the understanding is correct.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
40	Price Schedule	General	We understand that the battery sizes mentioned in the schedule is final and no further sizing calculations are to be done, kindly confirm.	**Confirmed**
41	General		Kindly Provide the Earth resistivity value to be considered for bid estimation	**ERT Under the scope of Contractor**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
42	Layout Plan	General	Bidder request to provide the exact plot and size for the proposed station	**Please refer clarification -I**
43	Layout Section	Drawing 4	The section shown in the layout is not complete , kindly provide the correct section drawings	**Please refer clarification -I**
44	Layout Section	General	We understand that the inter equipment distance shown in the layout is fixed and cannot be modified. Please confirm our understanding is correct	**Finalized during detailed engineering**
45	Layout Section	General	We understand that the Bus height and Equipment height shown in the layout is fixed and cannot be modified. Please confirm.	**Finalized during detailed engineering**
46	Layout Section	General	Kindly confirm the type of conductor to be used in the proposed station	**ACSR Cardinal**
47	Layout Section	General	We understand that the Main Bus bar will be tubular type, Kindly confirm.	**Confirmed**
48	SLD	General	Kindly confirm the Nominal current for Main Bus 1 and 2	**Finalized during detailed engineering**
49	SLD	General	Kindly confirm the Short circuit rating for both 132kV and 33kV	**Finalized during detailed engineering**
50	SLD	General	We understand that the 132kV bus bar shall be extended for 2 number of future bays shown in the SLD, Kindly confirm	**Confirmed**
51	SLD	General	We understand that there is no future requirement for 33kV, Kindly confirm	**May be required**
52	Price Schedule	Schedule 1B, 1.1.1	Single Phase transformer is mentioned in the schedule however the same is not mentioned in the SLD and Moreover the schedule doesn't include the equipments associated with spare bank switching, Kindly confirm the requirement of single bank	**Equipment associated shall be considered and the price shall be included in transformer price**
53	Price Schedule	Schedule 1B, 1.5.2	The Quantity of 33kV LA is mentioned as 9 No. However the same will be 2x3=6 Nos, Kindly confirm	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
54	Price Schedule	General	We understand that the battery sizes mentioned in the schedule is final and no further sizing calculations are to be done, kindly confirm	**Confirmed**
55	General		Kindly Provide the Earth resistivity value to be considered for bid estimation	**ERT Under the scope of Contractor**
56	General	Test Bushing.	Since GIS in substation will be interconnected through XPLE cable. Please confirm 1 set of Test Bushing for HV test shall be part of which line item.	**Test bushing, if required, shall be included in the cost of GIS.**
57	General		Any Natural Drains are not crossing in Substation Area. Please confirm	**Crossing in rahughat where culvert is being developed by another contractor**

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58	General		Plesae confirm NEA will take the Forest Clearance from DFO (Division Forest Office) / MoEF (Ministry of Forest & Environment)	**Confirmed**
59	Transformer		Tertiaray winding rating & Vector Group for 66.6MVA 1Ph Transformer Also confirm wheter Tertiary is Loded or unloaded with respect	**Please refer clarification -I**
60	Transformer		Impedence values of 66.67MVA, 30MVA & 10MVA are not specified please provide.	**Please refer clarification -I**
61	Transformer		BIL of LV bushing for 30MVA is not clear	**170kV peak as per IEC**
62	Transformer		LV Rating of 10MVA Transformer is not clear	**For 132/33kV transformer, LV is 33kV nominal. The LV winding shall be rated for 10MVA single phase unit (10MVAx3)**
63	Transformer		cooling of 10MVA Transformer is mismatching wrt Price Sch/ GTP/ Specification. Please confirm the actual requirement.	**Cooling system is ONAN/ONAF for all transformer**
64	Transformer		As per Specification of Transformer 3.5.1.2 it is mentioned that 52kV And above bushing shall be OIP/ RIP type considering major difference in the cost of these bushing types. We request to confirm either OIP or RIP type bushings	**Its RIP Bushing. Please refer Clarification-1**
65	PSR	Service Level Argeement	a) Bidder request to clarify detailed scope under Service Level Agreement (Support Services) maintainance for 3 years. b) Service Level Agreement clause is applicable for Transmission line part only And not applicable for substations. Please confirm	**Please refer clarification -I**
66	Price Schedule	Maintainance for 3 Years	a) Bidder request to clarify detailed scope under maintainance for 3 years mentioned in Price Schedule.	**Maintenance as per Schedule 4c is for 6 years, applicable for communcaton system. The maintenance shall be performed as per need basis. Please refer respective specification.**
67	General	Right of Way	Please confirm Right of Way (RoW) is in NEA Scope.	**Confirmed**
68	Price Schedule		As per Sch. 1 A clause 3.3.(i) Total qty of Insulator string is mismatching with qty. mentioned in column 5	**Please find attached the corrected price schedule**
69	Price Schedule		As per Sch. 1 A clause 3.3.(vi) Total qty of OPGW preform assembly is mismatching with qty. mentioned in column 5	**Please find attached the corrected price schedule**
70	Price Schedule		As per Sch. 1 A clause 4.1.(i) (ii) (iii) Total qty of Supply of basic towers are mismatching with qty. mentioned in column 6	**Please find attached the corrected price schedule**
71	Price Schedule		Route of Transmission line falls under Forest area, River crossing. Please share the route survey report for T/L and Substation both.	**Please refer clarification -I**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
72	General		Please provide the details of consents, Licensces and Approvals obtained by NEA from relevant statutory Authorities and required as per LAW.	**Construction licensces have been obtained by NEA for the said project**
73	Price Schedule		Unit / Qty is missing in Price Schedule 4B for item 1.6.4. (33/11kV Tranformer CRP) is not required. Please confirm.	**Item is not required**
74	Price Schedule		Unit is missing in Price Schedule 4C(i) for item 2.9 to 2.11	**Please find attached the corrected price schedule**
75	Price Schedule		Qty is missing in Price Schedule 4C(i) for item 4.1, 24, 25, 26 and 28 etc. Sequences of Sr. no. are not correct.	**Please find attached the corrected price schedule**
76	4.1.1 245 kV GIS System	4. f) End Piece with the test link for Future extension of Bus bar module. As 245kV GIS is likely to be extended in future, the contractor shall make available all details such as cross section, gas pressure etc. required to design adopted in future for extension of GIS, during detailed engineering stage.	Please confirm the requirement of future extension on one side or both side of busbar.	**Shall consider one side only**
77	245 kV GIS System	4.1.1 (E) 220kV, 800 sq.mm and 500 sq.mm Power Cablex for Line/Transformer feeder modules outside GIS hall (i,e wall surface) with support structure along with GIS Termination and outdoor termination kit and accessories and SF6/Air bushing for interconnecting it with respective over head gantry/ equipment.	Since BOQ & Layout are not matching. XLPE Cable is mentioned in the Price Schedule, however busduct shown in Layout. Please provide revised Layout, if SF6 to Air Bushing are not required as per Price Schedule OR Amend the price schedule with quanntified Busduct.	**Shall be through XLPE Cable. Quote as per BPS and if not required shall bbe decided during detailed engineering**
78	145 kV GIS System	4.1.2 (d) Three (3) numbers of 1-phase potential transformers.	Since the offered 145kV GIS is three phase encapsulated type, 1 no. 3 phase type potential transformers shall be provided	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
79	145 kV GIS System	4.1.2 (g) Three (3) numbers of 1-phase Lightning arrestors, if not mentioned in the BPS.	Since the offered 145kV GIS is three phase encapsulated type, 1 no. 3 phase type surge arrestor shall be provided Please confirm.	**Confirmed**
80	145 kV GIS System:	4.1.2 (F) 132kV, 500 and 240 sq.mm XLPE Cable for Line/Transformer feeder modules with support structure along with GIS Termination and ais termination kit and accessories and SF6/Air bushing for interconnecting it with respective over head gantry/ equipment.	Since BOQ & Layout are not matching. XLPE Cable is mentioned in the Price Schedule, however busduct shown in Layout. Please provide revised Layout, if SF6 to Air Bushing are not required as per Price Schedule OR Amend the price schedule with quanntified Busduct.	**Shall be through XLPE Cable. Quote as per BPS and if not required shall bbe decided during detailed engineering**
81	SPECIAL TOOLS AND TACKLES	11 SPECIAL TOOLS AND TACKLES	Please provide the list of Special Tools and Tackles need to supply (if any). Also provide any specify the country of origin of required Tools & Tackles.(if any)	**Have to be proposed by the bidder**
82	ANNEXURE VI	Factory acceptance tests shall be conducted on final assemblies of all equipment to be supplied.	FAT shall be performed on the largest shipping unit & 10% of the total lot . Please confirm	**As per specification**
83	2. REFERENCE STANDARDS	2. IEC 60044-1 Current transformers IEC 60044-2 Voltage transformers	Revised reference standard for Instrument Transformers IEC 61869-2 Current transformers IEC 61869-3 Voltage transformers Please confirm..	**Confirmed As per the Latest Standard**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
84	GENERAL DESIGN AND SAFETY REQUIREMENT	3.9 The GIS assembly shall consist of separate modular compartments e.g. Circuit Breaker compartment, Bus bar compartment filled with SF6 Gas and separated by gas tight partitions so as to minimize risk to human life, allow ease of maintenance and limit the effects of gas leaks failures & internal arcs etc.	For 220kV GIS offered design busbar and busbar disconnector have seperate compartment, therefore chances of fault in busbar is nill, in this regards we do not envisage gas tight partition for busbar compartment. Please Confirm.	**Shall be as per the specifications**
85	GENERAL DESIGN AND SAFETY REQUIREMENT	3.9 These compartments shall be such that maintenance on one feeder may be performed without de-energising the adjacent feeders.	By keeping in view the criticality of the substation, For the 220 kV GIS S/s during maintenace there is no disruption of the power flow in the other feeders of the 220 kV substation. However for 132 kV GIS, during busbar disconnector maintenance only adjacent two feeders shall be out of service. Please confirm.	**Shall be as per the specifications**
86	GENERAL DESIGN AND SAFETY REQUIREMENT	Due to safety requirement for working on this pressurized equipment, whenever the pressure of the adjacent gas compartment is reduced during maintenance, this compartment shall be designed so that it shall remain in service to perform its intended duty.	Due to safety requirements,if the gas pressure of a compartment is reduced,the same part can not be kept in service as the gas density in the stated compartment shall not be sufficient to withstand the electrical stress. Please confirm.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
87	GENERAL DESIGN AND SAFETY REQUIREMENT	3.11 The bus enclosure should be sectionalized in a manner that maintenance work on any bus disconnector (when bus and bus disconnector are enclosed in a single enclosure) can be carried out by isolating and evacuating the small effected section and not the entire bus.	Bidder undersand that this clause is applicable only if busbar and busbar disconnectors are enclosed in same gas compartment and the bus bar sectionalsiation (gas barriers in the bus bar section) is not required. If the bus bar and bus disconnector are not in the same gas comaprtment. Please correct our understanding.	**Confirmed**
88	GENERAL DESIGN AND SAFETY REQUIREMENT	3.12 The material and thickness of the enclosures shall be such as to withstand an internal flash over without burn through for a period of 300 ms at rated short time withstand current. The material shall be such that it has no effect of environment as	Bider request to confirm, the burn through shall be as per IEC 62271-203. Table 4, burn through is acceptable for STC >=40kA for a period of 0.3s. Table is enclosed for your reference 	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
89	GENERAL DESIGN AND SAFETY REQUIREMENT	3.20 The switchgear shall be of the free standing, self-supporting with easy accessibility to all the parts during installation & maintenance with all high-voltage equipment installed inside gas-insulated metallic and earthed enclosures, suitably sub-divided into individual arc and gas-proof compartments preferably for:	The compartments of GIS shall be as per manufacturer's design. By following Manufacturer's design, it can still manitain all the service continuity requirements the specifications ask for. Moreover, this design for offered GIS is accepted and supplied to many utilities worldwide. Please confirm	**Confirmed**
90	GENERAL DESIGN AND SAFETY REQUIREMENT	3.26 Manufacturer shall submit the study report of VFTO generated for GIS installation.	As per IEC 62271-203, VFTO studies are not applicable for 220 kV and 145 kV voltage levels. Therefore this studies are not required and shall be excluded from scope. Please Confirm.	**Confirmed as per the Latest IEC Standard**
91	GENERAL DESIGN AND SAFETY REQUIREMENT	3.32 The ladders and walkways shall be provided wherever necessary for access to the equipment.	We envisage provision of Mobile Ladders for access to operating mechanisms and no walkways are neccessary for proposed Layout. Please Confirm	**Shall be provided where ever necessary**
92	GENERAL DESIGN AND SAFETY REQUIREMENT	3.37 However, for design purposes, ambient temperature should be considered as 50 degree-C	The design ambient temperature shall be 40 deg C. Temperature rise shall be as per IEC 62271-1 Please confirm.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
93	GENERAL DESIGN AND SAFETY REQUIREMENT	3.38 Temperature rise of all current carrying parts and enclosures shall be limited to the values stipulated in IEC-62271-1, under rated current and the climatic conditions as specified. The temperature rise for accessible enclosure shall not exceed 20 degree C above the ambient temperature of 50 degree C.	As per IEC -62271-1, The temperature rise for accessible enclosure shall not exceed 20 degree C above the ambient temperature of 50 degree C. In the case of enclosures, which are accessible but need not be touched during normal operation, the temperature rise limit may be permitted up to 30 degree C above the ambient of 50 degree C. The offered GIS is type tested to meet this IEC standard. Please Confirm.	**Confirmed**
94	UHF sensors for PD detection	3.44 Contractor shall provide adequate number of UHF sensors in the offered GIS for detection of Partial discharge (of 5 pC and above) as per IEC 60270 through Partial Discharge (PD) monitoring system and the number and location of these sensors shall be subject to approval of the employer/consultant. Further UHF sensors shall necessarily be provided in close proximity to VT compartments However adequacy of number of sensors and their location shall be verified at site by the contractor as per recommendations of CIGRE task force TF 15/33.03.05 (Task force on Partial discharge detection system for GIS:	Number of UHF sensors & the location of UHF sensors shall be as per manufactureres' recommendations. Please note that the locations of sensors shall be decided during detailed engineering itself to achieve the desired sensitivety & the same will be reflected on the drawings which will be submited for approval. During site testing additional UHF sensors cannot be installed and No change is recommended at site by OEMs. Bidder request to confirm the same.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
95	Gas Insulated Bus (GIB) layout	3.45 (4) The minimum outer to outer horizontal clearance between each GIS bus duct shall 0.5 meter for 220 kV & 132 kV voltage level.	Phase to Phase distance for a switchgear is fixed for the offered GIS. The GIB shall be extended outside (if required as per scope of work) the building with the same phase to phase distance for an optimum layout. Please confirm the same	**Confirmed**
96	CIRCUIT BREAKERS	4.5.6 The contractor shall supply three set of transducer for each substation covered under the scope.	Supply of these transducers shall be excluded from scope of supply. Please confirm	**As per specification**
97	Routine Tests	4.9.2 Functional tests are to be carried out on circuit breaker along with Control Switching device (CSD). DCRM (Dynamic Contact Resistance Measurement) to be carried out for all CBs during routine test.	CSD is not applicable for subject tender (220kV and 132kV GIS). Also the DCRM test is not performed on the CB as part of FAT test. However we shall submit the routine test reports of DCRM test. Please confirm the same.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
98	DISCONNECTORS (ISOLATORS)	5.2.12 The disconnectors and safety grounding switches shall have a mechanical and electrical inter-locks to prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position. Integrally mounted lock when provided shall be equipped with a unique key for such three phase group. Master key is not permitted.	When there is a three position switch (a module having both the switches in it-disconnect switch and earth switch) a mechanical interlock shall be provided,but when the mentioned switches are different modules,practically it can not be made possible to introduce the stated mechanical interlock.The product types that we are considering for the project under discussion have been supplied to and installed at numerous substations worldwide. Please confirm your accpetance.	**Confirmed**
99	SAFETY GROUNDING SWITCHES .	6.2 Each safety grounding switch shall be electrically interlocked with its associated disconnectors and circuit breaker such that it can only be closed if both the circuit breaker and disconnectors are in open position. Safety grounding switch shall also be mechanically key interlocked with its associated disconnectors.	The disconnectors and the safety grounding switches are separate modules in 220kV GIS design and shall have only electrical inter-locks between them. Please confirm	**Shall be as per the specifications**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
100	SAFETY GROUNDING SWITCHES .	6.13 Continuous current rating of the grounding switches (not less than 100A) shall be specified by the manufacturer, which can be safely injected for Bay/ Bus equipment testing.	The same shall be in line with IEC 62271-102.. Please confirm.	**Confirmed As per the Latest Standard**
101	Constructional features	13.2.1 It shall comprise structural frames completely enclosed with specially selected smooth finished, cold rolled sheet steel of thickness not less ethan 3 mm for weight bearing members of the panels such as base frame, front sheet and door frames, and 2.0mm for sides, door, top and bottom portions.	As per the standard pratice, for the weight bearing members a sheet thickness of 2.5 mm is more than sufficient and as a GIS manufacturer we recommeded the same and for non weight bearing members the same is 2 mm thick. We request to confirm the same.	**Shall be as per the specifications**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
102	TRANSPORT OF EQUIPMENT TO SITE	21. All transport packages containing critical units viz Circuit breakers and Voltage transformers shall be provided with sufficient number of electronic impact recorders (on returnable basis) during transportation to measure the magnitude and duration of the impact in all three directions. The acceptance criteria and limits of impact in all three directions which can be withstood by the equipment during transportation and handling shall be submitted by the contractor during detailed engineering. The recording shall commence in the factory and must	Shock indicators shall be provided only for VTs being a sensitive equipments. No electronic imparct recorders are necessary for Circuit Breaker. Please confirm.	**Shall be as per the specifications**
103	Volume-II A, Chapter-1, Project Specific Requirement, Cl 1.3	Obtaining of any consents, licenses and approvals from relevant statutory authorities, other than those obtained by the Employer and as required by the law.	We understand that the compensation to be paid for gettinPlease confirm.g consents, licenses and approvals from relevant statutory authorities shall lie with the Employer.Please confirm.	**Any Cost associated shall be paid by the Contractor.Employer will assist in getting the required approval**
104		Design of towers and foundations.	We understand the following: (i) Even though the Employer has given tower weights and foundation volumes in the price schedule, still the responsibility of design of towers and foundations shall lie with the contractor. (ii) The price evaluation shall be done on the unit rates quoted against the tower weights and foundation volumes given by the Employer. (iii) The Bidder shall submit basic tower design drawings (Normal tower) in the bid.	**Confirmed**
105	Bid Price Schedule No 3. Design Services	Proto Type Testing of towers	We understand that the bidder shall quote rates of tower testing including destruction tests in this schedule. Kindly confirm.	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
106	Volume-IIA:Hardware Fittings	Clause 7.1	UTS of Single Tension String as per clause as cl 7.1 of TS for Insulator & fittings is 160KN whereas as per BOQ it is 90KN	**UTS is 160 KN**
107	Volume-IIA:Hardware Fittings	Clause 11.1	As per clause 11.1 Technical Schedule value specified is 325kV whereas per clause 11.9 it is 460kV. And as per Annexure 7-B of insula & hardware fitting is it specified 360kV	**Will be as per latest IEC**
108	Volume-IIA:Hardware Fittings	Clause 11.1	As per clause 11.1 Technical Schedule value specified is 750kV whereas per clause 11.9 it is 1050kV.	**Will be as per Latest IEC**
109		VOLUME-II(B) Dwg No.2 & VOLUME-III schedule 1a, item 1.2	The figure of Dwg No.2 shows that exsiting 220kV line is connected to the substation by 1 No double-circuit tower. According ro item 1.2 in the VOLUME-III (PRICE SCHEDULE) Dadakhet Rahughat 132 kV Transmission Line Project, it is 2 Nos 220 KV TOWERS. Please clarify which one shall be used.	**Finalized during detailed engineering**
110		VOLUME-III schedule 1a, item 3.1 & VOLUME-II (A) Chapter-1: 1.1	Considering 15 km of ACSR MOOSE and 0.5 km of the line route, please clarify whether the 220KV line uses quad bundle conductors.	**Twin bundle conductor. Will be finalized after detailed engineering**
111		VOLUME-II(A) Technical Data Sheet	There is no Guarenteed Technical Particulars for the ACSR MOOSE, please provide.	**Will be as per standard IEC**
112		VOLUME-II(A) Technical Data Sheet	There is no Guarenteed Technical Particulars for the OPGW, please provide the OPGW parameters of the existing 220KV line to ensure the smooth connection.	**OPGW is 24 Fibre for 220KV line as well in 132 KV.**
113		VOLUME-II B Scope of work	There are 4 nos. 220kV bays for 220/132/33kV Rahughat (New)GIS Substation with 1 no. of spare bay as per the scope of work in Volume II (B), which conforms with the single line diagram. However there are only 2 nos. 220kV bays with 1 no.of spare bay in Dwg No. 2 Rahughat GIS substation layout plan. Please clarify.	**The gantry shall be double layer for two bays in one alignment**
114		VOLUME-II B Technical data sheet Item No. 16, Price schedule 1c D1-1.5.1, D1-1.5.2	As per the Technical data sheet Item No. 16: 220kV XLPE Power cables, the sections of 220kV cables are cooper 630sq.mm, cooper 400sq.mm, aluminum 300sq.mm ; but in the price schedule 1c:245 KV EQUIPMENTS, the section of XLPE cables are respectively 800sq.mm and 500sq.mm. Please clarify.	**the section of XLPE cables are respectively 800sq.mm and 500sq.mm**
115		VOLUME-II B drarwings	The layout plan of Dadakhet substation is not provided in Bidding documents. Kindly provide it to help us to confirm the substation surface and to calculate the civil work quantities.	**Please refer clarification -I**
116		VOLUME-II B	There are no backfill quantities of substations and the places to obtain the backfill soil.	**Will be as per BPS**
117		Price Schedule 4b 3.4.6 & Schedule 4c PART-C 3.7	The roads from main road to the substations and internal roads are both bituminous, and are 1000m in Dadakhet substation and 1500 in Rahughat substation, as specified in price schedule. Please confirm.	**Confirmed**
118		VOLUME-II B	There is no desciption of parking shed in DADAKHET substation in the price schedule, kindly confirm if we shall consider for 5 cars as the same in Rahughat substation.	**Not required**
119		VOLUME-II B	There is neither description nor quantities for measuring equipment of bays at substation in the price schedule. Please confirm.	**If bidder query is regarding test equipment, please quote as er BPS.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
120		VOLUME-II B的P889	Kindly provide the location of the loop-in-loop-out point along the Dana-Kusma 220kV line (distance from the point to the substation), and the tower types of 2 towers each side of the point.	**Its near to the Substation to be Constructed and will be finalized during detailed engineering. Quote as per BPS**
121			The access for Transmission line and for construction platform will be provided by Employer. Kindly confirm it.	**Confirmed**
122		Price schedule 1C	The current ratio of 145 current transformer is 1200-900-600/1A, the ratio of 33kV current transformer is 800-600/1A as required in price schedule. However in Volume II-B, the current ratio is respectively 900-600-300/1A for 145kV, 800-400/1A for 33kV. Please confirm which one shall prevail.	**Please refer clarification -I**
123		Technical Particulars / Parameters of Transformers	There is no detailed value requirement for the load loss and no load loss for transformers. Kindly provide it.	**Bidder to provide the same as functional Gurantee**
124		Price schedule 1A	For DB tower, there are 59 Nos basic towers, which shall be 236 tower legs. But there are 235 leg extensions as per the price schedule. Kindly confirm the exact leg extensions for DB tower.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
125		Price schedule	Is it acceptable to quote as per our optimized tower design and tower foundation design, or should we quote as per the tower weights and foundation volumes required in the price schedule? Kindly confirm it	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
126	Clarification -1 to prebid queries;Sl.No:7		Against this point, we understand that if the supplier is having supply details for 220kV Class transformer for 2nos of 3ph 200MVA or 8nos of 1ph 66.67MVA transformer will meet the qualification criteria. Please confirm.	**Confirmed**
127	Clarification -1 to prebid queries;Sl.No:8		Against this point, we understand that if the supplier is having supply details for 132kV Class transformer for 2nos of 3ph 24/30MVA or 8nos of 1ph 8/10MVA transformer will meet the qualification criteria. Please confirm.	**Confirmed**
128	Clarification -1 to prebid queries;Sl.No:23		It is mentioned as,'bidder has to depute atleast one personnel till defect liability period for training the Operating Staff and Maintenance to be done till the end of DLP without any additional cost to NEA'. we request NEA to confirm the complete scope and requirement for the maintenance i.e., any spare replacement , list of equipment under maintenance, whether the training of personnel is the same as per the training requirement mentioned against Vol-IIB,Chapter-1, PSR,cl.no:13.g and the price schedule for this scope.	**Since during defect liability period any defect arising maintainance is in the scope of contractor, to witness the defects arising, the contractor has to depute atleast one personnel.**
129	Volume-I,Section-4,Bidding forms	Form CON– 1: Historical Contract Non-Performance	In Table 2: Pending Litigation and Arbitration , it is mentioned as "Table 2 of this form shall only be included if Criterion 2.2.3 of Section 3 (Evaluation and Qualification Criteria) is applicable". But against clause 2.2.3 of Section 3 , it is mentioned as shall not apply. In that case , bidder need not to submit any pending litigation Litigation and Arbitration details. Please confirm our understanding is correct.	**As per Section 3 EQC**
130	General		Since lockdown prevails due to COVID19 pandemic situation, it is difficult to carry out site investigation, contour/route survey for the bidder outside Nepal. We request NEA to provide these details for our bidding purpose.	**You can depute your personnel for the site visit to access the quantity**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
131	Volume-I,Section-9, Contract forms		As per the said clause , price adjustment is applicable for transformers,Transmission Line Conductor & Transmission Line tower with the base date as 28 days prior to the deadline for submission of the Bid. Please confirm whether the base date is the original scheduled bid submission date or the actual bid submission date.	**the actual bid submission date.**
132	Volume-I,Section-9, Contract forms		Please confirm us the ceiling limit for the price adjustment.	**As per the Contract Agreement**
133	General		Please confirm us the ROW scope for the transmission line tower erection.	**Row will be cleared by the employer upon submission of the requirement details from the contractor**
134	General		we request NEA to confirm the land acquisition by NEA for the Transmission line route.	**Confirmed**
135	Volume-I,Section-3, Evaluation and Qualification Criteria	Item no: 5,XLPE Cable(132 kV or higher voltage class),Sl.no:(ii)	As per the said clause it is mentioned as,"Must have successfully completed the supply of XPLE Cable of 132 kV or higher Voltage Class, atleast twice the bid quantity as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for atleast two (2) year". Subcontractor who meets the supply criteria of twice the bid quantity of 132kV cable i.e., 3.4km and half the bid qty of 132kV Cable(performance criteria) i.e., 0.8km and the same subcontractor qualify to supply 220kV XLPE cable as well. Please confirm our understanding.	**Confirmed**
136	Volume-I,Section-3, Evaluation and Qualification Criteria	Item no:9, 120 kV & 30 kV Lightning Arrestor,Sl.no:(ii)	As per the said clause it is mentioned as,"Must have successfully completed the design, manufactured, tested and supplied of 120 kV or higher voltage class Lightning arrestors, at least twice the bid quantity as a main supplier over last seven years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily for at least two(2) year". Subcontractor who meets the supply criteria of twice the bid quantity of 120kV LA i.e., 50 nos and half the bid qty of 120kV Cable(performance criteria) i.e., 13nos and the same subcontractor qualify to supply 216kV LA as well. Please confirm our understanding.	**For 132kV and 33kV LA, evalaution will be done seperatly considering 132kV or higher voltage / 33kV or higher voltage..**
137	Land development work		Since site investigation report, contour survey are not available , we request NEA to modify the land development work in unit rate basis instead of lot.	**Will be as per BPS**
138	Clarification-1 to pre bid queries, Sl.no.33		As per clarification sl.no.33, it is mentioned that drawing for EHV cable laying is attached as Annexure. However, the same is not available in the Annexure. Request NEA to furnish the same.	**Some cable laying arrangement is attached as annexure in clarification-1. Rest shall be decided during detailed engineering**
139	Clarification-1 to pre bid queries, Sl.no.51		As per clarification sl.no.51, it is mentioned that overall contour plot is attached as Annexure. However, the same is not available in the Annexure. Request NEA to furnish the same.	**Section drawing has been attached in clarification. Bidder has to visit site to acces the quantity and the condition of the site**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
140	Clarification-1 to pre bid queries, Sl.no.111 & 223,		As per clarification sl.no.111, Percentage impedance value shall be **=12.5%** for 66.67MVA transformer. However, in clarification sl.no.223, impedance value is mentioned as **>12.5%**. As there are contractions in the clarification nos. 111 & 223, we request NEA to re-confirm the actual percentage impedance value for 53.33MVA/66.67MVA, 1-phase, 220/132kV Transformer.	**impedance value is mentioned as >12.5%.**
141	Clarification-1 to pre bid queries, Sl.no.209		In the referred clarification, it is is mentioned that "*Tertiary is required. Station supply thorugh 33/.400kV is intended to be taken from tertiary* ". However, as per Project specific requirement cl.no. 4.1.6, the 33kV supply to both the Station transformers are from 33kV switchgear. Hence, we understand that the tertiary winding is not required for 66.67MVA transformer. However, if the design of manufacturer demands tertiary winding the same shall be provided. Please confirm whether Bidder's understanding is in order.	**One no of station supply shall be from tertiary of the transformer as clarified in clarification-1**
142	Clarification-1 to pre bid queries, Sl.no.308		In the referred clarification, it is is mentioned that *"cable cellar is not required. All equipemnt and cable are to be layed in the ground floor"* . NEA to clarify the requirement of cable cellar as the GIS module will be placed in the ground floor.	**All arrangement for cable laying from switchyard to GIS shall be done by the contractor under the item of cable supply and installation works and requirement of cable cellar,AIS /GIS Termination and other accessories to complete the scope of owrks shall be included in the corresponding item of cable in BPS**
143	Clarification-1 to pre bid queries, Sl.no.334		Please clarify the following w.r.t Telecommunciation management Network/Network management system: a) Whether the TMN/NMS system shall be installed in proposed station or the same is already available, wherein Bidder need to do the integration of the proposed system? b) If already existing, Please furnish the existing make and model number.	**The TMN/NMS shall be supplied and installed as required. If integration with existing system is required, same shall be in the scope of the bidder**
144	Clarification, Annexure, TECHNICAL DATA FOR 132 kV SINGLE CORE CABLE, 13.(c)		The rated short circuit current for 132kV system shall be 31.5kA for 1 sec. However, in the referred clause, greater than 40kA for 1 sec is mentioned. NEA to check and confirm the rated short circuit current whithstand for 132kV EHV cables metallic sheath with duration.	**Shall be as per latest IEC**
145	Clarification, Annexure, TECHNICAL DATA FOR 132 kV SINGLE CORE CABLE, 13.(c)		Please note that 240Sq.mm 132kV cable cannot withstand 31.5kA for a duration of 1sec. In this regard, please specify the duration of fault current to be considered for 132kV, 240Sq. mm cable.	**Please provide as per the latest IEC**
146	CHAPTER-15 Control & Relay Panels Clause 33, LINE PROTECTION PANEL		Back up: Directional Over Current and Earth fault Protection is integral part of Bay control protection unit, no separate Relay for Back up. Please confirm	**Shall be as per the specifications**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
147	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 2.2, Page 7-6		Please note that offering Integrated Ethernet Switch as part of IEDs will reduce the network availability as any fault in individual IED will result in non-availability of the complete network. So, request you to consider external Ethernet Switches as per the standard practice of all major utilities. Also, as per the specification clause 4.1.5, *"One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure"*. Hence, we understand that the requirement as per Cl. 4.1.5 shall be followed. Please confirm.	**Shall be as per the specifications**
148	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 3.3.4, Page 7-18		We understand that communication protocol to LDC shall be IEC 60870-5-104 as per new LDC system requirement. Please confirm.	**Confirmed**
149	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 3.3.4, Page 7-18		We understand that the Gateway shall support up to 3 telecontrol centre considering NEA LDC requirements. i.e, Main LDC, Backup LDC and Remote Control Centre. Please confirm.	**Confirmed**
150	**CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 4.1.5, Page 7-20**		We propose below guideline for estimation of Bay level Ethernet Switches for 132kV and 33kV system. One switch shall be provided to connect all IEDs for every two bays of 220kV, every three bays of 132kV and one switch for all the bays of 33kV to communication infrastructure. Please confirm.	**Shall be as per provided specifications**
151	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 4.2.1, Page 7-21		As per specification clause 2.2, the redundant connectivity between IEDs and Ethernet switches is not required. Hence the requirement of dual on board with dual IP address mentioned in this clause will not be applicable for this project. This is also in-line with earlier supplies to NEA. Please confirm.	**Shall be as per provided specifications. To be finalized during DDE**
152	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 4.2.1, Page 7-21		We understand that "2000 events" mentioned in this clause is a typographical error and same should be read as "200 events". Also, as per specification clause 3.1.1.1., BCU should support data storage for at least 200 events. Please confirm. Our Bay Control Unit supports up to 1000 events storage. This is also in-line with earlier supplies to NEA. Please confirm your acceptance for the same.	**Shall be as per provided specifications**
153	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, 4.2.1, Page 7-22		As per other parts of specification and technical requirements of Bay Control Unit, there is no requirement of so many serial ports supporting legacy protocols like IEC103 and Modbus. We shall offer Bay control unit with one rear FO port on IEC61850 for remote communication. This is also in-line with earlier supplies to NEA. Please confirm your acceptance for the same.	**Shall be as per the provided specification**
154	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Page 7-39		We understand that Gateway 1 and Gateway 2 as in-built function of Server 1 (Hot) and Server 2 (Standby) will also be acceptable. Please confirm.	**Confirmed**
155	BOQ Price Schedule, IB, Dadakhet substation, Sl.no.4.9, 4.10		We understand that these spare components are not applicable, as there is no requirement of conventional type control panels in the present scope. Please confirm.	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
156	Chapter-22 (EHV Cable), Cl.no.1.13		As per referred clause, *"sheath shall be continuously extruded, of uniform thickness and homogeneous construction, close fitting, seamless and free from defects"* . In this regard, we propose seam welded corrugated aluminium sheath which is acceptable by all utilities. Also in the datasheet received vide amendment-1, seam welded construction is mentioned for corrugated aluminum sheath. Hence, we understand that Bidder can propose either extruded or seam welded type construction.	**Confirmed**
157	Clarification, Annexure, TECHNICAL DATA FOR 220 kV SINGLE CORE CABLE, Sl.no.22		The Short circuit withstand current of conductor is mentioned as 143kA for 1sec in the GTP. However, we would like to clarify that only 1000Sq. mm cable can withstand 143kA for 1sec. Hence, we request NEA to revise the values suitably in proportion to the cable size i.e. 800 sq.mm and 500 sq.mm in this case.	**will be as per Latest IEC**
158	Clarification, Annexure, TECHNICAL DATA FOR 132 kV SINGLE CORE CABLE, Sl.no.22		The Short circuit withstand current of conductor is mentioned as 143kA for 1sec in the GTP. However, we would like to clarify that only 1000Sq. mm cable can withstand 143kA for 1sec. Hence, we request NEA to revise the values suitably in proportion to the cable size i.e. 240 sq.mm and 500 sq.mm in this case.	**will be as per Latest IEC**
159	Clarification, Annexure, TECHNICAL DATA FOR 33 kV CABLE, sl.no.12		a) We understand that Cu wire metallic screen shall act as armour. Please confirm. b) Also, please confirm the Earth fault current & duration for which the Metallic screen shall be designed.	**Will be finalized during detailed engineering**
160	Clarification, Annexure, TECHNICAL DATA FOR 33 kV CABLE		Please furnish the techncial datasheet for 33kV, 3Cx 400Sq.mm,Aluminium, XLPE insulated cable	**will be as per latest IEC and will be finalized during detailed engineering**
161	Amendment-1 (Annexure), Control Room Building, C-ENGG-WR-CHP-CRB-ARCH-01		We understand that the Control building layout provided in the amendment is for reference only, as it is not having any 33kV switchgear room. However, Bidder shall follow the control building layout as shown in the overall layout for Rahughat substation. Please confirm whether Bidder's understanding is in order.	**Confirmed**
162	Clarification -1 - Cross sections of Dadakhet Substation & Rahughat SS DADAKHET - Price schedule - schedule 4B, Civil and Architectural works RAHUGHAT - Price schedule - schedule 4C, Part C -Civil works	Sheet no : DR/CS -1/8 to 8/8 & Sheet no : DR/CS - 1/12 to 12/12 Sl.on : 3.4.4 & Sl.no : 3.6	As per the price schedule, the land development work is paid in **lot basis.** Based on the referred topography cross section drawings provided with clarification-1, we understand that the proposed substation area is having huge level difference (around 30m for Dadakhet & 70m for Rahughat). Also it is replied in Sl no: 30 of clarification-1, the entire site area within the property line to be levelled. Please provide the topography plan showing the contour line with levels for the entire site area indicating with plot property line/boundary dimensions, in order to estimate the site development quantities.	**The section drawing provided in clarification was prepared during land acquisition for both substations and recently somw works of track opening, boundary wall construction has been done and the substation at rahughat will be developed in three / four levels and at Dadadkhet wll be in two levels. so it is hereby instructed you to visit the site for accessing the quantity.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
163	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 31, Page 15-26, Vol-IIB	RELAY TEST KIT One relay test kit shall comprise of the following equipment as detailed here under 3 sets Relay tools kits 2 nos. Test plugs for TTB 2 nos. Test plugs for using with modular type relays (if applicable)	Please clarify whether supply of Relay Test Kit is in the present scope or not, as same is not mentioned in bid price schedule.	**To be provided as per the specification. No separate cost to be provided and to be included under the respective price of control and relay panels.**
164	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-27, Vol-IIB	CONTROL PANEL	For Substations with Automation System, control and monitoring at bay level will be part of Local HMI of respective Bay Control Unit. Hence, conventional type control panels are not applicable. **Please confirm.**	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**
165	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-29, Vol-IIB	LINE PROTECTION PANEL (220kV and 132kV) 9. Cut-out and wiring with TTB for POWERGRID supplied energy meter	We understand that supply of Energy Meters are in the present scope. **Please confirm.**	**Confirmed**
166	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-29, Vol-IIB	LINE PROTECTION PANEL (132kV) 10. Directional Back up Over current and E/F protection scheme: 1 Set	We understand that Numerical over current and earth fault protection as in-built function of Bay control unit will also be acceptable. **Please confirm.**	**shall be as per latest IEC and will be finalized during detailed engineering**
167	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-29, Vol-IIB	a) BUSCOUPLER PANEL 2. Numerical Non Directional Over Current and Earth Fault Relay 1No.with High Set Feature and in built LBB protection(LBB function as part of BCU is acceptable): 1 No.	We understand that Numerical over current and earth fault protection as in-built function of Bay control unit will also be acceptable. **Please confirm.**	**shall be as per latest IEC and will be finalized during detailed engineering**
168	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-30, Vol-IIB	TRANSFORMER PROTECTION PANEL (220/132kV) 8. Cut-out and wiring with TTB for energy meter	We understand that supply of Energy Meters are in the present scope. **Please confirm.**	**Confirmed**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
169	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-31, Vol-IIB	TRANSFORMER PROTECTION PANEL (132/33kV) 18. Cut-out and wiring with TTB for energy meter	We understand that supply of Energy Meters are in the present scope. **Please confirm.**	**Confirmed**
170	CHAPTER-15: CONTROL AND RELAY PANELS, Cl. No. 33, Page 15-31, Vol-IIB	33kV Line Protection Panel	There is no specification available for 33kV Line Protection. We understand Directional Over current and Earthfault protection to be offered for 33kV Line Feeder. We understand that over current and earth fault protection as in-built of Bay Control Unit will also be acceptable. **Please confirm.**	**Confirmed**
171	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 2.2, Page 7-6, Vol-IIB	Typical SAS Architecture Diagram (Page 7-6)	This architecture is not in-line with NEA specification and system requirement. This is also conflicting with the architecture digram provided in page number 7-39. We understand that we need to refer the SAS architecture diagram as provided in page number 7-39 only. **Please confirm.**	**Finalized during detailed engineering**
172	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 2.2, Page 7-6, Vol-IIB	The SAS shall be bay oriented, i.e.: o Addition of a new feeder or transformer shall be an easy operation from a configuration and manufacturing point of view (copy of an existing model). The system interlocking shall be done by the mean of a topological interlocking, using the topology and expert rules to authorise or inhibit the switchgear operation. All these data will be exchanged between involved IED using the standard IEC61850 GOOSE or equivalent procedures. o Each bay has an autonomous behaviour, i.e. local control and interlocking, sequence of events, etc. It is	Please note that offering Integrated Ethernet Switch as part of IEDs will reduce the network availability as any fault in individual IED will result in non-availability of the complete network. So, request you to consider external Ethernet Switches as per the standard practice of all major utilities. As per the specification clause 4.1.5, One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure. Present clause if conflicting with referred clause. We understadn that we need to refer clause 4.1.5 for Ethernet Switch quantity calculation. **Please confirm.**	**Quote as per BPS. WILL BE FINALIZED DURING DETAILED ENGINEERING**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
173	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 3.3.4, Page 7-18, Vol-IIB	Communication Protocol The communication protocol for gateway to control centre must be open protocol and shall support IEC 60870-5-101 and IEC 61850 for all levels of communication for sub-station automation such as Bay to station HMI, gateway to remote station etc.	We understand that IEC 60870-5-104 protocol as per new LDC system requirement. **Please confirm.**	**Confirmed**
174	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 3.3.4, Page 7-18, Vol-IIB	The telecontrol gateway shall interface up to 5 telecontrol centres, each with a possible link redundancy. It maintains a database per control centre.	We understand that the Gateway shall support up to 3 telecontrol centre considering NEA LDC requirements. i.e, Main LDC, Backup LDC and Remote Control Centre. **Please confirm.**	**Shall be as per specification**
175	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 4.1.5, Page 7-20, Vol-IIB	Switched Ethernet Communication Infrastructure: The bidder shall provide the redundant switched optical Ethernet communication infrastructure for SAS. One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure. Each switch shall have at least two spare ports for connecting bay level IEDs and one spare port for connecting station bus.	We propose below guideline for estimation of Bay level Ethernet Switches for 132kV and 33kV system. **Please confirm.** One switch shall be provided to connect all IEDs for every two bays of 220kV, every three bays of 132kV and one switch for all the bays of 33kV to communication infrastructure.	**Provide as per specification**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
176	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 4.2.1, Page 7-21, Vol-IIB	Technical Parameters of BCU: 2. Protocol Capabilities: Ethernet based communication: Dual on ¬Board with dual I.P. addresses on IEC-61850 & upgradeable in future.	As per specification clause 2.2, the redundant connectivity between IEDs and Ethernet switches is not required. Hence the requirement of dual on board with dual IP address mentioned in this clause will not be applicable for this project. **This is also in-line earlier supplies to NEA. Please confirm.**	**Confirmed**
177	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 4.2.1, Page 7-21, Vol-IIB	Technical Parameters of BCU: 10. Event Logging : Storage of events up to 2000 in ROM.	As per specification clause 3.1.1.1., BCU should support data storage for at least 200 events. We understand that "2000 events" mentioned in this clause is a typographical error and same should be read as "200 events". **Please confirm. Our Bay Control Unit supports up to 1000 events storage. This is also in-line earlier supplies to NEA. Please confirm your acceptance for the same.**	**Confirmed**
178	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 4.2.1, Page 7-22, Vol-IIB	Technical Parameters of BCU: 16. Internal Ethernet : 4 X 10/100 Base T (RJ-45) ports+2X10/100 Base Switches Fx (optical) ports for redundant Ethernet network.	Please note that offering Integrated Ethernet Switch as part of IEDs will reduce the network availability as any fault in individual IED will result in non-availability of the complete network. So, request you to consider external Ethernet Switches as per the standard practice of all major utilities. As per the specification clause 4.1.5, One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure. This is also in-line with previous supplies to NEA. Present clause is conflicting with above reffered clause. Hence we will be offering clause 4.1.5. **Please confirm your acceptance for the same.**	**1. External switch can be accepted, to be decided during DDE.** **2. For 220kV and 132kV system, dedicated switch shall be provided.** **3.**
179	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 4.2.1, Page 7-22, Vol-IIB	Technical Parameters of BCU: 17. Additional ports : 1 X RS232 and 3 X RS485 can support IEC 103 Modbus, should be s/w configurable.	As per other parts of specification and technical requirements of a Bay Control Unit, there is no requirement of so many serial ports supporting legacy protocols like IEC103 and Modbus. We shall offer Bay control unit with one rear FO port on IEC61850 for remote communication. This is also in-line with earlier supplies to NEA. **Please confirm your acceptance for the same.**	**Provide as per specification. To be decided during DDE**
180	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Page 7-39, Vol-IIB	TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM Note: 3. For gateway, it shall communicate with Remote Supervisory Control Centre (RSCC) on IEC 60870-5-101 protocol.	We understand that Gateway 1 and Gateway 2 as in-built function of Server 1 (Hot) and Server 2 (Standby) will aslo be acceptable. **Please confirm.**	**The gateways to be provided are to be connected with LDC, MCC and for local remote control, as required. Therefore, the gateways provided shall be suitable for successful operation of the system.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
181	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 2.2.2, Page 7-43, Vol-IIB	2.2.2 Communication Standard IEC 61850 is based on Ethernet 100 Mbps. The communication between bays shall use fibre optic. The architecture shall be a redundant loop so that the damage on one fibre will not affect the SAS. The switching time from one loop to the other shall be less than 1 ms in order to keep the peer-to-peer exchanges performances in case of a network failure. There shall be one switch per bay so that the failure of one switch will not affect more than one bay. The switch shall preferably be a board integrated within the protection and control devices. The switch must have at least 1 spare port reserve for future	As per the specification clause 4.1.5, One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure. Present clause if conflicting with reffered clause. We understadn that we need to refer clause 4.1.5 for Ethernet Switch qty calculation. **Please confirm.**	**Refer above**
182	CHAPTER 17: SUBSTATION AUTOMATION SYSTEM, Cl. No. 2.3.1, Page 7-44, Vol-IIB	The Tele-protection interfaces are project specific. Sufficient Ethernet ports shall be required to communicate with the following: a) Main/Backup Smart Grid Control Centres b) Main/Backup SLDC/ALDC	We understand that the Gateway shall support up to 3 telecontrol centre considering NEA LDC requirements. i.e, Main LDC, Backup LDC and Remote Control Centre. **Please confirm.**	**Confirm**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
183	CHAPTER 1-Project Specification Requirement, Cl. No. 4.1.5 , Vol-IIB	Complete relay and protection system as per section –Control and Relay panels including Bus Bar Protection for 220 kV and 132 kV Double Bus Bar Switching Scheme. Low Impedance numerical impedance relay with centralized type scheme is acceptable for 220 kV system.	We understand that Numerical Centralized Low Impedance Busbar Protection is acceptable for both 220kV and 132kV system. **Please confirm.**	**Confirmed. Additional provision for connection of two spare bays shall be provided.**
184	BOQ Bid Price Schedule - Spares	Indicating Lamps(50% of used) and Color Caps of each color for indicating lamps (30% of used)	We understand that these spare components are not applicable, as there is no requirement of conventional type control panels in the present scope. **Please confirm.**	**Quote as per BPS. Shall be finalized during detailed engineering**
185	CHAPTER 3-GENERAL TECHNICAL REQUIREMENT (GTR)-TRANSFORMER & REACTOR and Bid Price Schedule	Power/ Auto Transformers	We understand that 8 GAS Online DGA / 8 GAS DGA Analyzer, Online Gases and moisture monitoring system, Online drying system and Fibre optic sensor Box are not in scope of Bidder in this project. As the same are not mentioned in Bid Price Schedule. **Please confirm.**	**Include the price in the Price of Power Transformer and accessories**
186	Chapter 19 – General Technical Requirement, GIS AND NEA Clarification-1 dt. 13.09.20	ANNEXURE-1	**As per Specification** : Single phase &Three phase auto reclosing. **As per NEA Clarification-1** : 145 KV GIS is Single pole operating type for Line. So pole discordence is required. **Query**: 145kV GIS is Gang Operated as such Singe Pole Operating Type not possible. To meet NEA requirement we need to offer 245kV GIS. **Kindly clarify / confirm.**	**Shall be as per specification**
187	Chapter 1 – Project Specific Requirement (PSR) AND NEA Clarification-1 dt. 13.09.20	4.1.2 145 kV GIS System:	**As per Specification** : (d) Three (3) numbers of 1-phase potential transformers. **As per NEA Clarification-1** : As the line GIS breaker is single pole operating type, Please provide suitable PT for the same. **Query**: 145kV GIS is Gang Operated as such Singe Pole Operating Type not possible. To meet NEA requirement we need to offer 245kV GIS. **Kindly clarify / confirm.**	**Shall be as per specification**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
188	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 53.33/66.67MVA, 1-Ph, 220/132kV Power Transformer.**	**For 53.33 / 66.67MVA, 1-Ph, 220/132kV Power Transformer:** As per referred clause, we understand that if any transformer manufacturer has designed, manufactured and supplied **3-Phase power transformer of any MVA capacity of 220kV or higher voltage class, at least 2 nos.** as a main supplier over **last five (5) years** period ending on the last date of bid submission. **Minimum one (1) no.** shall have been **in operation satisfactorily** to the end users **for atleat two (2) years** as on the date of bid openig. **Then, the manufacturer is fulfilling the referred Qualifying Criteria. Kindly confirm our understanding.**	**Confirmed**
189	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 8/10 MVA, 1-Ph, 132/33 kV Power Transformer.**	**For 8/10 MVA, 1-Ph, 132/33 kV Power Transformer:** As per referred clause, we understand that if any transformer manufacturer has designed, manufactured and supplied **3-Phase power transformer of any MVA capacity of 132kV or higher voltage class, at least 2 nos.** as a main supplier over **last five (5) years** period ending on the last date of bid submission. **Minimum one (1) no.** shall have been **in operation satisfactorily** to the end users **for atleat two (2) years** as on the date of bid openig. **Then, the manufacturer is fulfilling the referred Qualifying Criteria. Kindly confirm our understanding.**	**Confirmed**
190	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 24/30 MVA, 3-Ph, 132/33 kV Power Transformer.**	**For 24/30 MVA, 3-Ph, 132/33 kV Power Transformer:** As per referred clause, we understand that if any transformer manufacturer has designed, manufactured and supplied **3-Phase power transformer of any MVA capacity of 132kV or higher voltage class, at least 2 nos.** as a main supplier over **last five (5) years** period ending on the last date of bid submission. **Minimum one (1) no.** shall have been **in operation satisfactorily** to the end users **for atleat two (2) years** as on the date of bid openig. **Then, the manufacturer is fulfilling the referred Qualifying Criteria. Kindly confirm our understanding.**	**Confirmed**
191	DRTLS_VOLUME-II B	SECTION 22: EHV XLPE POWER CABLE Cl.no. 1.13 METALLIC SCREEN:	As per referred clause, if manufacturer has Corrugation facility with SEAMWELD instead of Seamless. Kindly also accept the same. **Kindly confirm.**	**WILL BE DECIDED DURING DETAILED ENGINEERING**
192			[illegible]	
193	Vol- II (A)	Chapter-11, Clause- 11.9 & Chapter-7, Annexure-7B	As per clause 11.9, the Rated power frequency withstand voltage(wet) is 460kV. Whereas, as per Annexure 7-B of insulator & hardware fitting the same is specified as 360kV. **Kindly clarify which value to be considered.**	**Power frequency withstand voltage will be as per standard IEC**
194	Vol- II (A)	Chapter-11, Clause- 11.9	Under Chapter-11, page No.7, clause 11.9 -schedule A.9, Power frequency withstand 460kV Values are pertaining to 220kV Rating – But other details are pertaining to 132kV rating **Kindly clarify.**	**Power frequency withstand voltage will be as per standard IEC**
195	Vol- II (A)	Chapter-8	Requesting you to kindly arrange to provide the Type test details & requirements of OPGW.	**As per Latest standard IEC**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
196	Vol- II (A)	Chapter-1	As per Chapter-1, 220kV LILO Dana-Kusma Double Circuit Transmission Line- Approx 0.5 Km is in the scope of the bidder. However, in the provided tender documents, the technical specification & other details were missing. **Hence, requesting you to kindly provide the required technical details related to 220kV LILO line.**	**Since the LILO Quantity is small, will be finalized during detailed Engineering**
197	Vol- II (A)	Chapter-6	We would like to inform you that the technical specification and other details of the 220kV ACSR MOOSE conductor is not given in the Vol-II (A). **Requesting you to kindly provide the same.**	**Will be as per standard IEC**
198	Vol- II (A)	Chapter-2, Clause-2.4 & Chapter-3, Clause-3.1	Under clause 2.4 & 3.1, it is given that "The Employer has conducted Initial Environmental Examination (IEE) study". **Requesting you to kindly provide the complete IEE study report for our further analysis.**	**Will provide soft copy individually to bidders requesting for the same**
199	Vol- III	Price Schedule-1A, Item no. 1.1.5 (b, c)	Under Item. 1.1.5 (b) & (c) , the height of Raised chimney is written as "Stubs- Raised Chimney (0.5M / 1 M)" **Kindly Specify the height of Stubs-rasied chimney shall be 0.5 m or 1 m.**	**Quote as per BPS.Will be finalized during detaied engineering**
200	Vol- III	Price Schedule-1A, Item-1.1.4 (C) & Item- 1.1.5 (C)	Unit for the item no. 1.1.4 (c) & 1.1.5 (c) "Stubs- Raised Chimney (1 M)" is not provided.	**If required will be finalized during detaied engineering**
201	Clarification-1	S.No. 252, Page-24	As per clarification-1, S.no. 252, the DDM tower design is in contractor scope. So requesting you to kindly arrange to provide the following required data: 1. Basic span 2. Wind span 3. Weight span 4. deviation limit for DDM tower design.	**To Quote as per BPS. Will provide during detailed engineering**
202	Vol-III & Clarification-1	Price schedule-1A, item-5.10 and 5.17 & Clariftn.-1, S.No. 269, Page-26	From the provided clarification, we understand that the item-5.10 i.e. *"Hydraulic,Manually operated portable crimping tools with 2 sets of each dies suitable for conductor "* ***BEAR*** *" and OPGW "* . is suitable for **CARDINAL** conductor. whereas, item-5.17 i.e. *"Grip suitable for ACSR "* ***BEAR*** *" Conductor "* is suitable for **MOOSE** conductor. **Kindly confirm.**	**Confirmed**
203	Vol- III	Price Schedule-1A, Item- 3.1 (iii) & (iv)	In price schedule-1A, Item- 3.1 (iii) & (iv), we understand that the quantities under the column 5 (Quantity) is to be consider. However, the quantities for the same item under column 7 (Total Weight (KG)/Quantity)is different. **Kindly confirm, we have to take quantity under column 5 only.**	**Confirmed and corrected in updated schedule**
204	Vol- III	Price Schedule-1A, Item- 3.3 (i) & (v)	In price schedule-1A, Item- 3.3 (i) & (v), we understand that the quantities under the column 5 (Quantity) is to be consider. However, the quantities for the same item under column 7 (Total Weight (KG)/Quantity)is different. Kindly confirm, we have to take quantity under column 5 only.	**Confirmed and corrected in updated schedule**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
205	Vol- III	Price Schedule-1A, Item no. 3.1 (ii) & (ii) and Item no. 4.2 (v)	In price schedule-1A, Item- 3.1 (ii) for CARDINAL conductor & (ii) for MOOSE conductor, the unit is given as a "Set" for "Stockbridge Vibration damper". However, as per general practice the Unit of "Stockbridge Vibration damper" shall be in "Numbers." **Kindly confirm that Unit is in Numbers.**	**Quote as per BPS.**
206	Vol- III	Price Schedule-1A, Item- 3.3 (iii)	As per item 3.3 (iii), we understand that, for Double tension insulator string for "MOOSE" the BIL of long rod polymer insulator will be 1250kV, with UTS of 160KN. **Kindly confirm.**	**Will be as per latest IEC**
207	Vol-I & Vol- III	Section-3, clause 1.3.7 & Price Schedule-2A	Clause 1.7.3, states that *"Domestic preference will be granted to eligible domestically produced Plant and Equipment"*. However, the provided Price Schedule-2A doesn't contain any item discription or quantities. So, requesting you to kindly provide the complete Price Schedule-2A for *"Supply and Delivery of Plant and Equipment within the Employer's Country"*.	**Bidder to quote the corresponding item no from schedule no 1-A,B,C to schedule-2-A,B,C for the item which bidder is quoting for domestically produced plant/equipment**
208	Vol- III	Price Schedule-4A, Item- 4.3 & 5.3	The description of item-4.3 (Erection) & Item-5.3 (Foundation) states *"Tension tower DD/DDE"*. We understand that the DDE is a typographical error & the tension tower type is DD only. **Kindly confirm.**	**Confirmed**
209	Vol- III	Price Schedule-4A, Item- 4.5	The description of item-4.5 states the quantity of 220kV LILO towers to be 4 nos. However, under the Quantity column of the same item, it states the quantity of towers to be 2 nos. We understand that, the final quantity of 220kV LILO tower to be consider as "2 nos." only. **Kindly confirm.**	**The tentative weight is provided in BPS. Quote as per BPS. Quantity to finalized during detailed engineering**
210	Vol- III	Price Schedule-5 (Grand Summary), S.No- 4 (v)	As per S.no-4 (v), we have to provide *"Type test charges to be conducted abroad"*. However, the schedule for the same is not provided under Price schedule-4A. Requesting you to kindly arrange to provide the schedule for the same.	**Type test not complying with the requirement of Section-3, EQC, The bidder has to give the undertaking of conduction the same without any additional cost to NEA..There is no price item for the same in BPS**
211	Volume-III,	Bid Price Schedule No.5 - Grand Summary, Sl.No.4(v)	4(v): Type Test Charges to be conducted abroad. However, there is no separate schedule provided in the bid price schedule. **Kindly confirm the requirement.**	
212	Volume-I, Section 4 - Bidding Forms, Affiliate Company Guarantee, Page 4-29	Affiliate Company Guarantee,	We understand that Affiliate Company Guarantee is to be submitted after Award of Contract. **Please confirm.**	**Confirmed**
213	Approach road to proposed site	Approach road to proposed site	1). Any strengthening / modification required in the existing culverts, road, bridges etc. for transportation of material / Items / equipment up to proposed site shall be carried out by the NEA. **Please confirm.**	**Contractor has to carry out the said activities if required and additional cost for the same shall not be provided. NEA will assist in coordinating with the concerned authorities.**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
214	Clause 1.3.4, point 3 of Section 9 – Contract Forms, Volume-I	No price increase will be allowed beyond the original dispatch date of different lots of equipment unless covered by an extension of time awarded by the Employer under the terms of the Contract. No price increase will be allowed for periods of delay for which the Contractor is responsible. The Employer will, however, be entitled to any price decrease occurring during such periods of delay.	Request to delete the following sentence from said clause since it is an inequitable clause: "The Employer will, however, be entitled to any price decrease occurring during such periods of delay".	**Will be as per thespecified clause in the documents**
215	Clause 14 of Section 8 - Special Conditions of Contract, Volume-I	(b) Value Added Tax (VAT): the Contractor, Subcontractor or its nominated Subcontractor, shall be eligible for refund on all imported equipment and materials to be supplied and delivered exclusively for use in the Project.	Please clarify the Value Added Tax (VAT) disbursement time, i.e. within how many days.	**Reimbursed Upon the submission of VAT Invoices**
216	7. Scope of Facilities of Section 8 Special Conditions of Contract, Volume-I	7.3 The Contractor agrees to supply spare parts for a period of years: 5 Years	However, the rates to be agreed mutually for supply of spares. **Please confirm.**	**If required shall be paid upon supply. Only the Contractor has to agree and be ready for the supply for the stipulated period as per the said Clause.**
217	Clause 30. Limitation of Liability of Section 8 - Special Conditions of Contract, Volume-I	30.1 (b) Deleted	Please confirm that the aggregate liability to the contractor to the employer, whether under the contract, in tort or otherwise shall not exceed the contract value.	**Clause shall be: 30.1(b) The multiplier of the Contract Price is: One**
218	Vol-III		Items 1.8.1 and 1.8.2 only specify the cable voltage level, without clear cable specifications. Question: Please confirm the specific specifications of the cable?	**Finalized during detailed engineering**
219	Vol-III		1.9.8 only specify the cable voltage level, without clear cable specifications. Question: Please confirm the specific specifications of the cable?	**Finalized during detailed engineering**
220	Vol-III		In 1.1 and 1.2, only the cable voltage level is specified, and there is no clear cable specification. Question: Please confirm the specific specifications of the cable?	**Quote as per BPS.Finalized during detailed engineering**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
221	Vol II(B) CHAPTER 9: POWER AND CONTROL CABLE		Question 1: Please confirm whether fire resistance test is fire resistance or flame retardant requirement? Question 2: If the cable needs to meet the fire resistance test, the standard should be IEC60331 instead of IEC 60502. Please confirm?	**1. Please consider fire resistant** **2. Confirm**
222	Vol II(B) CHAPTER 9: POWER AND CONTROL CABLE		Question 1: The cable needs to meet the flame retardant test, and the standard should be IEC60332 instead of IEC 60502. Please confirm? Question 2: There is no description of C1 category in IEC60332. Please confirm whether it is the Category specified by IEC60332?	**1. Please consider fire resistant** **2. Confirm**
223	Vol II(B) CHAPTER 9: POWER AND CONTROL CABLE		Question: The specification requires that all wooden reels are recyclable. Under normal circumstances, reels are not recyclable. Please confirm?	**Confirmed**
224	Vol II(A) Chapter-11: Technical Schedule		Due to the requirements of the tender OPGW specification, we must give priority to the OPGW OD, Breaking Load, resistance and short circuit current in the design process, resulting in limited structural design. Finally, the parameters of elastic modulus cannot meet the requirements of bidding documents.We recommend the elastic modulus of 146.1Gpa if other conditions are met.	**Shall comply with latest IEC**
225	VOLUME –II (A)	The page from 179 to 183	Please provide the whole Route Alignment Map of 132kV transmission line and the Route Alignment Map of 220kV transmission line. Make sure the information clear.	**Route alignment for 132 KV is provided in the bidding document. 220 KV is nearby to Rahughat Substation where LILO is to be done**
226	VOLUME –II (A)		Please provide more information about 220kV LILO transmission line, such as grouding wires, insulators etc.	**Finalized during detailed engineering**
227	VOLUME –III	Part 1: Dadakhet Rahughat 132 kV Transmission Line Bid Price Schedule No. 1A: Supply and Delivery of Plant and Equipment from Abroad 3.1 Conductor and Accessories i) ACSR conductor, code name "MOOSE" with armour rod etc to complete the job	According to the bidding documents, the length of the line route of 220kV transmission line is about 0.5km, and the length of the ACSR 'MOOSE' is 15km. So please clarify **how many conductors are there per phase**.	**Quote as per BPS. Shall be finalized during detailed engineering**
228	VOLUME –III	Part 1: Dadakhet Rahughat 132 kV Transmission Line Bid Price Schedule No. 1A: Supply and Delivery of Plant and Equipment from Abroad 3.3 Insulator strings iii) Double tension insulator string for "MOOSE"	Please clarify the quantity of the double tension insulator string.	**Quote as per BPS. Shall be finalized during detailed engineering**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
229			Whether the employer will provide the foundation drawing and tower drawing	**Design to be done by the contractor**
230	BPS		Whether the employer provides the material quantity for the foundation of the tower	**Shall be as per BPS**
231	BPS		There is no tower foundation information in the BPS,Please provide information of foundation	**Provided in BPS**
232	Vol II(B)		Please provide the general layout for Dadakhet Substation	**please refer clarification-1**
234	Vol -II(B)	CHAPTER 1 –Annexure-III: SPECIFICATION FOR DIGITIAL PROTECTION COUPLER	About Digital protection couplers : 220kV line protection 1 adopts distance protection ;and 220kV line protection 2 adopts distance protection. 115kV line mian protection adopts distance protection ,and 115kV line backup protection adopts current protection. are Digital protection couplers device used to transmit distance protection remote trip command etc.for 220kV line protection 1 , 220kV line protection 2 and 115kV line mian protection?	**Finalized during detailed engineering**
235	Vol -II(B)	Chapter 1-specification for revenue meter & metering(instrument) transformer -energy meter: accuray class is 0.1	Is it acceptable that the accuray class of energy meter is 0.2S?	**Confirmed**
236	Vol -II(B)	Chapter15- 26, busbar protection: "Single bus bar protection scheme shall be provided for each main bus and transfer bus (as applicable) for 220KV and 132 KV voltage levels"	we understand that it requres to configure 1 set of 220kV busbar protection device and 1set of 132kV busbar protection device. Is this right?	**Shall be for double busbar scheme**
237	Vol -II(B)		If the revenue energy metering data should be uploaded to the dispatch center? Such as uploading, how to transmit information?	**shall be as per specification**
238	Vol -II(B)		There is no requirement in the bidding document of video monitoring and security system. Is this system not configured locally?	**Please refer clarification-1**
239	Vol -II(B)	Chapter-19, Table 3A &3B accuracy class of relying CTs of 220kV &132kV is PS as per IEC 60044-1.	IEC 60044-1 is replaced by IEC 61869-2-2012, and where is no PX in . Please confirm that accuracy class of relying CTs would be PX , P or PS still ?	**Shall be as per latest IEC**
240			Please provide the surveying topographic map and positioning coordinates of the two substations	**Section drawings provided in clarification. Bidders to visit site for detail estimation**
241			Please specify the length of access road the two substation stations	**Quote as per BPS. Shall be finalized during detailed engineering**
242	Vol-II (B)	Annexure-I Technical Specification (LIST OF TENDER DRAWINGS)	These drawings are not found in the Bidding Documents. Please provide them.	**Please refer clarification -I**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
243	Vol II(B) , Chapter 20 – Technical Specification for Transformers	6.0 Technical Parameters 3.0 Technical Particulars / Parameters of Transformers (132/33kV, 1-Phase Transformer)	The cooling requirements in this technical parameter list are " ONAN", which should be an error value. The correct cooling requirement should be "ONAN / ONAF", please clarify	**The cooling requirement is ONAN/ONAF**
244	Vol II(B) , Chapter 23 -Technical Datasheet	ITEM No.4 (b): 630kV STATION TRANSFORMER	The title of this technical datasheet is "ITEM No.4 (b): 630kV STATION TRANSFORMER", but the rated power requirement in the datasheet is 200kVA, Please clarify whether the rated power requirement of the station transformer is 200kVA or 630kVA.	**Its 630 KVA for Rahughat Substation and 200 KVA For Dadakhet Substation**
245		ITEM No.7e: 220 kV LIGHTNING ARRESTOR	The title of this technical datasheet is "ITEM No.7e: 220 kV LIGHTNING ARRESTOR", but the first line in the datasheet has a requirement of 132kV, Please clarify.	**Its typing error. Its 220 kV requirement**
246		ITEM No.8: 220 kV LIGHTNING ARRESTOR	The title of this technical datasheet is "ITEM No.8: 220 kV LIGHTNING ARRESTOR", but the first line in the datasheet has a requirement of 132kV, Please clarify.	**Its typing error. Its 220 kV requirement**
247	Bid Price Schedule No. 3: Design Services		In the description of design service it mentions proto type testing of towers. It doesn't describe design service and scope. Please clarify.	**Bidder has to design all type of tower and shall include the cost of same in the supply as per the BPS**
248	Volume II		We did not see your Technical Specification Requirement and Technical Data Sheet for "Tower and Tower Parts, Composite Long Rod Insulator, ACSR Conductor, OPGW and Accessories for ACSR Conductor & OPGW, Pls kindly provide.	**Provided in Volume-11A of bidding document**
249	Bid Price Schedule No. 1B1.1.1(a)		The quantity for" 132/33 kV, Single Phase 8/10 MVA, ONAN/ONAF Power Transformer...."is 4 sets, shall we understand among the 4 sets single phase 8/10 MVA power transformer, there is 1 set standby single phase 8/10 MVA power transformer. Pls kindly clarify.	**Confirmed**
250	Bid Price Schedule No.1C: F 33 KV EQUIPMENT 1.2		Pls clarify "33 kV, 630A Isolators with out earth switch (3-phase, DBR type) "the earth switch for 33kV, 630A Isolator is single or double.	**Double**
251	Bid Price Schedule No.1C: F 33 KV EQUIPMENT 1.1		Pls clarify the quantity"15 nos" for "30 kV Surge Arrester (1 ph) "	**Quote as per BPS .Shall be finalized during detailed engineering**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
252	Volume 1 , Section 3, 2.4.1		We will have two parties in the JV, Let us say party A and Party B. According to the compliance requirements. For JV All party combined" Either one party must meet the requirement..... "We understand that the bidder is responsive if either party A or party B holds two similar contracts with contract value higher than 20.4M USD, and out of two contracts, one is carried out outside the bidder's homeland country. Under this situation, we understand, the other party must have completed or substantially completed one (1)Contract of design, supply, installation, testing and commissioning of 132 kV or higher voltage Transmission Line and/or 132 kV or higher voltage Substations in last 10 (ten) Year's with Contract value not less than US$ 5.1 million in either in bidder's homeland country or outside the bidder's homeland country.According to the compliance requirements. "any two partners must each demonstrate..." Can we understand the bidder is also responsive if party A holds one similar contracts with contract value higher than 20.4M usd in homeland country and party B holds one similar Contracts with contract value higher than 20.4 M usd outside bidder's homeland country. Pls kindly clarify whether our understanding is correct or not.	**Confirmed**
253	Volume 1, Section 4 Bidding Form		Shall we put the fully filled TABLE OF ADJUSTMENT DATA in Technical Bid or Price Bid when we submit the tender documents.	**Shall be submitted along with technical bid**
254	Volume 1, Section 4 Bidding Form		Pls clarify whether all subcontractor shall fill and provide the COUNTRY OF ORIGIN DECLARATION FORM	**The bidder has to provide country of origin declaration form**
255	Volume 1, Section 4 Bidding Form		Pls clarify whether all subcontractor shall fill and provide the Affiliate Company Guarantee	**The bidder has to fill the Affiliate company guarantee**
256	Volume Drawing		According to the Wiring Diagram, 33kV outgoing line has 1 circuit and the station transformer adopts fuse for protection, whereas according to the cross-section diagram, the station transformer adopts circuit breaker for protection.	**Quote as per BPS .Shall be finalized during detailed engineering**
257	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat Switchyard layout, Dwg. No. 2 & 3 & Price Schedule 1C	The Layout for for 220kV Line Gantry arrangement shows 2 Lines terminated to a common gantry. We understand for double conductor stringing we shall envisage double gantry arrangement, **Please confirm our understanding.**	**Confirmed**
258	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat Switchyard layout, Dwg. No. 2 & 3 & Price Schedule 1C	Please clarify the 220kV Stringing arrangement for 5 Nos. Line Bays, We understand 4 Line Bays are terminated to 2 Nos Double gantry arrangement and 1 Line Bay shall be terminated to additional 1 no. gantry structure, **Please confirm our understanding.**	**Confirmed**
259	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat Switchyard layout, Dwg. No. 2 & 3 & Price Schedule 1C	We understand 220/132kV ICT and 132/33kV Transformers are of YNyn0D11 vector group and tertiary winding is in unloaded condition, **Please confirm the requirement**	**One no of station supply shall be from tertiary of the transformer as clarified in clarification-1**
260	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat Switchyard layout, Dwg. No. 2 & 3 & Price Schedule 1C	Neutral formation shall be arranged through Al. Tube or ACSR Conductor or XLPE Cable, **Please confirm the requirement.**	**Finalized during detailed engineering. Bidders to consider the price for the proposed arrangement in the BPS of corresponding transformer price**
261	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat Switchyard layout, Dwg. No. 2 & 3 & Price Schedule 1C	Delta formation shall be arranged through Al. Tube or ACSR Conductor or XLPE Cable, **Please confirm the requirement.**	**Finalized during detailed engineering. Bidders to consider the price for the proposed arrangement in the BPS of corresponding transformer price**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
262	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat SLD & Price Schedule 1C	For 33kV VCB panel SLD shows the panel Motorized Isolator/Disconnector, DO Fuse included in 33kV VCB Panel. We understand that the VCB Panel shall be envisaged with only typical VCB panels with necessary IED without any motorized Isolator or DO Fuse. **Please clarify the requirement**	**Quote as per BPS. Shall be finalized during detailed engineering**
	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat SLD & Price Schedule 1C	For 33kV VCB panel SLD and Price Schedule shows supply of 1 No. Bus Coupler panel. However the 33kV Bus is a single Bus Section along with only 1 No. Incomer, please clarify whether to consider Bus Coupler as the panel may not be a feasible arrangement. **Please clarify the necessary equipments to be envisaged in VCB Panel.**	**There is no bus coupler requirement**
263	DRTLS_VOLUME-II B & Bid Price Schedule No.1C	Rahughat SLD & Price Schedule 1C	33kV Current transformer (NCT) is not envisaged for 24/30 MVA, 132 /33 kV Three Phase Power Transformer, **Please confirm.**	**Confirmed**
	DRTLS_VOLUME-II B & Bid Price Schedule No.1B	Dadakhet Switchyard layout, & Price Schedule 1B	Neutral formation shall be arranged through Al. Tube or ACSR Conductor or XLPE Cable, **Please confirm the requirement.**	**Finalized during detailed engineering. Bidders to consider the price for the proposed arrangement in the BPS of corresponding transformer price**
	DRTLS_VOLUME-II B & Bid Price Schedule No.1B	Dadakhet Switchyard layout, & Price Schedule 1B	Delta formation shall be arranged through Al. Tube or ACSR Conductor or XLPE Cable, **Please confirm the requirement.**	**Finalized during detailed engineering. Bidders to consider the price for the proposed arrangement in the BPS of corresponding transformer price**
264	DRTLS_VOLUME-II B & Bid Price Schedule No.1B	Dadakhet Switchyard layout, & Price Schedule 1B	We understand 132/33kV Transformers are of YNyn0D11 vector group and tertiary winding is in unloaded condition, **Please confirm the requirement**	**Confirmed**
265	DRTLS_VOLUME-II B & Bid Price Schedule No.1B	Dadakhet Switchyard layout, & Price Schedule 1B	Please confirm 200KVA Station transformer shall be connected to the 33kV Bus or to the Tertairy of 132/33kV Transformers	**200KVA Station transformer shall be connected to the 33kV Bus**
266	DRTLS_VOLUME-II B & Bid Price Schedule No.1B	Dadakhet Switchyard layout, & Price Schedule 1B	HVW system & hydrant system is not envisaged for 132/33kV Transformers, **kindly confirm Fire Fighting system shall not be envisaged for the Power Transformer.**	**Confirmed**
267	DRTLS_VOLUME-II B	Chapter 19 – General Technical Requirement, GIS （P 19-40） ANNEXURE-3, TABLE-3A	Generally, when designing current transformer coils, priority is given to design transformation ratio, capacity and accuracy level, then the "Min. Knee pt. Voltage Vk" and "Max.Excitation current at Vk" are determined, and finally the coil resistance is measured. For this project, after determining the transformation ratio and "Knee point value", no matter how to adjust the winding structure, model and material, the resistance value in the technical specification can not reach. After repeated calculation and confirm, the "Max. CT Sec. Wdg. Resistance (ohm)" of Line CT for 245kV is too small to design. It do not match ratio and knee point. We recommend that the "Max. CT Sec. Wdg. Resistance (ohm)" shall be 12/10 in stead of 8/4. **Kindly confirm.**	**Finalized during detailed engineering**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
268	DRTLS_VOLUME-II B	Chapter 19 – General Technical Requirement, GIS （P 19-41） ANNEXURE-3, TABLE-3B	The "Max. CT Sec.Wdg. Resistance (ohm)" and "Max.Excitation current at Vk (in mA) " for 200-100(Min. Knee pt. Voltage Vk) of Transf CT for 132kV is missing. We recommend that the "Max. CT Sec.Wdg. Resistance (ohm)" shall be 8/4/2.7/1.35 in stead of 8/4. The "Max.Excitation current at Vk (in mA) " shall be 25/50/75/150 in stead of 25/50. **Kindly confirm.**	**Finalized during detailed engineering**
269	DRTLS_VOLUME-II B	hapter 19 – General Technical Requirement, GIS （P 19-42） ANNEXURE-3, TABLE-3C	Generally, when designing current transformer coils, priority is given to design transformation ratio, capacity and accuracy level, then the "Min. Knee pt. Voltage Vk" and "Max.Excitation current at Vk" are determined, and finally the coil resistance is measured. For this project, after determining the transformation ratio and "Knee point value", no matter how to adjust the winding structure, model and material, the resistance value in the technical specification can not reach. After repeated calculation and confirm, the "Max. CT Sec. Wdg. Resistance (ohm)" of Bus Coupler CT for 245kV is too small to design. It do not match ratio and knee point. We recommend that the "Max. CT Sec. Wdg. Resistance (ohm)" shall be 40/20//10 in stead of 15/8/4. **Kindly confirm.**	**Finalized during detailed engineering**
270	DRTLS_VOLUME-II B	Clause 1.2; (page 16-1) and clause 1.12 & 1.13 (page 16-2) of tech spec. SECTION 22: EHV XLPE POWER CABLE	In this clause, extruded type corrugated Al sheath required but same facility is not available with manufacturer. Kindly confirm whether manufacturer can supply seam welded corrugated Al sheath. **Kindly confirm.**	**Will be finalized during detailed engineering**
271	DRTLS_VOLUME-II B	Clause 1.8 (page 16-1) of tech spec SECTION 22: EHV XLPE POWER CABLE	In this clause, Segmented type conductor specified but please note that segmented conductor starts from 1000 sq.mm & above cable sizes. And below 1000 sq.mm cable size conductor shape will be stranded compacted circular. Hence please review & confirm, snap shot attached below.	**Will be as per latest IEC**
272	DRTLS_VOLUME-II B	Clause 1.13 (page 16-2) of tech spec. SECTION 22: EHV XLPE POWER CABLE	Please confirm corrugated Al sheath short circuit rating with duration.	**Will be finalized during detailed engineering**
273	DRTLS_VOLUME-II B	Clause 1.14 (page 16-2) of tech spec. SECTION 22: EHV XLPE POWER CABLE	1.13 METALLIC SCREEN: P The metal sheath shall consist of a tube of corrugated aluminium of at least 99.5% purity. The thickness of the corrugated aluminium sheath shall be designed to meet the requirement of the system short circuit rating as specified in the bidding documents.	**Shall be as per the specifications**
274	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 53.33/66.67MVA, 1-Ph, 220/132kV Power Transformer.**	**For 53.33 / 66.67MVA, 1-Ph, 220/132kV Power Transformer:** As per referred clause, we understand that transformer manufacturer: Must have designed, manufactured and supplied power transformer of **any MVA capacity of 220 kV or higher Voltage Class,** atleast twice the bid quantity as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for atleast Two (2) Years as on the date of bid opening. **Kindly confirm our understanding.**	**Must be of 53.33/66.67 MVA ,1- Phase of 220/132 kV or 200 MVA ,3-Phase ,220/132 kV**

Sl.No	Volume / Section	Clause No / Drawing No.	Bidder's Query	Client's Reply
275	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 8/10 MVA, 1-Ph, 132/33 kV Power Transformer.**	**<u>For 8/10 MVA, 1-Ph, 132/33 kV Power Transformer</u>:** As per referred clause, we understand that transformer manufacturer: Must have designed, manufactured and supplied power transformer of **any MVA capacity of 132 kV or higher Voltage Class**, atleast twice the bid quantity as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for atleast Two (2) Years as on the date of bid opening. **Kindly confirm our understanding.**	**Must be of 8/10 MVA ,1- Phase of 132/33 kV or 30 MVA ,3-Phase ,132/33kV**
276	DRTLS_VOLUME-II B	Item No.1 (ii), Power Transformer, Cl.No.2.5, Subcontractors, Section 3 - Evaluation and Qualification Criteria, **Regarding 24/30 MVA, 3-Ph, 132/33 kV Power Transformer.**	**<u>For 24/30 MVA, 3-Ph, 132/33 kV Power Transformer</u>:** As per referred clause, we understand that transformer manufacturer: Must have designed, manufactured and supplied power transformer of **any MVA capacity of 132 kV or higher Voltage Class**, atleast twice the bid quantity as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for atleast Two (2) Years as on the date of bid opening. **Kindly confirm our understanding.**	**Must be of 24/ 30 MVA ,3-Phase ,132/33kV**
277	Volume-III, Bid Price Schedule	Sl. No. 3.6 & 46 of the Price schedule of Rahughat & Sl. No. 3.4.4 of Dadakhet:	1. Please provide the contour drawing for estimating cutting / filling, terracing 2. Please provide the property-line contour and length of retaining wall for estimating Retailing wall qty. Further, Against Sl.no.46, Price schedule 4C(i), Quantity is not mentioned, **please confirm the requirement.**	1. and 2. Bidder requested to visit the site to access the quantity. Please refer the corected Bid price schedule attached

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Dadakhet Rahughat132 kV Transmission Line Project

ELECTRICITY GRID MODERNIZATION PROJECT
PMD/EGMP/DRTLSS-077/78-01:Design, Supply, Installation ,Testing and Commissioning of Dadakhet Rahughat 132 kV Transmission Line and Associated Substations
Part 1: Dadakhet Rahughat 132 kV Transmission Line
Bid Price Schedule No. 1A: Supply and Delivery of Plant and Equipment from Abroad

S.N.	Description	Country of Origin	Quantity				Unit Price		Total Price	Taxes and Duties
			Unit	Quantity	Unit Wt. KG	Total Weiight (KG)/Quantity	Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7	8	9	10=7*9	11
A	**DADAKHET RAHUGHAT 132 KV TRANSMISSION LINE**									
1.0	**TOWER AND LINE MATERIALS**									
1.1	**Design, Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices(132 kV LINE)**									
1.1.2	**Tension Tower DB**									
a)	Stubs		Nos./Leg	**148**	83.75	12,395.00				
b)	Stubs- Raised Chimney (0.5M)		Nos./Leg	**48**	93.75	4,500.00				
c)	Stubs- Raised Chimney (1 M)		Nos./Leg	**40**	100.00	4,000.00				
d)	Basic Tower		Nos.	**59**	5,160.00	304,440.00				
e)	DB View Member @ Basic Body		Nos.	**5**	250.00	1,250.00				
f)	DB 0m Girder/Body Extension		Nos.	**26**	1,715.00	44,590.00				
g)	DB 3m Girder/Body Extension		Nos.	**-**	2,625.00	-				
h)	DB 6m Girder/Body Extension		Nos.	**14**	3,460.00	48,440.00				
i)	DB 9m Girder/Body Extension		Nos.	**14**	4,813.00	67,382.00				
j)	DB +1.5m Leg Ext		Nos.	**28**	100.00	2,800.00				
k)	DB +3m Leg Ext		Nos.	**37**	210.00	7,770.00				
l)	DB +4.5m Leg ext		Nos.	**64**	275.00	17,600.00				
m)	DB +6 m Leg Ext		Nos.	**38**	360.00	13,680.00				
n)	DB +7.5m Leg Ext		Nos.	**25**	475.00	11,875.00				
o)	DB +9m Leg Ext		Nos.	**43**	700.00	30,100.00				
1.1.3	**Tension Tower DC**									
a)	Stubs		Nos./Leg	**16**	102.00	1,632.00				
b)	Stubs- Raised Chimney (0.5M)		Nos./Leg	**8**	128.00	1,024.00				
c)	Stubs- Raised Chimney (1 M)		Nos./Leg	**12**	150.00	1,800.00				
d)	Basic Tower		Nos.	**9**	6,390.69	57,516.21				
e)	DC View Member @ Basic Body		Nos.	**1**	280.00	280.00				
f)	DC 0m Girder/Body Extension		Nos.	**3**	1,935.00	5,805.00				
g)	DC 3m Girder/Body Extension		Nos.	**-**	3,050.00	-				
h)	DC 6m Girder/Body Extension		Nos.	**1**	4,140.00	4,140.00				
i)	DC 9m Girder/Body Extension		Nos.	**4**	4,333.72	17,334.88				
j)	DC +1.5m Leg Ext		Nos.	**8**	120.00	960.00				
k)	DC +3m Leg Ext		Nos.	**4**	250.00	1,000.00				
l)	DC +4.5m Leg ext		Nos.	**8**	335.00	2,680.00				
m)	DC +6 m Leg Ext		Nos.	**6**	450.00	2,700.00				
n)	DC +7.5m Leg Ext		Nos.	**4**	560.00	2,240.00				
o)	DC +9m Leg Ext		Nos.	**6**	725.00	4,350.00				
1.1.4	**Tension Tower DD**									
a)	Stubs		Nos./Leg	**32**	160.00	5,120.00				

S.N.	Description	Country of Origin	Quantity				Unit Price		Total Price	Taxes and Duties
			Unit	Quantity	Unit Wt. KG	Total Weiight (KG)/Quantity	Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7	8	9	10=7*9	11
b)	Stubs- Raised Chimney (0.5M)		Nos./Leg	**6**	200.00	1,200.00				
c)	Stubs- Raised Chimney (1 M)			**10**	250.00	2,500.00				
d)	Basic Tower		Nos.	**12**	6,850.00	82,200.00				
e)	DD View Member @ Basic Body		Nos.	**-**	330.00	-				
f)	DD 0m Girder/Body Extension		Nos.	**4**	2,575.00	10,300.00				
g)	DD 3m Girder/Body Extension		Nos.	**2**	4,025.00	8,050.00				
h)	DD 6m Girder/Body Extension		Nos.	**3**	5,450.00	16,350.00				
i)	DD 9m Girder/Body Extension		Nos.	**3**	6,875.00	20,625.00				
j)	DD +1.5m Leg Ext		Nos.	**13**	196.00	2,548.00				
k)	DD +3m Leg Ext		Nos.	**6**	360.00	2,160.00				
l)	DD +4.5m Leg ext		Nos.	**8**	450.00	3,600.00				
m)	DD +6 m Leg Ext		Nos.	**2**	600.00	1,200.00				
n)	DD +7.5m Leg Ext		Nos.	**7**	750.00	5,250.00				
o)	DD +9m Leg Ext		Nos.	**12**	925.00	11,100.00				
1.1.5	**Tension Tower DDM**									
a)	Stubs		Nos./Leg	**12**	260.00	3,120.00				
b)	Stubs- Raised Chimney (0.5M / 1 M)		Nos./Leg	**6**	280.00	1,680.00				
c)	Stubs- Raised Chimney (0.5M / 1 M)			**6**	325.00	1,950.00				
d)	Basic Tower		Nos.	**6**	9,785.00	58,710.00				
e)	DDM View Member @ Basic Body		Nos.	**4**	350.00	1,400.00				
f)	DDM 0m Girder/Body Extension		Nos.	**-**	3,025.00	-				
g)	DDM 3m Girder/Body Extension		Nos.	**1**	4,685.00	4,685.00				
h)	DDM 6m Girder/Body Extension		Nos.	**-**	6,175.00	-				
i)	DDM 9m Girder/Body Extension		Nos.	**1**	7,995.00	7,995.00				
j)	DDM +1.5m Leg Ext		Nos.	**5**	210.00	1,050.00				
k)	DDM +3m Leg Ext		Nos.	**2**	400.00	800.00				
l)	DDM +4.5m Leg ext		Nos.	**7**	520.00	3,640.00				
m)	DDM +6 m Leg Ext		Nos.	**3**	690.00	2,070.00				
n)	DDM +7.5m Leg Ext		Nos.	**3**	875.00	2,625.00				
o)	DDM +9m Leg Ext		Nos.	**4**	1,100.00	4,400.00				
1.2	**Design, Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices(220 KV LILO TOWERS)**		Nos	**2**	35,000.00	70,000.00				
1.3	**Design, Fabrication & supply of steel structure for miscellaneous works on towers & tower extension parts**		Kgs			100,000.00				
	Total of 1		**KGS**			**1,110,612.09**				
2.0	**TOWER ACCESSORIES AND EARTHING**									
2.1	**Tower Accessories**									
i)	Danger Plate		Nos.	90		90				
ii)	Number Plate		Nos.	90		90				
iii)	Anti Climbing Device		Sets	90		90				
iv)	Phase Plate (set of 3)		Sets	180		180				
v)	Circuit plate (sets of 3)		Sets	180		180				
vi)	Aviation Signal		Sets	10		10				

S.N.	Description	Country of Origin	Quantity				Unit Price		Total Price	Taxes and Duties
			Unit	Quantity	Unit Wt. KG	Total Weiight (KG)/Quantity	Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7	8	9	10=7*9	11
vii)	Bird Guards		Sets	10		10				
	Total of Sub - Total 2.1									
2.2	**Tower Earthing Material**									
i)	Pipe Type		Sets	20		20				
ii)	Counterpoise Type			-		-				
a	Counterpoise Type - 25 m		Sets	60		60				
b	Counterpoise Type - 50 m		Sets	15		15				
c	Counterpoise type - 100M		Set	15		15				
	Total of Sub - Total 2.2									
	Total of 2									
3.0	**LINE MATERIALS**									
3.1	**Conductor and Accessories**									
i)	ACSR conductor, code name "CARDINAL" with armour rod etc to complete the job		km	165.0		165.0				
ii)	Stockbridge Vibration damper for CARDINAL Conductor with preformed armour rods		Sets	1,688		1,688				
iii)	Mid span compression joints for ACSR "CARDINAL" conductor		Nos.	119		119				
iv)	Repair sleeve for ACSR "CARDINAL" conductor		Nos.	119		119				
i)	ACSR conductor, code name "MOOSE" with armour rod etc to complete the job		km	15.0		15.0				
ii)	Stockbridge Vibration damper for MOOSE Conductor with preformed armour rods		Sets	96		96				
iii)	Mid span compression joints for ACSR "MOOSE" conductor		Nos.	12		12				
iv)	Repair sleeve for ACSR "MOOSE" conductor		Nos.	30		30				
	Sub - Total of 3.1							-		
3.2	**Optical Fiber ground wire (OPGW) and accessories**									
a	Optical fiber ground wire including intermediate splice boxes, terminal splice boxes and additional length as required		km	30.0		30.0				
b	Stockbridge Vibration damper for OPGW overhead ground wire with preformed armour rods		Nos.	430		430				
	Sub - Total of 3.2							-		
3.3	**Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "CARDINAL" conductor and attachment assemblies all complete for OPGW**									
i)	Single tension insulator string for "CARDINAL" with compression clamps all complete long rod Polymer Insulator (650kV BIL long rod polymer insulator)		Sets	608		608				
ii)	Double tension insulator string for "CARDINAL" with compression clamps all complete long rod Polymer Insulator (650kV BIL long rod polymer insulator)		Sets	484		484				

S.N.	Description	Country of Origin	Quantity				Unit Price		Total Price	Taxes and Duties
			Unit	Quantity	Unit Wt. KG	Total Weiight (KG)/Quantity	Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7	8	9	10=7*9	11
iii)	Double tension insulator string for "MOOSE" with compression clamps all complete long rod Polymer Insulator (1250kV BIL long rod polymer insulator)		Sets	216		216				
iii)	Pilot insulators string for "CARDINAL" with compression clamps all complete long rod Polymer Insulator (650kV BIL long rod polymer insulator)		Sets	120		120				
iv)	OPGW suspension preformed assembly complete for one tower		Sets	9		9				
v)	OPGW tension preformed assembly complete for one tower (one set/tower)		Sets	88		88				
	Sub - Total of 3.3							-		
3.4	**Optical Fiber and accessories**									
i)	Optical approach cable for both Substation		km	1.0		1.0				
ii)	Optical Distribution Frames for both substation to complete the jobs		Sets	2		2				
	Sub - Total of 3.4							-		
	Total of 3							-		
4.0	**SUPPLY OF SPARES**									
4.1	**Supply of Basic Tower with extension + 9m including Stub**									
ii)	Tower Type DB+9M Complete		Nos.	1	10056.75	10,056.75				
iii)	Tower Type DC+9M Complete		Nos.	1	10826.41	10,826.41				
iv)	Tower Type DD+9M Complete		Nos.	1	13885	13,885.00				
	Sub - Total of 4.1							-		
4.2	**Conductor and OPGW accessories**									
i)	Mid span compression joints for ACSR "CARDINAL" conductor		Nos.	10		10				
ii)	Repair sleeve for ACSR "CARDINAL" conductor		Nos.	10		10				
iii)	Insulator 90kN 650kV BIL long rod polymer insulator		Nos.	5		5				
iv)	Insulator 160kN capacity 650kV BIL long rod polymer insulator		Nos.	5		5				
v)	Stockbridge vibration damper for ACSR "CARDINAL" conductor with accessories		Nos.	24		24				
vi)	Vibration damper for OPGW		Nos.	12		12				
vii)	Optical approach cable		M	500.00		500.00				
	Sub - Total of 4.2							-		
	Total of 4 (Spare)							-		
5.0	**TOOLS AND TACKELS**									
5.1	Flat wrench of different sizes for common bolts		Sets	1		1				
5.2	Torque wrench of different sizes for common bolts		Sets	1		1				
5.3	Pipe wrench for common bolts		Sets	1		1				
5.4	Steel ropes (Pilot wire) 35 sq. mm		m	1,000		1,000				
5.5	Pilot wire grips (35 sq. mm) come along clamp		Nos.	3		3				
5.6	Rubber covered rollers, pullies(2,3 keys)		Sets	3		3				
5.7	Portable earthing set (for Transmission line maintenance safety purpose)		Sets	1		1				
5.8	Safety belt		Sets	5		5				
5.9	Line operator's leather gloves		Pairs	5		5				

S.N.	Description	Country of Origin	Quantity				Unit Price		Total Price	Taxes and Duties
			Unit	Quantity	Unit Wt. KG	Total Weiight (KG)/Quantity	Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7	8	9	10=7*9	11
5.10	Hydraulic,Manually operated portable crimping tools with 2 sets of each dies suitable for conductor "BEAR" and OPGW		Sets	1		1				
5.11	Safety helmet with chinstrap and accessories		Sets	10		10				
5.12	Insulation tester (10000 V) suitable for outdoor line testing purpose		Nos.	1		1				
5.13	Earth resistivity tester		Nos.	1		1				
5.14	Earthing resistance tester		Nos.	1		1				
5.15	Double sheeve pulley block 5 MT capacity with all accessories		Sets	1		1				
5.16	Sagging Winch 10 MT capacity hand operated		Sets	1		1				
5.17	Grip suitable for ACSR "BEAR" Conductor		Sets	4		4				
5.18	Grip suitable for "OPGW" Ground Wire		Sets	4		4				
	Total of 5							-		
	GRAND TOTAL (Part 1_Price Schedule 1A)(Total of column 9 & 10 to be carried forward to Schdule 5: Grand Summary)									

Note : 1) Bidder is required to quote prices in this Schedule for all the individual items/sub-items.

2.) The Prices of equipments are inclusive of type test charges

3.) BOQ given above is indicative only based on the scope of work as given in Employer's Requirements. The quantities mentioned above may undergo change during detailed engineering to meet the functional requirement and scope of work defined in Employer's Requirements.

Specify currency in accordance with BDS ITB Clause 32.1, Part-I of the Bidding Documents.

* Strike-out whichever is not applicable.

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

Date:

P

NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

Dadakhet Rahughat 132 kV Transmission Line Project

Electricity Grid Modernization Project

PMD/EGMP/DRTLSS-077/78-01:Design, Supply, Installation ,Testing and Commissioning of Dadakhet Rahughat 132 kV Transmission Line and Associated

Part 3: Rahughat 220/132/33 KV GIS Substation

Bid Price Schedule No. 4C : Installation and Other Services

(i): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
PART 1	**220/132/11kV GIS Rahughat Substation**							
	PART - A: OWNER ASSESSED QUANTITIES							
A1.1	**POWER TRANSFORMER**							
1	66.67MVA, 220/√3 / 132//√3 kV Single Phase Power Transformer (without transformer Oil)		Nos.	4				
2	Insulating oil for the above Power Transformer		Lot	4				
3.0	33kV Current transformer (NCT) for autotrasnformer		No	1				
A1.2	**POWER TRANSFORMER**							
1	24/30 MVA, 132 /11 kV Three Phase Power Transformer (without transformer Oil)		Nos.	1				
2	Insulating oil for the above Power Transformer		Lot	1				
C)	**LT Transformer**							
1	630KVA 33/0.400 kV with accessories to complete the scope of work		Nos.	2				
D	**245 kV EQUIPMENTS**							
D.1	**245 kV GIS Equipment**							
1.1	245kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]		Sets	2				
1.2	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]		Sets	1				
1.3	245kV, SF6 GIS Line bay Module [Module description as per Technical Projet specification]		Sets	5				
1.4	245kV, SF6 GIS spare Line feeder bay Module as per section project		Sets	1				
1.5	2145kV, SF6 GIS ICT bay Module including switching arrangement for 1-ph spare transformer [Module description as per Technical Project specification]		Sets	1				
1.6	220 kV XLPE Cable alongwith associated support structure and accessories							
1.6.1	220 kV, 800 Sq. mm XLPE Power cable with the necessary Straight Joints, AIS termination kit, GIS Termination Kit and accessories required to complete the installation of the cable from Gantry terminal to GIS		Mtr.	3000				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
1.6.2	220 kV, 500 Sq. mm XLPE Power cable with the necessary Straight Joints, AIS termination kit, GIS Termination Kit and accessories required to complete the installation of the cable from Power Transformer terminal to GIS		Mtr.	500				
1.7	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification and Section Project Specific Requirement]		Set	1				
D.2	**245KV Outdoor Equipment**							
1.1	216 KV Surge Arrester (1-phase)		Nos.	19				
1.2	245kV Capactive Voltage Transfromer		Nos.	21				
1.3	245kV Bus Post Insulator (1-Phase) (Except for wave trap)		Nos.	21				
E	**145kV Equipment**							
E.1	**145KV GIS Equipment**							
1.1	145kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]		Sets	2				
1.2	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]		Set	1				
1.3	145kV, SF6 GIS Line bay Module [Module description as per Technical Projet specification]		Sets	3				
1.4	145kV, SF6 GIS ICT feeder bay Module for 220/132 kV Transformer including switching arrangement for 1-ph spare transformer [Module description as per Technical Project specification]		Sets	1				
1.5	145kV, SF6 GIS ICT feeder bay Module for 132/11 kV 3-ph Transformer [Module description as per Technical Project specification]		Sets	1				
1.6	132 kV XLPE Cable including support structure and associated accessories							
1.6.1	132 kV, 500 Sq. mm XLPE Power cable with the necessary Straight Joints, AIS termination kit, GIS Termination Kit and accessories required to complete the installation of the cable from Gantry terminal to GIS and 220/132 Power Transformer to 132 KV GIS Terminal		Mtr.	1200				
1.6.2	132 kV, 240 Sq. mm XLPE Power cable with the necessary Straight Joints, AIS termination kit, GIS Termination Kit and accessories required to complete the installation of the cable from 132/33 KV Power Transformer terminal to GIS		Mtr.	500				
1.7	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification and Section Project Specific Requirement]		Set	1				
1.8	145kV, SF6/Air Bushing for Connecting GIS to AIS alongwith support structure							
1.8.1	1250A, 31.5kA, 1sec single phase		Set	16				
E.2	**145kV EQUIPMENT (AIS)**							
1.0	120 kV Surge Arrestors (1-Phase)		Nos.	16				
2.0	8800pF, 145 kV Capacitive Voltage Transformer (1-Phase)		Nos.	15				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
3.0	145KV Bus Post Insulator		Nos.	15				
F	**33 kV EQUIPMENT**							
1.1	30 kV Surge Arrester (1 ph.)		Nos	15				
1.2	33 kV, 630A Isolators with out earth switch (3-phase, DBR type)		No.	1				
1.3	36 kV BPI		Nos.	3				
1.4	36 kV HG Fuse along with support insulator (1-phase)		Nos.	3				
G	**33kV, 25 kA (3 Phase) Indoor switch gear panel**							
1.0	**33 kV Indoor VCB Switchgear**							
1.1	33kV 2500A Incomer		Nos	1				
1.2	33kV 1250A Outgoing		Nos	2				
1.3	33kV 2500A Buscoupler		Nos	1				
1.4	33 KV Station Transformer		Nos	1				
H	**Testing & Maintenance Equipment for GIS**							
1.1	SF6 Gas processing Unit		Set	1				
1.2	Partial Discharge Monitoring System		Set	1				
1.3	EOT crane for 220kV GIS Hall		Set	1				
1.4	EOT crane for 132kV GIS Hall		Set	1				
I	**RELAY PANELS (WITH AUTOMATION)**							
1	**245kV**							
1.1	Line Control and Protection Panel		Nos.	5				
1.2	Transformer Control and Protection Panel (For both HV & MV side)		Nos.	1				
1.3	Bus Coupler Control and Protection Panel		Nos.	1				
1.4	Bus Bar Protection Panel		Set	1				
2	**145kV**							
2.1	Line Control and Protection Panel		Nos.	3				
2.2	Transformer Control and Protection Panel (For both HV & MV side)		Nos.	1				
2.3	Bus Coupler Control and Protection Panel		Nos.	1				
2.4	Bus Bar Protection Panel		Set	1				
3	Other/Common equipments Pertaining to C & R System							
3.1	Time Synchronisation Equipment		No.	1				
3.2	Relay Test kit		No.	1				
J	**SUBSTATION AUTOMATION**							
1	Substation Automation System as per Technical Specification:							
1.1	220kV System		Nos.	6				
1.2	132 kV System		Nos.	4				
1.3	BCU for auxilary system		set	1				
1.4	33 kV HT Indoor Switchgear		Nos.	5				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
K	**DIgital Protection Coupler & PBAX**							
1	Digital Protection Coupler		Nos	6				
2	PBAX with per TS		Set	1				
3	Optical Distribution Frame complete in all respects as per technical specifications		Lot	1				
4	Optical Approach Cable -24 pair Fibre (DWSM -G.652D) along with Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable complete in all respects as per technical specifications		Lot	1				
L	**LT Switchgear (As per Technical specification)**							
1	400V Main switchboard		Set	1				
2	400V ACDB		Set	1				
3	400V MLDB		Set	1				
4	400V Emergency LDB		Set	1				
5	220V DCDB		Sets	1				
6.0	48V DCDB		Set	1				
M	**Batteries**							
1	220V							
1.1	220 V 600 Ah Maintenance Free Lead Acid Battery complete with all accessories		Set	2				
2	48V							
2.1	48 V 600Ah Maintenance Free Lead Acid Battery complete with all accessories		Nos	2				
N	**Float Cum Boost Battery Charger**							
1	Dual Mode (Main and Standby)Battery Charger for 220 V battery complete with all accessories							
1.1	80A/80A		Nos	2				
2	Dual Mode (Main and Standby)Battery Charger for 48 V battery complete with all accessories							
2.1	80A/80A		Nos	2				
O	**Diesel Generator with control Panel**							
1	250 kVA		Set	1				
P	**Fire Protection System**							
1	Portable /Trolley/Wheel mounted extinguishers							
1.1	9 litre water type		Nos	2				
1.2	50 litre foam type		Nos	2				
1.3	4.5 kg CO_2 type		Nos	6				
1.4	4.5 kg Dry Chemical Power (DCP) type		Nos	2				
2.0	Smoke detection system		Set	1				
3.0	Fire detection and Alarm System		Set	1				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
Q	**Cables along with clamps, glands, lugs and straight joints etc.**							
1.0	33kV HT 3C, 400 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 33 kV Line		KM	2				
2.0	33kV HT 3C, 400 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 33 kV LT Transformer		KM	0.5				
3.0	33kV HT Cable (1CX800 SQmm) Copper for 33 kV side of 132/33 kV Transformer alongwith accessories and termination equipments		KM	1				
4	Power Cables - (1.1kV grade)							
4.1	3.5Cx300 sqmm (XLPE) cable for filter Machine along with 2 nos outdoor receptacles - 250A		KM	0.5				
R	**Air conditioning**							
1	High wall type split AC unit of 2 TR capacities for control room, relay room and battery room		Nos.	25				
T	**Communication Equipment (detail as per TS)**							
	Telecommunication Equipments							
2.1	SDH Equipment (STM-4 upgradable to STM - 16, MADM upto 5 MSP protected directions)							
2.1	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equiped excluding (ii) & (iii) below and integration with existing Communication equipments at Dana and Kusma 220 kV S/s		**Nos.**	**1**				
(ii)	Optical Interface Cards/SFP							
(a)	L4.1 SFP(To be modified as per link budget calculation)		**Nos.**	**6**				
(b)	Tributary cards							
(c)	E1 Interface card (Min.8 interfaces per card)		**Set**	**2**				
(iii)	Giga -Ethernet Interface 10/100/1000 Mbps Base T with Layer-2 switching (Min 8 Interfaces per card)		**Nos.**	**2**				
2.2	Equipment Cabinets		**No**	**1**				
2.3	VOIP telephone instrument with one common POE+ switch (min. 8 port)		**set**	**2**				
2.2	Equipment Cabinets		No	1				
2.1	VOIP telephone instrument with one common POE+ switch (min. 8 port)		Set	2				
	SUB TOTAL PART-A							
	PART-B: VENDOR ASSESSED QUANTITIES							

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
A	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including conectors for Auto Transformer , Junction box, earthwire, earthing material risers, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following:							
1	**220 kV DM-type layout for GIS termination arrangement**							
1.1	Line Bay		Set	5				
1.2	Transformer Bay		Sets	1				
2	**132 kV DM-type layout for GIS termination arrangement**							
2.1	Line Bay		Sets	3				
2..2	Transformer Bay		Sets	1				
B	Bus post insulators, Spacers, equipment support structures, conductor(s), Al tube, clamp, connectors required for arrangement of Neutral formation for one transformer bank for making connection arrangement to connect spare unit in place of any other unit without physical shifting complete in all respect		Sets	1				
C	**Air conditioning & ventilation System**							
1	Ventilation & Airconditioning system (as per technical specification)							
1.1	220kV GIS Hall		LS	1				
1.2	132 kV GIS Hall		LS	1				
D	**Illumination System**							
1.1	Substation Lighting							
1.1.1	Control Room cum administrative building illumination		LS	1				
1.1.2	220kV GIS Building		LS	1				
1.1.3	132kV GIS Building		LS	1				
1.2	Security Room		LS	1				
1.3	fire Fighting Room		LS	1				
1.4	Outdoor Switchyard Lighting		LS	1				
1.5	Street Lighting		LS	1				
1.6	Occupancy sensor		LS	1				
1.7	Township Area Lighting		LS	1				
E	**Fire Protection System per technical Specification)**							
1	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house		set	1				
2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.		set	1				
3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer :							
3.1	53.33/66.67 MVA, 220/132 kV Single Phase Auto Transformer		nos	4				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
3.2	24/30 MVA,132/33 kV Three phase transformer		nos	1				
F	**POWER & CONTROL CABLES**							
1	**1.1 kV LV Cables**							
1.1	Power Cables(PVC)- (1.1kV grade)		LS	1				
1.2	Control Cable (PVC)- (1.1kV grade)		LS	1				
1.3	Cable glands, lugs & straight through joints for Power & Control cables		LS	1				
G	Visual Monitoring System for watch & ward as per technical specification		LS	1				
H	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
1.0	Earth Conductor (copper)		LS	1				
2.0	Earth Rod (copper clad steel)		LS	1				
3.0	Equipment for lightning protection		LS	1				
I	**SUBSTATION AUTOMATION**							
1	Integration of all 220/132kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.		LS	1				
	SUB TOTAL PART-B							
	PART-C: Civil Works							
	CIVIL AND ARCHITECTURAL WORKS ERECTION)							
1	**Steel structure for post, beam and equipment supporting frame complete with Foundation bolts,bolts, nuts and all accessories required to complete the scope of works**							
1.1	Rail Structure for 220/132 kVand 132/33 kV Power Transformer including access from Internal Road		Lot	1				
1.3	220 kV Take Off Gantry structure for Five line bays including internal gantry tower & beam structures as per scope of Contract		Lot	1				
1.4	132 kV Take Off Gantry structure for Three line bays including internal gantry tower & beam structures as per scope of Contract		Lot	1				
1.5	220 kV Capacitive Voltage Transformer		Nos	21				
1.6	220 kV Lightening Arrestor		Nos	19				
1.7	220 kV Bus Post Insulator		Nos	**21**				
1.8	132 kV Capacitive Voltage Transformer		Nos	**15**				
1.9	120 kV Lightening Arrestor		Nos	**16**				
1.1	132 kV Bus Post Insulator		Nos	**18**				
1.11	33 kV Disconnecting Switch without Earth Switch		Set	1				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
1.12	30 kV Lightening Arrestor		Nos	15				
1.13	33 kV Bus Support Insulator		Nos	12				
1.14	Earth mast		**Lot**	**1**				
1.16	Switchyard Fence as per Specifications (including Fence with Gate for 220kV switchyard)		RM	**400**				
1.17	Switchyard Fence as per Specificaitons (including Fence with Gate for132kV switchyard)		RM	**325**				
1.18	Identification plate, danger notice etc		**Lot**	**1**				
2	**Concrete Foundation for Equipment and Steel Structures complete with excavation, backfilling, form works, concrete works and reinforcement bars and all other necessary materials and works as per the specifications to complete the required scope of works**							
2.1	220/132 kV , Single Phase 53.33/66.67 MVA, Power Transformer complete along with the Stone filling over grating(40mm size),Fire Wall and Rail Cum Road as specified		Set	4				
2.2	132/33 kV , Three Phase 24/30 MVA, Power Transformer complete along with the Stone filling over grating(40mm size),Fire Wall and Rail Cum Road as specified		Set	1				
2.3	33/0.4 kV, Three phase , 630 kVA, ONAN Distribution Transformer		Set	2				
2.4	220 kV Take Off Gantry structure for five line bays including internal gantry tower & beam structures as per scope of Contract		Lot	1				
2.5	132 kV Take Off Gantry structure for three line bays, bus coupler & one transformer bays including internal gantry tower & beam structures as per scope of contract		Lot	**1**				
2.6	220 kV Capacitive Voltage Transformer		No.	**21**				
2.7	220 kV Lightening Arrestor		No.	**19**				
2.8	220 kV Bus Post Insulator		Set	**21**				
2.9	132 kV Capacitive Voltage Transformer		Set	**15**				
2.10	132 kV Lightening Arrestor		Set	**16**				
2.11	132 kV Bus Post Insulator		Set	**18**				
2.12	33 kV Disconnecting Switch without Earth Switch		Sets	**1**				
2.13	30 kV Lightening Arrestor		Nos.	**15**				
2.14	Switchyard Fence as per Specifications (including Fence with Gate for 132 kV switchyard)		Rm	**400**				
2.15	Switchyard Fence as per Specifications (including Fence with Gate for 33 kV switchyard)		Rm	**325**				
2.16	33 kV take off gantry structures & 33 kV, outdoor type cable termination structures / sealing-end and all accessories, Cable Trench, Duct Bank, Conduit and Handhole and Cable Tray as per spec		Lot	**1.00**				
3	**Miscellaneous**							
3.1	Clearing and stripping		lot	1.00				
3.2	Exploration works for soil strength for foundations including laboratory tests		locations	6.00				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
3.3	Geological Investigation for exploring the stability of soil mass and earth crust including but not limited to the age of mass movement, depth and location of underlying rocks, seismic hazards and acquifer.		LS	1.00				
3.4	Ground anchor works with or without RCC retaining/breast wall of appropriate size for protecting ground with interlocking up to underlying rocks using high yield steel bars fy=830 to 1030 MPA and 32 mm dia with grout.		No.	6.00				
3.5	Soil Resistivity test		lot	1.00				
3.6	Site Surveying, Grading with earth cutting and filling by borrow pit earth, including compaction and leveling etc all complete for all levels of 220 kV, 132kV and 33kV Switchyard ,Control Building,Staff Quarter, Guard House and all other locations		Lot	1.00				
3.7	All black top (Bituminous/Ashphalt) road from main road to Substation and internal road including crossings with a slab culvert for drainage just outside substation area all complete as per Specifications		Rm	1500				
3.8	Making of Gabion Box including rolling, cutting, weaving and crate filling (Hexagonal mesh size 100x120mm with 10SWG and salvage wire 7 SWG Box Size 2.0x1.0x1.0m)		cum	**1000**				
3.9	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts		Cu.M	5,000				
3.10	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)		Cu.M	500				
3.11	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)		Cu.M	250				
3.12	Providing and laying of Reinforced Cement Concrete Design Mix M25 including pre cast, shuttering, Grouting of pockets & underpinning but including steel reinforcement		Cu.M	200				
3.13	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)		Cu.M	200				
3.14	Misc. Structural steel including embedments, edge protection angles, gratings etc.		MT	25				
3.15	Supplying and installation of reinforcement bars in miscellaneous works as required in RCC Works		MT	20				
3.16	Stone spreading including antiweed treatment in switchyard excluding PCC		Sq. M.	5000				
3.17	Switchyard Drainage (running across and at sides of substation including subsurface) with RCC slab covering for efficient drainage in substation all complete as per specification		Lot	**1.00**				
4.0	**BUILDINGS**							
4.1	**CONTROL ROOM BULIDING**							
	All Civil works including internal and external finishing, internal cable trench, etc. complete as per technical specification and approved drawings,including excavation,Stone soling, PCC, RCC,form works and reinforcement steel (Including 33kV switchgear room)							
	Ground floor including foundation works		Sq. M.	375				
	First floor including stair case covering and ladder		Sq. M.	375				
4.2	**PRE ENGINEERED BUILDING**							

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
4.2.1	**220 KV GIS HALL**							
a.	220 KV GIS HALL		Sq. M.	450				
b.	AHU Room		Sq. M.	127				
c.	Panel Room		Sq. M.	38				
4.2.2	**132 KV GIS HALL**							
	All civil works related to pre-engineered 132 kV GIS Hall to be supplied as per schedule 1 including external and internal finishing,foundation, internal cable trench, excavation, PCC, RCC and reinfircement etc. complete to erect the building as per approved drawings and technical specification							
a.	132 KV GIS HALL		Sq. M.	400				
b.	AHU Room		Sq. M.	98				
c.	Panel Room		Sq. M.	37				
5.0	All civil works for following structures as per technical specification and approved drawings including internal and external finishing, excavation, PCC, RCC and reinforcement steel (Fe-500), etc							
5.1	Fire fighting pump house building		Sq. M.	98				
5.2	Water Tank		LS	1				
5.3	Staff Quarter including furnishingmaterials as specified							
5.3.1	Ground floor including foundation		Sq. M.	210				
5.3.2	First Floor		Sq. M.	210				
5.3.3	Second floor including stair case covering, parapet wall and roof top finishing works		Sq. M.	210				
5.4	Security Room(Guard House)		Sq. M.	36				
5.5	Parking Shed (for 5 Cars)		LS	1				
6.0	Concrete road as per specification including reinforcement & concrete							
	(a) Road 3.75m wide		Rm	400				
	(b) Road 5.5m wide		Nil					
7.0	Septic tank and soak pit complete as per technical specification and approved drawing including concrete & reinforcment							
	For 10 users(Control Building)		LS	2				
	For 50 users(Staff Quarter)		LS	1				
	For 5 users(Guard House)		LS	1				
8.0	Supplying and erecting dewatering pumps							
8.1	5 HP		Nos.	2				
8.2	0.5 HP		Nos.	2				
9.0	External water supply from borewell/main water supply point to Fire water Tank, control room building, Staff Quarter buildings,Guard House							
9.1	80 mm Dia GI pipe		RM	100				
9.2	50 mm Dia GI pipe		RM	80				

Sl. No.	Item Description	Installation Charges						
		Country of Origin	Unit	Quantity	Unit Price		Total Price	
					Local Currency	Foreign Currency	Local Currency	Foreign Currency
1	2	3	5	6	7	8	9=6*7	10=6*8
9.3	40mm Dia GI pipe		RM	60				
9.4	25mm Dia GI pipe		RM	40				
10.0	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.							
10.1	250 mm Dia.		RM	100				
10.2	150 mm Dia.		RM	150				
11.0	Construction of retaining wall with random rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12), providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes, 50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work, excavation of foundation for all lifts up to 3m above lower level.including excavation, PCC (1:2:4 & 1:4:8)		Cu. M	2100				
12.0	Construction of retaining wall with reinforced Cement Concrete (RCC) in 1:1.5:3 Cement ,Sand ,aggregate including excavation for foundation with lead and lift ,dry stone soling, leveling up with nominal concrete providing weep holes with necessary filter materials,reinforcement bars and coping on the top of Wall		Cu.M	3500				
13.0	Stone Masonry Drains in cement mortar 1:4 in foundation complete including excavation,PCC as per Drawing and Technical Specifications		R.m	3000				
14.0	Local sand filling around and under DG set foundation and other foundations as applicable		Cu.M	600				
15.0	Stone soling below foundations whereever specified in aproved drawings during detailed Engineering		Cu.M	600				
	SUB-TOTAL-C							
	Total for 220 /132/33kV Rahughat Substation (I) (Part-A+ Part-B+ Part C)							
	Total for Schedule 4(Total of column 9 and 10 to be carried forward to Schedule 5: Grand Summary)							

Name of Bidder:
Signature of Bidder: **Date:**
(Printed Name)
(Designation)
(Common Seal)