

POWER GRID BANGLADESH PLC

Design, Supply, Installation, Testing & Commissioning of 400/230/132 kV AIS Substation at Pekua and associated single/double circuit 400kV/230kV/132 kV LILO Lines on turnkey basis (Package-1)" (OCB No. PGCB/ADB/400kV/PEKUA/PTSIREP/PACKAGE-1)
Invitation for Bids No.: 27.21.0000.101.07.425.24.2920 dated May 28, 2024

CLARIFICATION NO.-3

Pre-bid meeting was held on 25th June, 2024 as per clause 7.4 of Instruction to Bidders of Volume 1 of 3 of the Bidding document. Clarification-1 was issued on August 04, 2024. Later, Clarification-2 was issued on August 19, 2024. Some queries were received from the prospective Bidders regarding the Bidding Documents after issuing Clarification-2. Clarifications on those queries are given below, which will form part of the bidding documents.

VOLUME 01 OF 3 OF THE BIDDING DOCUMENTS

S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
1.	Volume 1 / Section 3 (Evaluation and Qualification Criteria) / Clause No. 2.6 Subcontractors and Volume 1 / Section 4 (Bidding Forms) / Form EXP-7: Subcontractors	Description: Section 3 (Evaluation and Qualification Criteria) / 2.6 Subcontractors - As per tender requirement every equipment manufacturer have to provide Form EXP-7 Bidder's Query: Section 4 (Bidding Forms) / Form EXP-7: Subcontractors - Contract Name, Identification, Value and Details of Contract is Required. As per our understanding Form "EXP-7: Subcontractors" is only for Electrical and Civil Works subcontractors, not for manufacturers. Every equipment manufacturer does not need to provide Form EXP-7. Moreover, from our previous experience we have seen that manufacturers do not want to provide this document because contract name, contract identification, contract value these are not related information with manufacturers. Please confirm our understanding is correct.	Your Understanding is correct.	N



S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
2.	VOLUME 2A OF 3 (SUBSTATION PART) / Clause No. 5.2 Protection Relay – GeneralandVolume 1 / Section 3 (Evaluation and Qualification Criteria) / Clause No. 2.6 Subcontractors	Description:For standardization of operating performance, facilities and spare requirements, the protection relays and control systems, together with complete panels to be supplied under this project shall be manufactured by Hitachi (Switzerland/Sweden), Alstom/GE (France/UK/USA),Siemens (Germany), SEL (USA/UK/Canada) or equivalent.Since some of the above mentioned make, viz., Hitachi (Switzerland/Sweden), Alstom/GE (France/USA/UK), SEL (USA/UK/Canada) and Siemens (Germany) make Protection Relay and Substation Automation System (SAS) are already existed in PGCB's System and their performance is proven, only Manufacturer's Authorization letter among the Qualification Criteria of clause 2.6 of Section 3 of volume 1 of 3 of the Bidding Document is required to be submitted with the bid of the bidders who choose to propose Relay & SAS from these proven manufacturers. Acceptance of any other Relay, control system and SAS with similar characteristics shall have to fulfil the Qualification Criteria of clause 2.6 of Section 3 of volume 1 of 3 of the Bidding Document. Bidder's Query:As per our understanding for Hitachi (Switzerland/Sweden), Alstom/GE (France/USA/UK), SEL (USA/UK/Canada) and Siemens (Germany) make Protection Relay and Substation Automation System (SAS), we only need to consider Manufacturer's Authorization Letter. No need to consider any other manufacturer's documents as per Section 3, Clause no. 2.6. Please confirm our understanding is correct.	Your Understanding is correct.	N

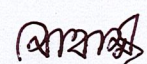
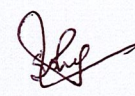


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S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
3.	VOLUME 2A OF 3 (SUBSTATION PART) / Clause No. 5.18 Digital Fault and Disturbance Recorder (DFDR)and Volume 1 / Section 3 (Evaluation and Qualification Criteria) / Clause No. 2.6 Subcontractors	Description:For the purpose of standardization, the DFDR to be supplied under this project shall be from Qualitrol (Belgium/UK), SIEMENS (Germany), SEL (USA) or equivalent.Since some of the above mentioned make, viz., Qualitrol (Belgium/UK), SIEMENS (Germany) make DFDRsare already existed in PGCB's System and their performance is proven, only Manufacturer's Authorization letter among the Qualification Criteria of sub-clause 2.6 of Section 3 of volume 1 of 3 of the Bidding Document is required to be submitted with the bid of the bidders who choose to propose DFDR from these proven manufacturers. Acceptance of any other DFDR with similar characteristics shall have to fulfill the Qualification Criteria of sub-clause 2.6 of Section 3 of volume 1 of 3 of the Bidding Document. Bidder's Query:As per our understanding for Qualitrol (Belgium/UK), SIEMENS (Germany) make DFDR, we only need to consider Manufacturer's Authorization Letter. No need to consider any other manufacturer's documents as per Section 3, Clasue no. 2.6. Please confirm our understanding is correct.	Your Understanding is correct.	N

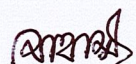
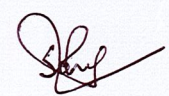



S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
4.	VOLUME 2A OF 3 (SUBSTATION PART) / SECTION 14 - FIBRE OPTIC MULTIPLEXER AND POWER LINE CARRIER EQUIPMENT FOR COMMUNICATION AND PROTECTION and Volume 1 / Section 3 (Evaluation and Qualification Criteria) / Clause No. 2.6 Subcontractors	Description: For standardization of operation performance, facilities and spare requirements, the fibre optic multiplexer equipment for communication and protection to be supplied under this project shall consist of equipment which can totally be integrated into the existing telecommunication system in PGCB's network, including the telecommunication network management system. The fibre optic multiplexers presently used in PGCB's network are: • Hitachi FOX 515/615, and • Areva MSE 5001, MSE 5010 • Huawei The Manufacturer of Telecommunication system – Fibre optic multiplexer equipment for communication and protection shall be: Hitachi Energy (Switzerland)(Former ABB), GE (Former Alstom/Areva), ZTE/HUAWEI (China). Any other Manufacturer of Telecommunication system shall have to fulfil the Qualification Criteria required in sub-clause 2.6. of Section 3 of Volume 1 of Tender documents. Bidder's Query: As per our understanding for Hitachi Energy (Switzerland)(Former ABB), GE (Former Alstom/Areva), ZTE/HUAWEI (China) make Telecommunication system – Fibre optic multiplexer equipment for communication and protection, we only need to consider Manufacturer's Authorization Letter. No need to consider any other manufacturer's documents as per Section 3, Clause no. 2.6. Please confirm our understanding is correct.	Your Understanding is correct.	N
5.	Price Schedule SSD Part/Schedule 4D-Installation and others/Item no.- 1K.1(ii) Slope protection	Description: Slope (1V:2H) protection with CC block with gravity retaining wall Bidder's Queries: Bidder's understanding is slope protection is only required where a boundary wall without a retaining wall is considered. And it is only for the front side of the substation. Please confirm our understanding and also change the unit of slope protection from 'lot' to 'meter'.	Slope protection is required where boundary wall without retaining wall is considered. Boundary wall without retaining wall is considered for front and west side of the substation. For 'unit' of slope protection, please follow the bidding document.	N


S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
6.	Price Schedule SSD Part/Schedule 4D-Installation and others/Item no.- 1K.2.xi(a) Boundary wall with RCC retaining wall	Description: RCC retaining wall will constructed to retain the earth fill. Bidder's Queries: 1. Is any slope protection required where the RCC retaining wall will be constructed? 2. During the site visit, it was observed that the existing land is required to be filled almost 8 meters (Full filling height). Should the retaining be 8 meters in height or it will be constructed as a combination of retaining wall and slope protection?	Full height of the retained earth to be considered for designing and construction of RCC retaining wall.	N
7.	Price Schedule SSD Part/Schedule 4D-Installation and others/Item no.- 1K.2.i(a), iii(a) & v(a)Outdoor gantry foundation	Description: The foundation quantity for the gantry column is given in 'lot'. Bidder's Queries0: Is the gantry foundation for the future bay included in the scope of this tender?Please clarify.	The gantry column foundation for the future bay is not included in the scope of this tender.	N
8.	Price Schedule: LILO of Anowara-Coxs Bazar 230kV double circuit Line at Matarbari 400/230/132kV Substation (Pekua): Schedule 1B & 2B(Line item No. 1.5,1.6) and Schedule 4B(Line item No. 3.5)	Description: As per the price schedule, the auxiliary crossarm quantities for tower types 2DT6 and 2QT6 are mentioned as 1 set and 1 set, respectively. But our understanding is that the auxiliary crossarm quantity for tower type 2DT6 will be 2 sets, and no auxiliary crossarm is needed for the 2QT6 tower. Bidder's Query: Please clarify our understanding and provide the revised price schedule as needed.	Please follow the bidding documents.	N



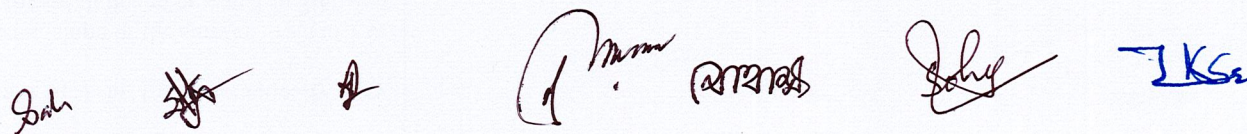

S.N.	Volume/ Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
9.	Volume 1 Section 3: Evaluation and Qualification Criteria, Clause 1.3.1 Quantifiable Deviations and Omissions & Clarification No. 1 Serial No. 21	Clause Description: Time to complete the plant and services from the effective date specified in Article 3 of the Contract Agreement for determining the time for completion of pre-commissioning activities is: 720 Days. Bidder's Query: As per Clarification No. 1 Serial No. 21, Employer replied to follow bidding documents for Project Completion time request. However, the approved Power Transformer manufacturer's require atleast 24 Months only for supply of 400/230/33 kV, 400/520MVA (ONAN/ONAF), three phase Power Transformer & 230/132 kV, 225/300MVA (ONAN/ONAF), three phase Power Transformer after design approval in addition to transportation, Erection, testing and Commissioning. We again request you to please relook the criteria of completion time of 720 Days (24 Months) for Plant and Services and kindly amend the requirement for 36 Months.	It shall be as per bidding documents	

VOLUME 02 OF 03 OF THE BIDDING DOCUMENTS (SUBSTATION)

S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
10.	General/Site visit	Description: There are two 11kV lines in the substation area. Bidder's Queries: Bidder's understanding is the 11kV lines will be relocated by the owner. Please clarify whether the transformation of the line is included in the scope of this project.	The 11kV line shall be relocated by the Employer.	N



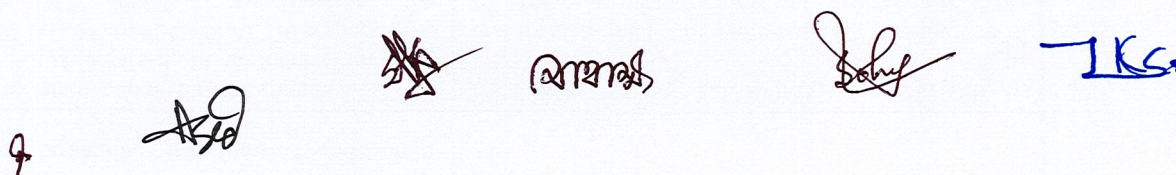
S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
11.	Auxiliary transformer foundation	Description: There is no line item for auxiliary transformer foundations in the price schedule. Bidder's Queries: Please add a line item for auxiliary transformer foundation in the price schedule.	Auxiliary transformer foundation costs are deemed to be included within the quoted price of the bidder.	N
12.	TDS for 230/132/33kV transformer	In the transformer's technical parameter table, items 3.6.3 and 3.6.4 show that the insulation levels of the neutral and low voltage side are LI 95 AC 38 and LI 170 AC 70 respectively. According to the IEC 60071-1 specification, the corresponding maximum voltages are 17.5kV and 36kV respectively. However, items 3.7.3 and 3.7.4 show 52kV in the transformer's technical parameter table, which does not meet the specification requirements. Are the maximum voltages of the neutral and low voltage side both 36kV? Please confirm.	230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER: The Insulation level of neutral and LV winding are LI 170 AC 70. Also, the insulation level of neutral and LV bushing are LI 170 AC 70.	N
13.	TDS for 230/132/33kV transformer	Items 12.1 and 12.2 of the transformer technical parameter table require a total of four cooling groups, one of which is a spare, but item 12.3 states that each cooling group has a spare fan. Please confirm whether there is a conflict. Please clarify the ratio of spare fans.	It shall be finalized during detailed engineering.	N
14.		There are two 11kV lines in the substation site provided by the owner. There is no relevant work content for handling them in the bidding documents. It is necessary to clarify with the owner whether the transformation of the line is included in the scope of work of this project.	The 11kV line shall be relocated by the Employer.	N
15.		Does this bidding include the expansion of communication equipment in the opposite substation caused by the connection of the new station?	Necessary extension/modification of communication system in existing remote stations shall be done under the scope of work of this tender.	N



S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
16.	Volume-2 (SS Part)/Section-11/11.3.3	Description: The entire surface within boundary walls shall be of uniform sloping site, sloping at 1 in 150 minimum slope to open channels around the entire perimeter. Bidder's Queries: As sloping of all pipelines at 1 in 150 is practically very difficult. Bidder proposes to make the slope of the surface drain at 1 in 500, the slope of the switchyard drainage pipe at 1 in 300, and the slope of the soil pipe at 1 in 150. Please confirm.	Please follow the bidding document.	N

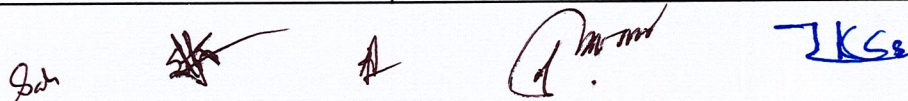
Volume 02 of 03 of the bidding documents (TRANSMISSION LINE)

S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
17.	230kV transmission line route plan	Description: As per our site visit, we didn't find the 230 kV existing transmission line. Bidder's Query: As per our understanding, the 230 kV transmission line route plan will be implemented later. Please confirm with us that if the 230kV route is shifted in the execution stage and additional 230kV towers are needed beyond the price schedule mentioned quantity to connect the transmission line to the substation, the price variation will be provided or not.	The Contractor will get payment as per final approved quantity based on mentioned unit price in the Contract.	N



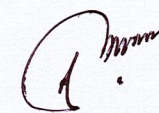
CLARIFICATION NO. 1 OF THE BIDDING DOCUMENTS (Issued on 04th August, 2024)

S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
18.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.1 400/230/33 kV, 400/520MVA, 3-PHASE POWER TRANSFORMER:	In Item 2.8, it is required that "Low voltage winding connection (LV): closed delta, with three terminals brought out outside of the tank". But in Item 5.4, the quantity of LV bushing is 4. Please confirm the quantity of LV bushing, 3 or 4.	The quantity of LV bushing shall be 3 considering closed delta.	N
19.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.1 400/230/33 kV, 400/520MVA, 3-PHASE POWER TRANSFORMER:	In Item 3.6.3 and 3.6.4, the insulation level for neutral and LV are different with LI 95/AC 38 and LI 170/AC 70. In Item 3.7.3 and 3.7.4, the highest voltage of neutral and LV side are both 52kV. In item 5.2.2 and 5.4.2, the voltage class of neutral bushing and LV bushing are 52kV and 36kV. Please clarify the voltage class of neutral and LV side.	400/230/33 kV, 400/520MVA, 3-PHASE POWER TRANSFORMER: The Insulation level of neutral and LV winding are LI 170 AC 70. However, the insulation level of neutral and LV bushing are LI 250 AC 95.	N
20.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.1 400/230/33 kV, 400/520MVA, 3-PHASE POWER TRANSFORMER:	In Item 7.1, it is required that "Total weight of autotransformer, equipped for service shall be less or equals to attached GA value". But the GA drawing is not the attachment. Please provide the GA drawing.	The GA drawing have to be provided by the bidder in their technical proposal.	N
21.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.2 230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER:	In Item 2.8, it is required that "Low voltage winding connection (LV): closed delta, with three terminals brought out outside of the tank". But in Item 5.4, the quantity of LV bushing is 4. Please confirm the quantity of LV bushing, 3 or 4.	The quantity of LV bushing shall be 3 considering closed delta.	N



S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
22.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.2 230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER:	In Item 3.6.3 and 3.6.4, the insulation level for neutral and LV are different with LI 95/AC 38 and LI 170/AC 70. In Item 3.7.3 and 3.7.4, the highest voltage of neutral and LV side are both 52kV. In item 5.2.2 and 5.4.2, the voltage class of neutral bushing and LV bushing are 52kV and 36kV. Please clarify the voltage class of neutral and LV side.	230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER: The Insulation level of neutral and LV winding are LI 170 AC 70. Also, the insulation level of neutral and LV bushing are LI 170 AC 70.	N
23.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.2 230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER:	In Item 5.1.2, the class of HV bushing is 420kV. But HV side voltage of this transformer is 230kV. Please clarify.	Since, the transformer is 230/132/33kV, HV side voltage of this transformer is 230kV.	N
24.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.2 230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER:	In Item 7.1, it is required that "Total weight of autotransformer, equipped for service shall be less or equals to attached GA value". But the GA drawing is not the attachment. Please provide the GA drawing.	The GA drawing have to be provided by the bidder in their technical proposal.	N
25.	CLARIFICATION NO. 1 ATTACHEMENT 11 PART 2 – TRANSFORMERS 2.2 230/132/33 kV, 225/300MVA, 3-PHASE POWER TRANSFORMER:	In Item 8.3, it is required that "Tap changer insulation level is Li 1050kV". Li 1050kV refers to the 245kV OLTC. According to C.F.V.V, the OLTC is at the end of the series winding, which is also the head of common winding for autotransformer. So the OLTC insulation level will not exceed 132kV, the voltage level of common winding. So Li 1050 is not reasonable. We suggest Li 650kV for the OLTC insulation, which means 145kV OLTC.	Your understanding is correct for 230/132/33 kV transformer with C.F.V.V regulation.	N




S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
26.	Clarification-1/ Sl. No.- 82 & Volume-2 (SS Part)/Section-11/11.2.2	Description: The minimum thickness of the footing shall be 300mm. As per tender document the code of practice for foundations: BS 8004. Bidder's Queries: Please make the minimum thickness of the footing as per code BS:8004 and not fixed to a minimum of 300mm thick.	Please follow the minimum thickness of the footing as specified in the tender document.	N

ADDENDUM-1 OF THE BIDDING DOCUMENTS (Issued on 04th August, 2024)

S.N.	Volume/Section	Reference and Queries of Prospective Bidders	Reply(Power Grid)	Addendum(Y/N)
27.	Addendum-1, Attachment: 2 & 3 & 4, Price Schedule and Addendum-1, Attachment-8, Single Line Diagram & Overall Layout	Description: 400kV equipment quantity mentioned in price schedule is contradict with single line diagram of 400kV substation. And the number of diameter mentioned in single line diagram of 400kV substation is not match with 400kV substation layout. Also in overall layout there is no marking of current scope of work and future provision. Bidder's Query: Please provide the revised single line diagram and overall layout as per price schedule.	The bidders are requested to follow the price schedule.	N
28.	Addendum-1, Attachment-8, Overall Layout and 400kV and 132kV transmission line route	Description: As per 400kV and 132kV transmission line route plan, the line in position at Pekua substation is contradict with overall layout plan. Bidder's Query: Please provide the revised overall layout plan in line with the transmission line route plan. And please confirm with us that if additional 400kV and 132kV towers are needed beyond the price schedule mentioned quantity to connect the transmission line to the substation, the price variation will be provided or not.	During execution stage line routes will be finalized. The Contractor will get payment as per final approved quantity based on mentioned unit price in the Contract.	N
29.	Addendum-1, Attachment: 2 & 3 & 4, Line Item No.: 1A.4, 1A.12(C3), 1K.2(2B) and Addendum-1, Attachment-8, Overall Layout	Description: As per the price schedule, 27 sets of 400 kV disconnector switches without E/S are mentioned. But, as per the philosophy of the overall layout, the 400kV disconnector switch without E/S quantity will be 29 sets. Bidder's Query: Please clarify our understanding and provide the revised price schedule as needed.	The bidders are requested to follow the price schedule.	N