



**CLARIFICATIONS FOR 5140400 – SUPPLY AND INSTALLATION OF THE POKUASE BULK SUPPLY POINT (BSP)
SUBSTATION – DESIGN - BUILD**

PROPOSAL REFERENCE: 5140400/IFB/CB/07/18

Sl	Ref	Question	Answer
1	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	Few documents like price break-up schedule etc. are not in the documents received. Can you please check and advice?	<p>Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download.</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p>
2	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	We lack the Schedule of Prices, which has not been attached.	<p>Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download.</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p>
3	Drawing No. PMC-5091019-BSP-113	Our team wanted to know if the Surveyor who produced the drawing PMC-5091019-BSP-113 (Topo Layout) can provide the DTM or TIN file that generated the Contours. We tried to pull the Contours, but our software datum is different and does not replicate the elevation properly. Having the DTM (Digital Terrain Model) or TIN (Triangulated Irregular Network) File will help us model the internal driveways and model the proposed grading	<p>Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download.</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p>

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		of the site and set the Elevation of the Buildings. From there, we will be able to compute the needed Excavation and Earthwork in general.	
4	ITB 8.2	Site visit le 26 Juillet	Confirmed
5	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	But please kindly note that there is a missing of " Schedule of Price " as indicated in page 110 of Section V- Employer's Requirements, which read: See Excel spreadsheet attached (Schedule of Prices) Please check and give us clarification	Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
6	Sec. V – Employers Requirements	As per Section-V, Employers Requirements: Schedule of Rates & Prices: The Excel spreadsheet is not made available, request you to please mail the same	Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
7	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	However, we are not able to find BOQ in the Documents uploaded on Drive. Would request to please provide us BOQ.	Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
8	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	We couldn't find the price schedule in the folders. Please provide price schedule for same.	Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o

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9	Price Schedules included in Section IV, Technical and Financial Offer Bid Forms	We are unable to find out the spreadsheet for schedules of price / Rate as stated on Section V: Employers requirement - Schedules of Rates and Prices. Requesting you to kindly provide the spreadsheet for Schedules of Rates and Prices.	Uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
10	ITB Clause 5.4	We refer to the ITB Clause 5.4, which specify that the "Government-Owned Enterprises (GOEs) are not eligible to compete for MCC-funded contracts for goods or works. Further refer to Clause (y) in A General of ITB, which read "Government-Owned Enterprise" or "GOE" has the definition given the term in the MCC Program Procurement Guidelines. Hence, we refer to the Guidelines, which read as below: P14.1.1 "Government-Owned Enterprise" or "GOE" is any enterprise established for a commercial or business purpose that is owned and/or controlled by a Government (whether directly or indirectly). So we are writing to request for clarification. We are a Chinese State Owned Company, does it means that we could not bid for this project?	By ELI-2 under Section IV. Technical and Financial Offer Bid Forms, Government-Owned Enterprises (GOEs) as defined by the Program Procurement Guidelines are not eligible to compete for MCC-funded contracts for goods or works
11	Section III: Bid Review, Evaluation Criteria, and Bidder Qualification Requirements	The 330 KV Transmission Line scope is not clear from the bid documents. Please confirm the tentative scope for the Transmission Line works covering the reconstruction for same and the approximate route length. The BOQ does not provide any details including the route length involved. If it is reconstruction of two end towers and re- conductor for a short route length only, then the Tender requirement of Clause 3.5.3 (4) calling for Specific Experience in Key Activity i.e. under this clause experience in Construction of two Transmission Line Contracts of 220 KV and above, is not clear. In case of only short route length, modification is this Specific Experience in Key Activity clause requirement still valid / required.	Refer to Section 3.2.1 (D) of Volume IIA, Employer's Technical Requirement. Items include but not limited to: (1) Four (4) new E3/E4 Towers to break into existing 330kV line (contractor confirm tower suitability through study); (2) conductor as necessary; (3) Recovery of two existing towers T2 & T3 The Contractor shall demonstrate experience in construction of Transmission Line of 220 KV and above as required. Modification shall be considered as relevant experience. For experience in construction of Transmission Lines, any contract value shall be accepted.

SI	Ref	Question	Answer
		Please confirm that these two Transmission Line contracts of any value can be considered	
12	Section III: Bid Review, Evaluation Criteria, and Bidder Qualification Requirements	Similarly, clause 3.5.3 (5) calling for Specific experience of Construction of FIVE medium voltage indoor Gas Insulated metal enclosed Switchgear Substations. Hope here also no value of contract is required like point (1) above. Please confirm. Also confirm for 33 KV one number Gas Insulated Indoor Substation being the tender scope requirement then why the specifications calls for experience of having done 5 numbers (FIVE) 33 KV Gas Insulated Substation for Specific Experience under Key Activity. Please confirm or consider this 33kV or above voltage level experience is acceptable.	The Contractor shall demonstrate experience in construction of FIVE medium voltage indoor Gas Insulated metal enclosed Switchgear either as standalone projects or part of large projects. The Value of the contract will be a factor but will be taken into context with other components of the whole projects.
13	Section III: Bid Review, Evaluation Criteria, and Bidder Qualification Requirements	Similarly, it is not clear that for ONE 330 KV Substation why experience calls for having done SIX CONTRACTS of similar nature each of value 25 MUSD as per Clause 3.5.2 for Similar Experience. Please clarify / confirm. We are also presuming that the experience under this clause is looking for 330 KV or above Substation experience only for SIX CONTRACTS. Please confirm.	Experience of SIX contracts at least USD25M is required. Consider experience of 220kV and above.
14	ITB Sec. 5 and ITB Sec. 5.9	Are there any restrictions in terms of the nationality of participating companies?	Refer to ITB Section 5 and in particular ITB Section 5.9 which deals with eligibility restrictions.
15	Sub-Clause 6.18 Non-Discrimination and Equal Opportunity	Is there any preferred countries in relation to this project?	There are no preferred countries in relation to this project.
16	IFB 5.4	With regards to IFB 5.4 Government owned Enterprises, it is understood that GOEs are prohibited to compete MCC-funded contracts, but it's not explicitly expressed whether the said GOEs are established within Ghana or other foreign GOEs are banned as well. And do we need any documentations to prove if we are formed not primarily for commercial or business purposes? We shall be very grateful if you could furnish us with Part 7 MCC's Program Procurement Guidelines.	You can source Part 7 of Program Procurement Guidelines on the MCC Website www.mcc.gov/ppg .

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17	Volume IIA - Employer's Technical Requirement - Chapter 1 - Clause 1.1.2	<p>As per mentioned in the Clause we understand that the Scope of Work involves:</p> <ol style="list-style-type: none"> 1. LILO: 330kV existing transmission line between Aboadze and Volta; 2. Package 1A - Design, Supply and Construction of 330/34.5kV GRIDCO Substation 3. Package 1B - Design, Supply and Construction of 33/11kV ECG Substation <p>AND Package 2 - Construction of 33kV and 11kV Interconnection Lines is not the part of Scope of Work for this contract.</p> <p>Please confirm whether the Bidder has to quote for total scope of Package 1A, Package 1B and Package 2.</p>	<p>Bidders shall quote for total scope of Package 1A and Package 1B. Package 2 is not part of this bid.</p>
18	Section III - Qualification and Evaluation Criteria - 3.5.2 - Experience - Construction	<p>Please clarify whether Bidder can demonstrate the Experience in Transmission Line Projects alone executed in last 10 Years to qualify for Experience in Construction and if yes how many projects we can show.</p>	<p>No. Refer to Section III - Qualification and Evaluation Criteria - 3.5.2 - Experience - Construction</p>
19	Section IV. Technical and Financial Offer Bid Forms - Schedule of Prices - Preamble - Clause 2	<p>The quantities given in the Schedule of Prices are estimated and provisional and are given to provide a common basis for bidding. Then please clarify if there is revision in the quantity at execution stage what will be the acceptable percentage revision.</p>	<p>The contract will be executed as a Design and Build based on FIDIC yellow book. The quantities shall be based on Contractor's own design.</p>
20	Section VII - Particular Conditions of Contract - Clause 14.9 - Payment of Retention Money	<p>As mentioned in the Clause the Retention Money will be paid in two halves - 40% in first half and 50% in Second Half. Please clarify how and when the balance 10% will be paid.</p>	<p>Refer to the Particular Conditions of Contract. One half of the Retention Money is released when the Taking-Over Certificate is issued, and the other half of the Retention Money is released when the Defects Notification Period has expired.</p>
21	Volume IIA - Employer's Technical Requirement - Chapter 1 - Clause	<p>As per the Table 1 of Clause 2.4 - Project Schedule the Commencement of Work is 28 days after Contract Award whereas Instruction to Bidder - Clause 43.1 mentioned that the Commencement Date shall be agreed between the successful Bidder and the Employer but shall be</p>	<p>Commencement Date shall be within forty-two (42) days after the Contractor receives the Letter of Acceptance issued by the Employer. To ensure this, Contractor Shall:</p>

SI	Ref	Question	Answer
	2.4 - Project Schedule - Table 1 AND ITB 43	within forty-two (42) days after the Contractor receives the Letter of Acceptance issued by the Employer. Please clarify the exact Commencement date. Also, commencement date should be after handing over of hindrance-free land by MiDA - please clarify.	(1) Submit Advance Payment Guarantee within twenty-eight (28) days after receiving the Letter of Acceptance issued by the Employer (2) Submit Performance Guarantee within twenty-eight (28) days after receiving the Letter of Acceptance issued by the Employer. Access to site will be granted to the contractor within 42 days upon meeting above conditions.
22	Payment Terms Appendix to Letter of Financial Offer - Clause 14.6	As mentioned in the Clause Minimum amount of an Interim Payment Certificate shall be: 2.5% of the Contract Price, with no more than 1 submission per month. Please clarify what is the milestone for the payment against supply i.e. Payment of supply of equipment will be made against the presentation of Bill of Lading along with Invoice OR after receipt of material at site.	Kindly read this provision in conjunction with Clause 14.6 of the GCC as total minimum amount of an Interim Payment Certificate shall be two and one-half percent (2.5%) of the Contract Price, with no more than one (1) submission per month. Valuation will be made consistent with Clause 14.
23	Specification	We could not find technical specification for Package 1B - 33/11kV ECG Substation and Package 2 - Construction of 33kV and 11kV Interconnection Lines. Please provide the same.	Refer to Vol. IIC for specifications of 33/11kV ECG Substation. Package 2 is not part of this bid package.
24	Drawings	Following Drawings are not available: 1. PMC - 5091019-BSP-402 2. PMC - 5091019-BSP-403 3. PMC - 5091019-BSP-404 4. PMC - 5091019-BSP-405 Please provide the drawings for existing 330kV towers E3 and D3	These drawings are for Package 2 which is not part of this bid package. E3 and D3 330kV tower drawings are uploaded on MiDA Google Drive shared link as Tower Type C and D; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
25	Section III - Qualification and Evaluation Criteria - Financial Situation - 3.3.2.2 - Annual Design Turnover	As mentioned under the qualification requirements the Bidder should demonstrate the Minimum average annual design turnover of USD2,000,000, within last 3 Years for contract in progress or completed and are to be demonstrated in the audited financial statements (income statements) of the last 3 years. Our audited Income statements (Balance Sheet) always demonstrate the Average Annual Construction Turnover.	Your certified audited accounts shall demonstrate this requirement.

SI	Ref	Question	Answer
		Please confirm whether the Letter demonstrating the requirement of Minimum average annual design turnover of USD2,000,000 certified by Chartered Accountant will serve the purpose.	
26	Price Schedule	We don't find any BOQ in the documents we received. Could you tell us if there is a BOQ in this bid or if we need to submit our own BOQ?	The Schedule of Prices has been uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
27	Section V Employer's requirements	See Excel spreadsheet attached (Schedule of Prices). No price schedule has been attached. We request for Price schedules to be sent.	The Schedule of Prices has been uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
28	Section III. Qualification and Evaluation Criteria	3.4 Sub-factor 3.4.3 - For the above or other contracts executed during the period stipulated in 3.4.2 above, a minimum experience in the following key activities: 1.) Design of Six (6) Air insulated Substations of 220kV and above. 2.) Three (3) of the Six (6) substations shall be in a developing country. 3.) Design of two (2) Transmission Line 220kV and above 4.) Design of five (5) indoor medium voltage metal enclosed gas switchgear Substation Our understanding that item 1, 2 and 4 are applicable for Package 1 and Item 3 is only applicable for Package 2. Kindly confirm.	Items 1, 2 and 4 are applicable for Package 1A and Package 1B; Item 3 is for 330kV Line which is part of Package 1A. Package 2 is not part of this current bid package.
29	Section III. Qualification and Evaluation Criteria	Sub-factor 3.5.3 - For the above or other contracts executed during the period stipulated in 3.5.2 above, a minimum experience in the following key activities: 1. Construction of six (6) Air insulated Substations of 132kV and above	Items 1, 2, 3 and 5 are applicable for Package 1A and Package 1B; Item 4 is for 330kV Line which is part of Package 1A. Package 2 is not part of this current bid package.

SI	Ref	Question	Answer
		<p>2. Three of the six (6) Substations shall be 220kV or above</p> <p>3. Two of the six (6) substations shall be in a developing country</p> <p>4. Construction of two (2) Transmission line 220kV and above</p> <p>5. Construction of five (5) medium voltage indoor gas insulated metal enclosed switchgear substations</p> <p>Our understanding that item 1, 2, 3 and 5 are applicable for Package 1 and Item 4 is only applicable for Package 2. Kindly confirm</p>	
30	Vol IIA. Scope_ requirements	<p>1.3 The works under Packages 1A and 1B shall be awarded as a single responsibility contract and Package 2 as a separate contract.</p> <p>Kindly clarify if Packages 1A and 1B could be quoted/awarded in two separate contracts or not.</p>	<p>NO. Package 1A and 1B will be quoted in separate price schedules but will be awarded as single responsibility contract.</p> <p>Package 2 is not part of this current bid package.</p>
31	Section VI. General Conditions of Contract	<p>The General Conditions of Contract can be received from the Employer through the Engineer.</p> <p>We request employer to please provide the General Conditions of Contract.</p>	<p>The General Conditions of Contract shall be General Conditions of Contract for Plant and Design-Build, 1st Edition 1999 referred to as FIDIC Yellow Book licensed for use by MCC and MCA Entities and is made available by the Employer through the Engineer as provided below:</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p>
32	Vol-IIA	<p>“The removal/recovery of the existing tower T2 and T3 and associated material.”</p> <p>(i) Kindly provide Tower T2 & T3 detail.</p> <p>(ii) Kindly confirm Tower is unstrung.</p>	<p>(1) T2 and T3 as per drawing uploaded on MiDA Google Drive shared link as Tower Type C and D; please follow the Link provided below to download.</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p> <p>(2) No. Line is currently energised. Shutdown will be required for decommissioning and re- conducting works.</p>

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33	Vol-IIA	<p>"Removal of the 330-kV line section between."</p> <p>Scope is not clear. Kindly clarify</p>	<p>Removal of the existing 330kV transmission line section and re- conducting of proposed section.</p>
34	Vol-IIA	<p>"the breaking and termination of the 330kV existing transmission line ..."</p> <p>(I) Kindly share existing Transmission details (ii) Package-1A scope is limited to 33kV Isolator shown in Drawing no PMC-5091019-BSP-101. Kindly confirm</p>	<p>Drawings of E3 and D3 tower details uploaded on MiDA Google Drive shared link as Towers C and D; please follow the Link provided below to download.</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p> <p>Refer to Volume IIA: Section 3.2.1 for full details of the scope of Package 1A.</p>
35	Vol-IIA 1.3.1 Project Packaging for Phase 1 Page-9	<p>"The design makes room for future expansion of the Substation into six fully equipped dia..."</p> <p>Size of Control Room Building shared on drawing no PMC-5091019-BSP-105 is fixed or same can be finalized during detailed engineering. Kindly confirm.</p>	<p>Drawing no PMC-5091019-BSP-105 shows indicative requirements; Contractor to determine detailed requirements from his detailed engineering design.</p>
36	Vol-IIA 1.3.1 Project Packaging for Phase 1 Page-9	<p>"equipment layout drawing PMC-5091019-BSP-103. ..."</p> <p>i) Kindly confirm Gantry structure arrangement for Future bay is to be kept at present scope as shown in layout. (ii) Kindly share details of total plot plan marking Aboadze & Volt-A tower. (iii) Road shown for Future Extension to be kept at present scope. Kindly confirm</p>	<p>The contractor shall provide gantry structure arrangement in the submission of detailed design.</p> <p>i) Confirmed ii) This is not required for this Scope of Work. iii) Road shall include for future expansion as shown in the layout.</p>
37	Vol-IIA 1.3.2 Project Packaging for Phase 1B33/11kV ECG Substation Page-10	<p>The 33/11kV ECG Indoor Substation Kindly confirm incomer source 1a, 1b, 2a & 2b for 33KV Incomer.</p>	<p>The incomers 1 (a) and 1 (b) shall be coming from Transformer 1 on the GRIDCo side; The incomers 2 (a) and 2 (b) shall be coming from Transformer 2 on the GRIDCo side;</p>

SI	Ref	Question	Answer
38	Vol-IIA 1.3.2 Project Packaging for Phase 1B33/11kV ECG Substation Page-10	"equipment layout drawing PMC-5091019-BSP-202...". Section shown in Plan layout is not available. Kindly make available	Refer to drawing PMC-5091019-BSP-219
39	Vol-IIA	PMC-5091019-BSP-202 Kindly share details of laying of UG Cable	Refer to drawing PMC-5091019-BSP-219
40	Vol-IIA Cl. 3.2.1.b, Page 27	"Supply all spare parts." (i) Kindly provide mandatory spares, tool & tackle list (ii) Kindly provide BOQ for Quotation	The Schedule of Prices showing mandatory spare parts has been uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download. <a href="https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv
o7urwujRADwuPA6o">https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv o7urwujRADwuPA6o
41	Vol-IIA Cl. 3.2.1.A.v Page 29	"Design, supply and install security cameras and access control systems for the station." Kindly confirm location of Access system & camera to be installed.	Refer to drawing numbers PMC-5091019-BSP-121, PMC- 5091019-BSP-122, PMC-5091019-BSP-124A, PMC- 5091019-BSP-124B, and PMC-5091019-BSP-124C for GRIDCo side. Refer to drawing number PMC-5091019-BSP-216 and PMC-5091019-BSP-217 for ECG side.
42	Vol-IIID Cl. 1.9.2 Page 9	"Wind loads and the distribution of wind pressure on buildings and structures shall be determined in accordance with the recommendations on BS EN 1991- 1-4:2005+A1:2010- Eurocode 1" As per Cl. 12.4.5.1, Design gust wind speed is assumed to be 40 m/s, corresponding approximately to a dynamic pressure of 880 N/m ² . We consider same shall be applicable for all building design. Kindly confirm.	Yes, confirmed
43	Vol-IIID Cl. 1.9.2 Page 10	Load Combinations: 4. Dead Load + Seismic Load without Wind. We presume load combination no. 4 is applicable only for building design. For Switchyard structures, combination of wind load with short circuit force is much critical than seismic.	Yes, confirmed

SI	Ref	Question	Answer
		Kindly confirm.	
44	Vol-IID Cl. 1.11.2 Page 17	<p>"In particular, the footings under all external walls shall be of reinforced concrete wall with a minimum thickness of 225mm."</p> <p>We consider all external wall shall be supported over plinth/grade beams connected between column to column.</p> <p>Kindly confirm.</p>	Yes, confirmed
45	Vol-IID Cl. 1.12.1 Page 24	<p>Rainfall run-off and general drainage of the substation yard shall be carried by appropriately sized reinforced concrete perimeter open channel drains to an appropriate outfall not less than 15m from the edge of the substation embankment and as shall be approved by the Engineer.</p> <p>We consider open channel drain shall be terminated at substation boundary. Connection between outfall to open drain shall be made through RCC Hume pipes.</p> <p>Kindly confirm.</p>	Yes, confirmed
46	Vol-IIB Cl 1.9, Pg.No.17	<p>"Signals to and from operation and protection systems shall be connected via these barrier relays...."</p> <p>For barrier relays a separate panel is required or it should be in control panel or protection panel.</p> <p>Kindly confirm</p>	Please ignore the reference of barrier relays in the specifications. They are now obsolete and not applicable anymore since the modern numerical relays guarantee this isolation from the Gateways/RTU's.
47	Vol-IIB Cl 1.9, Pg. No.18	<p>PSLD: -PMS-5091019-BSP-118</p> <p>CT accuracy class should be matched for high impedance connection.</p> <p>Kindly confirm</p>	Yes, confirmed
48	Vol-IIB Cl 1.9, Pg. No.17	<p>"The control equipment shall be subdivided electrically and mechanically....."</p> <p>We have considered 1 No. of bay control unit for each feeder. The requirement of mechanical & electrical separation is not clear. Does it mean it requires redundant bay control unit for each feeder? Please clarify.</p>	<p>In the Control building, controls for each bay shall</p> <ol style="list-style-type: none"> (1) Have separate electrical supplies; (2) Be housed in a separate Control Panel

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49	Vol-IIB CI 1.3, Pg. No.9	<p>“The meters shall be in a separate panel in the control room...”</p> <p>Bay CT, PT shall be used for main and check revenue meter. Separate CT, PT for revenue is not considered in PSLD.</p> <p>Kindly confirm</p>	Separate CT, PT for revenue shall not be considered.
50	Vol-IIB CI 6.9.1, Pg. No.166	<p>“It is required that equipment at the substation are monitored by GRIDCo System Control Centre (SCC) located in Tema.”</p> <p>Any upgradation work or modification work in SCC is not in our scope. Kindly confirm</p>	<p>No additional hardware at SCC Tema is anticipated, however the contractor shall include the following:</p> <ul style="list-style-type: none"> - Software Data Engineering for the station; - NMS Picture Editing; - Data Population; - Commissioning.
51	Vol-IIB CI 4.4, Pg. No.177	<p>“The boundary between control/protection and telecommunication will be at the dedicated terminals in the telecommunication room. Cables running to the dedicated terminals shall be included in the Control/protection tender but connection of cables to the dedicated terminals is part of the telecommunication supply”.</p> <p>Does this mean the cables from Control/protection panels to the telecommunication are in the control/protection tender scope but the actual connection of the cables to the terminals is part of telecommunication supply?</p> <p>Please elaborate on the requirement.</p>	Everything listed in the question is the sole responsibility of the Contractor.
52	Vol-IIE 1.0. TDS-BSP-001: 330/34.5kV, 120/145MVA POWER TRANSFORMER Item. 38	<p>Audible sound level (dB),</p> <p>ONAN at mean tap, with rated voltage and frequency $\leq 60\text{dB}$</p> <p>Our normal level is ~65~68Db. It is not economic if we have to follow 60dB. Kindly confirm if deviation is allowed on noise level</p>	Please comply with this specification in the TDS.

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53	Vol-IIIE 1.0. TDS-BSP-001: 330/34.5kV, 120/145MVA POWER TRANSFORMER Item. 26.1 and 29	Item-Load Losses (At rated voltage and frequency) $\leq 45\text{kW}$ Load losses guaranteed, calculated as $(2H_0+H_1+H_2)/4$ (kW) $\leq 300\text{kW}$ Are we allowed to deviate from the said losses and propose more economical losses? Kindly confirm	The losses specified are Maximum Losses. Only lower losses will be acceptable. Kindly note that the cost of losses shall be capitalised using the formula given on Section 2.7 of Volume IIB: BSP GRIDCo Tech Spec (Package 1A) for GRIDCo Transformers and Section 2.3.3.14 of Volume IIC: BSP ECG Tech Spec (Package 1B).
54	Vol-IIIE 2.0. TDS-BSP-002: 362KV DEAD TANK CIRCUIT BREAKER Item 2.14.	Creepage distance to earth and between terminals - 25mm/kV In the SLD, it shows that creepage distance 31mm/kV, while in the TDS it shows 25mm/kV. Kindly confirm that of these is applicable.	Please use 31mm/kV
55	EXP-1 to EXP-8	We couldn't find the form EXP-1---form EXP-8, Please clarify where we can get these forms.	Form EXP-1 to Form EXP-8 extracted and attached for clarity and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv_o7urwujRADwuPA6o
56	Bid Security: Clause 20, Bid Security, Section I, ITB	Our understanding is, Bid security can be prepared from reputed Banks located in the country of Bidder and not from the local banks located in Ghana	ITB 20.2 states that “Unless otherwise specified in the BDS , the Bid Security shall be a demand guarantee at the Bidder’s option, in any of the following forms: (a) an unconditional bank guarantee; or (b) an irrevocable letter of credit, from a reputable source in an eligible country”. If the Bid Security is issued by a financial institution located outside the Employer’s country, the Bid Security must be confirmed by a correspondent financial institution located in the Employer’s country, satisfactory to the Employer, to make the Bid Security enforceable. In the case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Technical and Financial Offer Bid Forms, or another substantially similar format approved by the Employer prior to Bid submission. In either case, the form must include the complete name of the Bidder and identify the correspondent financial institution if the financial institution is located outside the Employer’s country. The

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			Bid Security shall be valid for twenty-eight (28) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 19.2.
57	Price Schedule: Section II, Bid Data Sheet, Clause No. ITB 15.6 (b):	As the prices to be quoted in Schedule No.2 shall be on a CIP Basis at Pokuase Substation Site. Please clarify that Custom Duty/Import Duty and VAT in Ghana is exempted for foreign bidder or not. If not, please specify the percentages rate of Custom Duty/Import Duty and VAT in Ghana.	Refer to Clause 21 of the Particular Conditions of Contract, Section VII of Volume I of the bidding documents,
58	Terms of Payment	<p>Clause No. 14.2, Advance Payment, Appendix to Letter of Financial Offer, Section-IV, Technical and Financial Offer Bid Forms:</p> <p>Total advance payment shall be Fifteen percent (15%) of the Accepted Contract Amount less Provisional Sums and shall be payable in the currencies and proportion in which the Accepted Contract Amount is payable.</p> <p>14.2(a): Repayment of the advance payment shall start after certification of Twenty percent (20%) of the Accepted Contract Amount.</p> <p>14.2(b): Amortization rate shall be Twenty percent (25%). Advance payment shall be recovered in full prior to the time when Eighty percent (80%) of the Accepted Contract Amount has been certified for payment.</p> <p>14.3(c): Application for Interim Payment Certificates: Amount to be retained shall be Ten percent (10%) of Interim Payment Certificates.</p> <p>14.3(c): Limit of retention money shall be Ten percent (10%) of the Contract Price.</p> <p>As terms of payment is not clear. Please provide the break-up of the Terms of payment for Design, Supply of Equipment, Installation & Civil Works. Please also specify the term "Provisional Sums "</p>	<p>As terms of payment is very clear and please Clause 14 of the GCC as supplemented by the PCCs and Appendices. Carefully.</p> <p>By Section I. Instructions to Bidders ITB General (kk), "Provisional Sums" means an amount (if any) which is specified in the Bid as a provisional estimate in cases in which the full extent or nature of the work is not yet known for the proposed execution of any part of the Works or for the supply of plant, materials or services as may be instructed by the Engineer under GCC Sub-Clause 13.5.</p>

SI	Ref	Question	Answer
59	Payment Procedure: Clause No.14.2	Clause No.14.2, Advance Payment, Appendix to Letter of Financial Offer, Section-IV, Technical and Financial Offer Bid Forms: Please clarify that materials & equipment payment shall be through Letter of Credit Payment or Bank transfer.	All Payments under the contract shall be through Bank transfers. Letter of Credit Payment method SHALL NOT be used.
60	Volume IIA Employer's Technical Requirement	Clause 1.1.2, Summary of work, Sl.No.1, All the permits, temporary and permanent site access roads and site preparation work. Please clarify that " All the permits, temporary and permanent site access roads and site preparation work " will be in the scope of Client or bidder.	"All the permits, temporary and permanent site access roads and site preparation work" shall be in the scope of the Contractor. Meantime, MiDA will acquire the following permits prior to the commencement of the Project: 1. Building Permits 2. Ghana Highway Authority Permit 3. EPA Permit 4. Fire Permit 5. Permits from the Urban Roads (where required), and 6. Permit from Energy Commission
61	Relay Details for Remote End Substations	Please confirm the Model number of relay (Both ABB & Siemens) used at Remote End Substations (Aboadze & Volta) so that same or matching make can we offered.	Relay models are as follows: - ABB REL 670; - Siemens Siprotec 7SA611 for 21 and Siprotec 7SJ62 for 67N.
62	330kV & 34.5kV Bus Bar & Equipment Connections	Please confirm the type of conductor (Rigid/Flexible) for Bus bar & equipment connections for 330 kV side and 34.5 kV side. As there is no specification available in the tender documents.	Rigid and flexible aerial conductors are used on the 330 kV side as shown in the conceptual drawings DWG#PMC-5091019-BSP-301 and associated drawings. 34.5 kV side will be through underground power cables.
63	Equipment's Structure	As per price schedule, For Equipment's Structure not considered as line item, kindly confirm the scope.	Equipment shall be supplied with complete steel structures and accessories.
64	Auto Transformer	Please clarify, LV Voltage of Auto transformer is 34.5 kV or 33kV. As it is connected to 33 kV equipment's for 33/11kV Substation.	Confirmed; LV Voltage of Auto transformer is 34.5 kV. This will be interconnected to the 33kV side of the 33/11kV Substation. Please note that as per Technical Data Schedules, the maximum ratings of both the 34.5kV and 33kV equipment is the same.

SI	Ref	Question	Answer
65	Out-door Lighting	Please confirm the scope of lighting for access road side lightning from entrance point of Substation. Also provide the lux level.	The scope includes the lighting at entrance point of substation which shall also cover the access road. The lux level shall be as per Clause 2.31.3 – Switchyard Lighting of Vol. IIC – BSP-ECG Technical Specifications.
66	Battery & Battery Charger	As per tender specifications, we have considered Lead Acid batteries 2nos, 400Ah, 125 Vdc & 2 nos, 400Ah, 48Vdc with Float cum Boost charger (1 no for each battery) for 330/34.4kV Substation. And 1 No. 200AH, 110Vdc Lead Acid battery with 1 No. Float cum boost charger for 33/11kV Substation, Please confirm.	This confirmed for GRIDCo side of the substation. Batteries on the ECG side shall be Nickel – Cadmium (NiCad) pasted plate, vented Alkaline type. The Capacity shall be as Contactors detailed engineering design and calculation which shall be subject to approval by the Engineer.
67	HF Cable for Telecommunications	Please specify the type, size & quantity of HF Cable/ Coaxial Cable for telecommunication equipment. Kindly provide specifications.	Contractor shall determine the length of Coaxial cable. Refer to Clause 5.2.3, Item xiv of Volume IIB: The size and specifications of Coaxial Cable shall be as specified under Clauses 7.4 & 7.6.2 of Volume IIB and Item 55 of Volume IIE.
68	Earthing System	Fault Current for 330kV Side, 33kV Side and 11kV Side seems to be higher side (i.e. 50kA for 3 seconds, 40kA for 3 seconds and 25kA for 3 seconds), Kindly review the same and confirm.	These values were determined through calculation and are confirmed to be true.
69	Earthing Conductor	Please confirm conductor for main earth mat is copper clad steel wire with 40% conductivity or 30% conductivity as per IEEE table No.1. OR Bare copper conductor.	Use Bare copper conductor.
70	Lightning Protection	As per specification, Rod type protection is asked for lightning protection which is commonly used for building protection. Kindly clarify whether we have to provide the same or we can offer lightning protection using Lightning Mast and Earth wire.	Earth wire are not allowed. Lightning rod, mast shall be used without reducing safety and maintenance clearances.
71	Solar Power System	Please clarify the area of installation of PV arrays (i.e. main GRIDCo control room building, ECG control room building and Guard room.	The PV arrays shall be installed at the roof of the Main GRIDCo Control Room Building.

SI	Ref	Question	Answer
72	Indoor & Outdoor Lighting	Please inform us the wattage rating of outdoor (250W HPSV or 2x400W HPSV) and indoor lighting (36 W or 18 W CFL) fixtures.	High Pressure Sodium Vacuum (HPSV) light fittings shall NOT be accepted for the project. The entire switchyards shall have automated LED switchyard lighting systems meeting the specifications. Use LED for indoor lighting. Wattages shall be calculated by the contractor in detailed design.
73	Cable Tray	Please specify the size of cable trays.	The contractor shall provide cable trays adequate to meet the needs of the cables in the project with at least 20% spare capacity of space.
74	Telecommunication Equipment	Understand that 330kV transmission line is with OPGW, so kindly clarify that wave trap with PLCC equipment is required or Telecommunication with FOX 615? Please also specify the quantity of OPGW in meter or Km.	Both wave trap with PLCC equipment and Telecommunication with FOX 615 are required. OPGW telecommunication equipped with FOX 615 will be required for each of the 2 segments of OPGW, i.e. Pokuase-Aboadze and Pokuase- Volta (Tema). These 2 OPGW segments shall be equipped with new FOX 615 at Pokuase and the existing FOX 615 at Aboadze and Volta shall be upgraded. Refer to Clauses 5.2.1 AND 5.2.2 of Volume IIB and Drawing No. PMC-5091019-BSP-120 PLCC equipment will also be required at Pokuase for Pokuase –Aboadze and Pokuase-Volta line segments. Refer to Clause 5.2.3 of Volume IIB and Drawing No. PMC-5091019-BSP-120 Lengths of OPGW after line-in-line-out at Pokuase will be: 1. Pokuase- Volta = 40 km approx. 2. Pokuase – Aboadze = 190 km approx
75	Lighting Protection	Kindly clarify that for lighting protection GS earth wire is required or lighting mast. Also specify the size of earth wire.	Please conform to the specifications. As per specification, Rod type protection is asked for lightning protection.
76	Diesel Generator: Clause No. 15.1 & 15.4	As per technical specifications, there are 200-300-500kVA Diesel Generator Set ratings required. Kindly confirm these are three (3) sets of Diesel Generator with individual AMF panel or One (1) set of 500kVA DG set with AMF panel.	200 – 300 – 500 kVA specifies the selection ranges of the auto change over. The actual size of the Generator shall be determined by the contractor based on the calculated load of the station. The diesel generator set sizing calculations shall be provided and shall be to approval of the Engineer.

SI	Ref	Question	Answer																				
77	1.3.1 1.3.2 1.3.3	<p>1.3.1 Package 1A: 330/34.5kV GRIDCO Substation</p> <p>1.3.2 Package 1B: 33/11kV ECG Substation</p> <p>1.3.3 Package 2: Construction of 33kV and 11kV Interconnection Lines (Not part of this contract)</p> <p>Please confirm whether it is complete construction of 330kV substation, as we are unable to locate BOQ in tender document.</p>	<p>Yes, this is confirmed as per scope provided in Vol. IIA. The Schedule of Prices has been uploaded on MiDA Website in an Excel spreadsheet; please follow the Link provided below to download</p> <p>https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o</p>																				
78	Price Schedule	<p>We didn't find the price schedule in the file "5140400 - Supply and Installation of Pokuase BSP Final IFB (Issued 060718).docx".</p> <p>In the contents, it's mentioned "breakdown of rates and prices schedule" but there is nothing in the document. Please find bellow a screen shot showing the contents :</p> <p>B. FINANCIAL OFFER FORMS</p> <table border="0"> <tr> <td>19. Letter of Financial Offer</td> <td>100</td> </tr> <tr> <td>20. Appendix to Letter of Financial Offer</td> <td>103</td> </tr> <tr> <td>21. Form of Bid Security (Bank Guarantee)</td> <td>108</td> </tr> <tr> <td>22. TECH-5: Cash Flow Projection</td> <td>Error! Bookmark not defined.</td> </tr> <tr> <td>23. Breakdown of Rates and Prices Schedule No. 1. Design Services</td> <td>111</td> </tr> <tr> <td>24. Breakdown of Rates and Prices Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Abroad</td> <td>Error! Bookmark not defined.</td> </tr> <tr> <td>25. Breakdown of Rates and Prices Schedule No. 3. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</td> <td>Error! Bookmark not defined.</td> </tr> <tr> <td>26. Breakdown of Rates and Prices Schedule No. 4. Installation and Other Services</td> <td>Error! Bookmark not defined.</td> </tr> <tr> <td>27. Breakdown of Rates and Prices Schedule No. 5. Grand Summary</td> <td>Error! Bookmark not defined.</td> </tr> <tr> <td>28. Breakdown of Rates and Prices Schedule No. 6. Recommended Spare Parts</td> <td>Error! Bookmark not defined.</td> </tr> </table>	19. Letter of Financial Offer	100	20. Appendix to Letter of Financial Offer	103	21. Form of Bid Security (Bank Guarantee)	108	22. TECH-5: Cash Flow Projection	Error! Bookmark not defined.	23. Breakdown of Rates and Prices Schedule No. 1. Design Services	111	24. Breakdown of Rates and Prices Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Abroad	Error! Bookmark not defined.	25. Breakdown of Rates and Prices Schedule No. 3. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country	Error! Bookmark not defined.	26. Breakdown of Rates and Prices Schedule No. 4. Installation and Other Services	Error! Bookmark not defined.	27. Breakdown of Rates and Prices Schedule No. 5. Grand Summary	Error! Bookmark not defined.	28. Breakdown of Rates and Prices Schedule No. 6. Recommended Spare Parts	Error! Bookmark not defined.	<p>Page has been corrected taking out "Error Benchmark not defined"</p>
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79	Qualification Criteria	<p>Our Organization is an ISO certified organization active in sub-Saharan Africa for last 15 years and in the field of construction of AIS substation up to 330kV, distribution substation & lines. We have been working in Nigeria, Ghana, Liberia, Tanzania & various other countries. We are very much interested as working with MIDA for upcoming 330kV substation project and MIDA has very kindly provided the tender documents which we have gone through. We note that the qualification criteria as mentioned in the tender documents will filter out many incapable</p>	<p>Kindly comply with all requirements of the qualification criteria.</p>																				

SI	Ref	Question	Answer
		<p>companies but at the same time it seems to be very strict as compared with the scope of work and may limit the competition and keep African companies out of this process e.g.</p> <ol style="list-style-type: none"> 1. Normally EPC companies have In-house design and engineering support set up, but they do not perform consultancy/engineering function separately. As most of the places consultant are not allowed to compete in EPC contract and vice versa. Hence it is difficult to meet both design & construction experiences. 2. In Sub Saharan Africa, the project values are in the range of US\$ 12-18 Million for last many years. Hence while companies may have experience of more than desired no. of substation, the value of contract may not meet the criteria. We request that financial value of contract criteria may be kindly downward. 3. As per scope of work the 330kV line is to be broken (turn in – turn out) for the substation. In view of this, line turn in – turn out criteria may be Kindly put in place of construction of line experience. 	
80	EPC Price	<p>We understood this project include Package 1A [330/33 kV GRIDCo substation] and Package 1B [33/11 kV ECG substation] under a single responsibility contract. We would like to know estimated EPC price and qualification condition for Pokuase BSP Project [5140400/IFB/CB/07/18] attached.</p>	<p>The estimated EPC price is not available. The Bidder is requested to quote in line with the Schedule of Prices and as per his detailed engineering design. The Qualification condition is as specified under Section III: Bid Review, Evaluation Criteria, and Bidder Qualification Requirements</p>
81	Banking Details	<p>May I kindly have the banking details for MiDA, this is required by the bank issuing the bid security. Can you also send me the MiDA company registration number?</p>	<p>Volume 1 Section IV Technical and Financial Offer Bid Forms - Form of Bid Security (Bank Guarantee) provided in the IFB does not require banking details and company registration number of MiDA.</p>
82	3.5 Experience-Construction in ITB document	<p>3.5.2 Similar experience requests that the bidder must have participation in at least six contracts in the last ten years, and each contract should be with a value of more than twenty-five million united states dollars.</p>	<p>Your participation in any given situation as a contractor, management contractor or subcontractor must be in at least Six (6) contracts within the last Ten (10) years and in each situation the minimum required share must be a value of Twenty Five Million United States Dollars</p>

SI	Ref	Question	Answer
		Can you please clarify that the minimum amount (\$25 million) required should be the same amount the bidder contracted, or the project amount the bidder involved in?	(US\$25,000,000.00) with evidence of successful and substantial completion
83	3.5 Experience-Construction in ITB document	3.4.3 Specific Experience in Key Activities requires that the bidder shall have a minimum experience with Three air insulated substations in a developing country out of the total six substations. Can you please clarify that whether People's Republic of China is a developing country under MiDA's perspective or not?	The list of developing countries adhered to by the International Statistical Institute (ISI), effective from 1 January until 31 December 2018 lists the Republic of China as a developing country. Check link below: http://data.worldbank.org/indicator/NY.GNP.PCAP.CD
84	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Isolator Earth switch Isolator Earth switch motorized or manual operated. Kindly confirm	Motorized with option of manual operation.
85	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Distance of Control room building Kindly provide the distance from Control room building to switchyard	Please refer to drawings PMC-5091019-BSP- 103: Equipment Layout (Plan) and PMC-5091019-BSP- 103A: Equipment Layout (Plan) Complete for layout where indicative measurements can be made. Contractor will get accurate distances from his detailed Engineering designs.
86	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Equipment interconnection 330 & 34.5kV Equipment interconnection are through AL tube or Twin conductor or Single conductor. Please confirm	The Busbar type is Rigid Busbar; all connections and accessories should consistent with this technology.
87	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Equipment Bus Height Kindly confirmed the Height of 330 & 34.5kV Equipment interconnection	Clearances shall be as per Table 1: System Design Parameters of Volume IIB: GRIDCo Specifications

SI	Ref	Question	Answer
88	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Jack Bus Kindly confirmed the Height of Jack Bus 330 & 34.5kV.	Clearances shall be as per Table 2: System Design Parameters of Volume IIB: GRIDCo Specifications
89	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Main Bus Kindly confirmed the Height of Main Bus 330 & 34.5kV.	Clearances shall be as per Table 3: System Design Parameters of Volume IIB: GRIDCo Specifications
90	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Insulator type Kindly confirmed the type of insulator 330 & 34.5kV.	Refer to Volume IIB: - BSP GRIDCo Technical Specifications for full specification of the insulators of the various equipment.
91	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Creepage Kindly confirmed the creepage 25mm/kV or 31mm/kV for proposed substation.	The creepage distance shall be 31mm/kV .
92	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Fault current As per Tender SLD We are considering Fault current for Following: a) 330kV - 50kA for 3 sec. b) 34.5kV - 31.5kA for 3 sec.	Please considering Fault current for Following: a) 330kV - 50kA for 3 sec. b) 34.5kV - 50kA for 3 sec. These values are confirmed through calculations.
93	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Scope of Illumination Illumination required in present scope of work only. We are not considered for future area. Kindly confirm	Confirmed. Substation lighting shall be provided for current scope of the substation.

SI	Ref	Question	Answer
94	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	LED type Fixture (Indoor & Outdoor) We are considering All the fixture LED type indoor & outdoor side.	Correct, LED type Fixtures (Indoor & Outdoor) meeting the specifications provided are the preferred type.
95	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Plot size Kindly confirm the area/size of proposed switchyard.	See page 27 of Appendix F – Topographic Survey Report
96	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Location of LT Switchgear Kindly confirmed the location of LT switchgear room.	Please refer to drawings PMC-5091019-BSP- 103: Equipment Layout (Plan) and PMC-5091019-BSP- 103A: Equipment Layout (Plan) Complete locations of equipment.
97	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Location of Control Relay panel (330 & 34.5kV) 330 & 34.5kV Control relay panel are placed in Ground floor (Control room building) as per tender drawing. Please confirm	Confirmed
98	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Earth switch As per price schedule Earth switch is not required for Main Bus 1 & 2. please confirm	Confirmed
99	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Price schedule 2A.25.1 As per price schedule 330kV LA shall be supply instead of 132kV LA. Please confirm	Please provide Surge Arresters meeting the Employer's requirements, including Item 5.0 TDS-BSP-0 05: Surge Arrester in Volume IIE: Technical Data Schedules
100	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Auxiliary Earth mat Auxiliary earth mat is required for Isolator MOM or not. Please confirm	It is required.

SI	Ref	Question	Answer
101	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	HV Cable laying 34.5kV Cable laid through Cable Trench or Buried. Please confirm	34.5kV Cable shall be directly buried.
102	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Line side String hardware We are considered supply of Line side string hardware not in present scope of work. Please confirm	This is a design and build contract. The contractor shall provide all services, plant, equipment and accessories to deliver fully functional substation and interconnection.
103	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Conductor We are considering ACSR Moose Conductor. Please confirm	Conductor to the 330kV turn-in lines shall be ACSR Tern conductor. The busbars shall be Rigid Aluminium busbars.
104	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Switchyard panel Room There is no concept of Switchyard panel room (AC Kiosk/SPR). Please Confirm.	The Contractor shall provide in detailed design.
105	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Line Trap Kindly confirm the rating of 330kV Line trap.	The current rating of the Line Trap shall be 2500amps while other parameters shall in accordance with the specifications.
106	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	DC Voltage We considered the DC voltage is 125V as per Price schedule.	Confirmed
107	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control & Power Cable Control & Power cable are armoured or unarmoured. Please confirm	Control & Power Cable shall be armoured.

SI	Ref	Question	Answer
108	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Lightning protection Lightning protection shall be through Shield wire or LM. Please confirm	Please conform to the specifications. As per specification, Rod type protection is asked for lightning protection.
109	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Firefighting protection As per price schedule Firefighting protection system (HVW Spray system/NIFPS/Hydrant system) is not required for Power Transformer & Control room Building. Please confirm the requirement	Confirmed; an adequate number of fire extinguishers strategically located shall be the requirement
120	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Battery & Charger Kindly provide the requirement of Battery & Charger Capacity for proposed Switchyard (including future bay also).	GRIDCo side, consider: (1) Lead Acid batteries. (2) 2nos x 400Ah for 125 Vdc; (3) 2 nos x 400Ah for 48Vdc.
121	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Outdoor Cable Tray We are not considered Cable tray for outdoor switchyard area. Please confirm the requirement	Use cable trench with Cable tray as per Employer's requirements
122	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Cantilever strength of BPI We are considering cantilever strength of BPI for 330kV, 8kN & 34.5kV, 4kN. Please confirm	The cantilever strength of all insulators shall be designed to be able to operate effectively in the service conditions as specified in Volume IIA: BSP Scope Requirements.
123	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Pre-insertion Resister (PIR) We are considering 330kV Circuit Breaker with PIR for Line & Circuit breaker without PIR for Transformer bay. Please confirm our understanding	Refer to Volume IIB Section 3.0 and all other documents for detailed requirements of Circuit Breakers.
124	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Controlled Switching Device (CSD) We are considering Controlled switching device for PIR for Transformer bay. Please confirmed our understanding	Please provide the Bay Control Units that meet the Employer's requirements as specified in Volume IIB: BSP GRIDCo Tech Spec (Package 1A) and Volume IIC: BSP ECG Tech Spec (Package 1B)

SI	Ref	Question	Answer
125	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	330kV side Bus Work We are considering 330kV Bus work As per "Equipment layout plan (Phase-1), Drwg No.: PMC-5091019-BSP-103". Please confirm our understanding	Confirmed for bidding stage. However, the contractor shall provide the detailed design for approval of Engineer.
126	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Transformer losses Kindly provide the losses of Power Transformer & Auxiliary Transformer	Refer to the following Sections for Transformer losses: Section 2.7 of Volume IIB: BSP GRIDCo Tech Spec (Package 1A) for GRIDCo Transformers and Section 2.3.3.14 of Volume IIC: BSP ECG Tech Spec (Package 1B)
127	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Lightning Protection for Future bay We are not considering the Lightning protection of future bay equipment. Please confirm our understanding.	Confirmed; no need to consider the Lightning protection of future bay equipment
128	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	On line DGA for 330/34.5Kv We are not considered the On line DGA for 330/34.5kV Power Transformer. Kindly confirm our understanding	Please provide the On line DGA for 330/34.5kV Power Transformer. The On line DGA should meet all the Employer's requirements
129	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Digital RTCC for 330/34.5kV WE are not considered the Digital RTCC for 330/34.5kV Power Transformer. Kindly confirm our under standing	It is mandatory to provide a RTCC that meet all the requirements specified in Volume IIB: BSP GRIDCo Tech Spec (Package 1A).
130	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand centralized, differential bus bar protection as main-I & Main-II is required to be considered.	Control and Relay panels should meet all the requirements of being electrically and mechanically separated as requested in Volume IIB: BSP GRIDCo Tech Spec (Package 1A)
131	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand that differential and overcurrent protection is required for transformer bay protection, REF not required, Kindly confirm.	All the protection as listed in Table 17: Summary of Protection Systems and the relevent sections in Volume IIB: BSP GRIDCo Tech Spec (Package 1A), including REF shall be provided.

SI	Ref	Question	Answer
132	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand distance protection is required as Main-I & Main-II for line bay protection. Please confirm.	All the protection as listed in Table 17: Summary of Protection Systems and the relevant sections in Volume IIB: BSP GRIDCo Tech Spec (Package 1A) shall be provided.
133	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand energy meters and multifunction meters both are required in all line & transformer bays. Please confirm.	Confirmed
134	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand required centralized low impedance differential bus bar protection shall be suitable for six transformer, six line & six tie bays. Please confirm.	All the protection as listed in Table 17: Summary of Protection Systems and the relevant sections in Volume IIB: BSP GRIDCo Tech Spec (Package 1A) shall be provided.
135	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We are considering AVR as a part of transformer package, relay mounting will be considered in AVR panel itself. Please confirm.	An AVR, mounted in the RTCC shall be provided as required by the specifications.
136	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Control Relay protection We understand that all relays are numerical and. Please confirm	Modern and numeric protection 61850 compliant relays shall be provided as required by the specifications.
137	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Substation automation system Please confirm the data transmission protocol 101/104.	The data transmission protocol shall be IEC60870-5-101 and IEC60870-5-104 See Volume IIB, Clause 1.13.
138	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Substation automation system We are considering one (1 No.) ethernet switch for one (1 No.) 330kV bay. Please confirm	Confirmed. One (1 No.) ethernet switch for one (1 No.) 330kV bay acceptable

SI	Ref	Question	Answer
139	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Substation automation system We are considering separate standalone Disturbance recorder & station alarm/watchdog alarm panel. Please confirm.	This will be acceptable provided it meets all the requirements specified in Section 4.14 of Volume IIB: BSP GRIDCo Technical Specifications.
140	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Substation automation system We are considering one (1 No.) ethernet switch for two (2 Nos.) 34.5kV bay.	One (1 No.) ethernet switch for one (1 No.) 34.5kV bay acceptable
141	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We understand digital PLCC and FOTE both are required. Please confirm.	Confirmed. Digital PLCC and FOTE are required
142	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We are considering Digital PLCC & FOTE for present scope bays only. Please confirm.	Confirmed. Digital PLCC and FOTE are for present scope bays only
143	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We are not envisaging junction box at tap up gantry tower for OPGW termination and FO cable splicing is also considered as exclusion (generally its part of Transmission line vendor/contractor scope). Please confirm.	Junction box at gantry tower for OPGW termination and FO splicing is part of the Contractor's scope. Refer to Clause 16.1.2.2 Extent of Work of Volume IIB. Please also note that the Transmission line work is part of the Contractor's Scope.
144	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We are considering GRIDCO mapping and integration for present scope bays. For this please furnish existing system make and model details. Please confirm.	Since this is a new substation, there is no existing system.
145	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We understand that necessary ports/physical devices/gateways are suitable for scope station bays integration/mapping. Please confirm.	Please refer to Section 6 of Volume IIB; GRIDCo Specification for the full details of technical requirements for the SAS.

SI	Ref	Question	Answer
146	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Telecom system We understand the existing system and hook-up points in GRIDCO/adjacent substations are healthy for data transmission for scope bays. Please confirm.	Confirmed. Existing system and hook-up points in GRIDCO/adjacent substations are healthy for data transmission for scope bays.
147	330/34.5kV "POKUASE BULK SUPPLY POINT SUBSTATION" Substation	Make & Model of CRP/SAS/Telecom/DR system Please confirm the make and model details of CRP/SAS/Telecom/DR system at GRIDCO (Dispatch centre).	The equipment at the System Control Centre (SCC) at Tema is ABB Network Manager System (NMS)
148	33/11kV "POKUASE BSP ECG SIDE" Substation	Distance of Control room building Kindly provide the distance from Control room building to switchyard.	Please refer to drawings PMC-5091019-BSP- 202: Equipment Layout (Plan) for layout where indicative measurements can be made. Contractor will get accurate distances from his detailed Engineering designs
149	33/11kV "POKUASE BSP ECG SIDE" Substation	Equipment Bus Height Kindly confirmed the Height of 330 & 34.5kV Equipment interconnection	The Height and Clearances shall be as per Table 4: System Design Parameters of Volume IIB: GRIDCo Specifications
150	33/11kV "POKUASE BSP ECG SIDE" Substation	Creepage Kindly confirmed the creepage 25mm/kV or 31mm/kV for proposed substation.	The creepage distance to be used is 31mm/kV
151	33/11kV "POKUASE BSP ECG SIDE" Substation	Fault current As per Tender SLD We are considering Fault current for Following: a) 33kV - 31.5kA for 3 sec. b) 11kV - 25kA for 3 sec.	The Fault currents shall be as follows: a) 33kV - 50kA for 3 sec. b) 11kV – 31.5kA for 3 sec.
152	33/11kV "POKUASE BSP ECG SIDE" Substation	Scope of Illumination Illumination required in present scope of work only. We are not considered for future area. Kindly confirm	Please provide lighting for the current switchyards but all roadways should be illuminated.
153	33/11kV "POKUASE BSP ECG SIDE" Substation	LED type Fixture (Indoor & Outdoor) We are considering All the fixture LED type indoor & outdoor side.	Correct, LED type Fixtures (Indoor & Outdoor) meeting the specifications provided are the preferred type.

SI	Ref	Question	Answer
154	33/11kV "POKUASE BSP ECG SIDE" Substation	Location of LT Switchgear Kindly confirmed the location of LT switchgear room.	Please refer to drawings PMC-5091019-BSP- 202: Equipment Layout (Plan) for layout where indicative measurements can be made. Contractor will get accurate distances from his detailed Engineering designs
155	33/11kV "POKUASE BSP ECG SIDE" Substation	Technical Specification Kindly provide the Volume IIC (Tech. spec.)	Please download from MiDA Google Drive shared link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
156	33/11kV "POKUASE BSP ECG SIDE" Substation	HV Cable laying 33 & 11kV Cable laid through Cable Trench or Buried. Please confirm	33 & 11kV Cables shall be directly buried.
157	33/11kV "POKUASE BSP ECG SIDE" Substation	DC Voltage We considered the DC voltage is 110V as per Price schedule. Please confirm	Confirmed; however, the battery system should meet all the operational ranges as per employer's requirements
158	33/11kV "POKUASE BSP ECG SIDE" Substation	Control & Power Cable Control & Power cable are armoured or unarmoured. Please confirm	Confirmed, the cables shall be armoured
159	33/11kV "POKUASE BSP ECG SIDE" Substation	Lightning protection Lightning protection of 33/11kV switchyard considered through LM. Please confirm	Please conform to the specifications. As per specification, Rod type protection is asked for lightning protection.
160	33/11kV "POKUASE BSP ECG SIDE" Substation	Firefighting protection As per price schedule Firefighting protection system (HVW Spray system/NIFPS/Hydrant system) is not	Confirmed; an adequate number of fire extinguishers strategically located shall be the requirement

SI	Ref	Question	Answer
		required for 33/11kV side Power Transformer & Control room Building. Please confirm the requirement	
161	33/11kV "POKUASE BSP ECG SIDE" Substation	Battery & Charger Kindly provide the requirement of Battery & Charger Capacity for proposed Switchyard (including future bay also).	For the ECG side, consider: (1) Nickel – Cadmium (NiCad) pasted plate, vented Alkaline type. (2) Contactor to determine the Amp-Hour capacity as per detailed engineering design and calculations, (3) The calculations shall be subject to approval by the Engineer.
162	33/11kV "POKUASE BSP ECG SIDE" Substation	Outdoor Cable Tray We are not considered Cable tray for outdoor switchyard area. Please confirm the requirement	Use cable trench with Cable tray as per Employer's requirements
163	33/11kV "POKUASE BSP ECG SIDE" Substation	Transformer losses Kindly provide the losses of Power Transformer & Auxiliary Transformer	Refer to the following Sections for Transformer losses: Section 2.3.3.14 of Volume IIC: BSP ECG Tech Spec (Package 1B)
164	33/11kV "POKUASE BSP ECG SIDE" Substation	Spare Equipment Spare equipment shall be supply with Terminal connector or without terminal connectors.	Please clarify what spare equipment.
165	33/11kV "POKUASE BSP ECG SIDE" Substation	Substation automation system We are considering one (1 No.) ethernet switch for two (2 Nos.) 33kV bay.	One (1 No.) ethernet switch for one (1 No.) 33kV bay shall be acceptable

SI	Ref	Question	Answer
166	33/11kV "POKUASE BSP ECG SIDE" Substation	<p>Telecom system</p> <p>We understand that 33/11kV station i.e. "<u>POKUASE BSP ECG SIDE</u>" will be having new separate SAS system, which will report to "<u>POKUASE BULK SUPPLY POINT SUBSTATION</u>", further data from this substation will be transferred to GRIDCO through Adjacent/Nearest/ Available hook-up point as per ECG network.</p>	<p>The 33/11 kV Station (Pokuase BSP ECG Side) will have a new separate SAS will report to the existing ECG Control Centre at Makola via IEC 60870-5-104/101 protocol. It will not report to GRIDCo Control centre.</p> <p>Refer to Clause 2.17 Supervisory Control and Data Acquisition (SCADA) of Volume IIC and Drawing No. PMC-5091019-BSP-213B, PROPOSED ACCRA FIBER BACKBONE BLOCK DIAGRAM SHOWING POKUASE CONNECTION TO SCADA</p>
167	33/11kV "POKUASE BSP ECG SIDE" Substation	<p>Telecom system</p> <p>We are not envisaging telecom equipment in "<u>POKUASE BSP ECG SIDE</u>" substation. SAS data will be transferred to "<u>POKUASE BULK SUPPLY POINT SUBSTATION</u>" through Optical Cable.</p>	<p>Telecom equipment WILL be required for POKUASE BSP ECG SIDE. ECG and GRIDCo are two (2) separate and independent telecommunications and SCADA systems, hence ECG side will not report and communicate to GRIDCo side.</p> <p>Refer to Clause 2.16 Supervisory Control and Data Acquisition (SCADA) of Volume IIC and Drawing Nos. PMC-5091019-BSP-212, SAS NETWORK DESIGN CONCEPTUAL DIAGRAM and PMC-5091019-BSP-213B, PROPOSED ACCRA FIBER BACKBONE BLOCK DIAGRAM SHOWING POKUASE CONNECTION TO SCADA.</p>
168	33/11kV "POKUASE BSP ECG SIDE" Substation	<p>"POKUASE BSP ECG SIDE" Price schedule 2B.7.2 Kindly provide the existing details of ECG substation.</p>	<p>The substation is a greenfield substation.</p>
169	For 330KV Substation	<p>For 330KV Substation: Clause No. 12.1, Price Schedule, Specialised maintenance tools for circuit breakers. Please specify the Quantity & list of tools required for Specialised maintenance tools for circuit breakers. Please also provide the specifications.</p>	<p>A price schedule showing quantities and list of tools has been uploaded on MiDA website. Please download a copy of the file.</p> <p>The specification of the equipment are given in the Employer's requirements.</p>

SI	Ref	Question	Answer
170	For 330KV Substation	Clause No. 12.2, Price Schedule, Specialised test equipment for circuit breakers. Please specify the Quantity & list of test equipment required for Specialised test equipment for circuit breakers. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
171	For 330KV Substation	Clause No. 12.4, Price Schedule, Earth resistance testing set. Please specify the Quantity for Earth resistance testing set. Please also provide the specifications	A price schedule showing quantities and list of tools has been uploaded on MiDA website. Please download a copy of the file. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
172	For 330KV Substation	Clause No. 12.5, Price Schedule, HV insulation resistance tester. Please specify the Quantity for HV Insulation resistance tester. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. Please download a copy of the file. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
173	For 330KV Substation	Clause No. 12.6, Price Schedule, Digital low resistance ohm meter for measuring transformer resistance. Please specify the Quantity for Digital low resistance ohm meter for measuring transformer resistance. Please also provide the Specifications	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o

SI	Ref	Question	Answer
174	For 330KV Substation	Clause No. 12.7, Price Schedule, Single phase TTR test set. Megger type 55005 or approved Please specify the Quantity for Single phase TTR test set. Megger type 55005. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. Please download a copy of the file. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
175	For 330KV Substation	Clause No. 12.8, Price Schedule, Leakage current analyzer for surge arrester testing. Please specify the Quantity for Leakage current analyzer for surge arrester testing. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
176	For 330KV Substation: Price Schedule	Clause No. 12.9, Price Schedule, Omicron Tan Delta test set compatible with Omicron CPC 100. Please specify the Quantity for Omicron Tan Delta test set compatible with Omicron CPC 100. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
177	For 330KV Substation: Price Schedule	Clause No. 12.10, Price Schedule, Omicron CMC 356, option ELT-1 (Enerlyzer and Transducer hardware option as specified). Please specify the Quantity for Omicron CMC 356, option ELT-1 (Enerlyzer and Transducer hardware option as specified). Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o

SI	Ref	Question	Answer
178	For 330KV Substation: Clause No. 12.1, Price Schedule	Clause No. 12.1, Price Schedule, Specialised maintenance tools for switchgears. Please specify the Quantity & list of tools required for Specialised maintenance tools for switchgears. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
179	For 330KV Substation: Price Schedule	Clause No. 12.2, Price Schedule, Specialised test equipment for GIS Switchgear. Please specify the Quantity & list of test equipment required for Specialised test equipment for GIS Switchgear. Please also provide the specifications.	A specialised test equipment for GIS switchgear is not required.
180	For 330KV Substation: Price Schedule	Clause No. 12.4, Price Schedule, Earth resistance testing set. Please specify the Quantity for Earth resistance testing set. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
181	For 330KV Substation: Price Schedule	Clause No. 12.5, Price Schedule, HV insulation resistance tester Please specify the Quantity for HV insulation resistance tester. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o

SI	Ref	Question	Answer
182	For 330KV Substation: Price Schedule	Clause No. 12.6, Price Schedule, Digital low resistance ohm meter for measuring transformer resistance Please specify the Quantity for Digital low resistance ohm meter for measuring transformer resistance. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv o7urwujRADwuPA6o
183	For 330KV Substation	Clause No. 12.7, Price Schedule, Single phase TTR test set. Megger type 55005 or approved. Please specify the Quantity for Single phase TTR test set. Megger type 55005. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv o7urwujRADwuPA6o
184	For 330KV Substation	Clause No. 12.9, Price Schedule, Omicron Tan Delta test set compatible with Omicron CPC 100 Please specify the Quantity for Omicron Tan Delta test set compatible with Omicron CPC 100. Please also provide the specifications.	A price schedule showing quantities and list of tools has been uploaded on MiDA Google Drive shared link. The specification of the equipment are given in the Employer's requirements. Both can downloaded and provided in the link below: https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv o7urwujRADwuPA6o
185	Tender SLD, Tech Spec Vol IIB Cl. 1.8.1 Table 5 Item 6	In Tender Stage SLD for 330 kV GRIDCo Substation Short circuit Level for 34.5 kV System is mentioned as 31.5 kA for 5 S however as per volume II B of Tech Spec the same is mentioned as 50 kA for 3 Sec.	Please use a short circuit current of 50 kA for 3 Sec
186	Tech Spec Vol IIB Cl. 1.8.1 Table 5 Item 10	Creepage distance mentioned for 330 kV (considering the unit is mm) is in lower side. Kindly cross check and confirm.	This creepage distance shall be amended from 1116mm to 11160mm or 31mm/kV

SI	Ref	Question	Answer
187	Tech Spec Vol IIB Cl. 1.11	The OPGW provided in between Volta and Aboadze should have spare cores for SCADA of Pokuase Substation.	Yes; it has spare cores for Pokuase
188	Tech Spec Vol IIB Cl. 10.6.1	As per Spec The substation shall be protected against direct lightning strikes by vertical lightning rods. Can you provide a reference drawing of Lightning Rod? Kindly also Confirm whether protection by Ground / Shield wire is acceptable or not.	Protection by ground/shield wire is not acceptable. Drawing for lightning rod shall be provided by the Contractor during detailed design.
189	Tech Spec Vol IIB Cl. 11.6.3.2	In the Specification for Substation it is mentioned "Minimum Illumination Levels - Indoor-" & "Minimum Illumination Levels - Outdoor". We understand minimum lux level mentioned for different location are the minimum average lux level required for that location. Kindly Confirm.	Yes, confirmed
190	Tech Spec Vol IIB Cl. 11.6.4.3	Kindly Confirm whether the Emergency Light to be provided in the rooms only at each main exit for evacuation of maintenance staff or Emergency Light to be provided throughout the room to maintained minimum level of 10 lux.	Emergency Lights to be provided throughout the room
191	Tech Spec Vol IIB Cl. 11.6.5	We understand that Outdoor Lighting fixtures for switchyard can be mounted on Switchyard Gantry Beam. Kindly confirm.	Confirmed
192	Tech Spec Vol IIB Cl. 11.6.5.1	We understand that only Fence Lighting will have individual Solar Panel and all switchyard fixtures to be conventional normal AC sourced type. Kindly confirm.	Confirmed
193	Tech Spec Vol IIB Cl. 11.7.1	Kindly Confirm what would be Load capacity of Grid tied Solar Power Plant system. From the specification it is not clear whether the Grid tied Solar Power Plant system will provide power to the total auxiliary system or a certain part of that.	These will be mounted on the rooftop of the Control building and the Contractor will provide the output as per his detailed engineering design.
194	Tech Spec Vol IIB Cl. 13.16.11	We understand that the Off-Load Tap Changer for Grounding / Auxiliary Transformer is not mandatory as it is not mentioned in Price Schedule or Scope of Work. Kindly confirm.	The Auxiliary Transformer shall be provided with an Off Load Tap Changer as specified in the Employer's requirements.
195	Tech Spec Vol IIA Cl. 3.2.1 B-h	Kindly confirm the length of Permanent Road Access (From community road to Substation Gate).	It is listed in the Schedule of Prices as 500 meters

SI	Ref	Question	Answer
196	Tech Spec Vol IIA Cl. 3.2.2 C - g	Kindly confirm the length of Access Road (From community road to Substation Gate).	20 meters from the road to the gate. Provide access road for all gates.
197	Price Schedule 2 A 2.3	6 Nos 34.5 kV Bus Disconnecter switches are in Price Schedule however, as per our understanding the quantity should be 4. Kindly confirm.	Please quote for the 6 Nos 34.5 kV Bus Disconnecter switches at this stage
198	General	Air condition and ventilation system is not included in present scope of work under Package 1A. Kindly confirm.	Refer to Clause 3.2.1 for Package 1A in Volume IIA, Employer's Technical Requirement. Air condition and ventilation system is specified in Volume IID: General Specification shall be provided.
199	General	Our understanding is that ACSR type conductor to be used for substation part also. Kindly confirm.	ACSR Tern conductor to be used for turn-in lines. Rigid busbar system shall be used for substation and all accessories to go with this technology shall be provided.
200	Tech Spec Vol IIA Cl. 1.3.3 and 3.2.2 B-h	As per our understanding, underground Fibre Optic Cable for Integration of Substation in to ECG communication network is in Package 2, hence not included in Package 1B. Kindly confirm.	Confirmed. However, the scope to provide patch panel from Fibre terminal equipment as well as commissioning of the communication channels is included in Package 1B.
201	General	Kindly confirm whether common (interconnected) earthing Grid to be considered for both GRIDCO & ECG S/Stn and separate Earthing grid for both utility to be considered.	GRIDCO and ECG substations shall have separate earthing grids. However, both shall be interconnected
202	Tech Spec Vol IIC Cl. 2.31.3	LED, HPMV and HPSV lamps are specified for Outdoor Lighting. Kindly confirm whether is it bidder's jurisdiction to select any one out of them as per requirement.	High Pressure Sodium Vacuum (HPSV) light fittings shall NOT be accepted for the project. The entire switchyards shall have automated LED switchyard lighting systems meeting the specifications.
203	Tech Spec Vol IIC Cl. 2.31.3	Lux level mentioned in ECG part is not matching with GRIDCO part. Our understanding is that we have to follow specific requirement for specific package. Kindly confirm.	Confirmed
204	General	Please provide the width of road for GRIDCO site.	Please refer to drawings PMC-5091019-BSP- 103: Equipment Layout (Plan) and PMC-5091019-BSP- 103A: Equipment Layout (Plan) Complete for layout where indicative measurements can be made. Contractor will get accurate distances from his detailed Engineering designs
205	Structure	Please confirm whether equipment support structure is lattice or pipe type.	Lattice is preferred

SI	Ref	Question	Answer
206	Cable Trench	Please provide detail drawing of Typical Cable Trench Sections.	Refer to drawing PMC-5091019-BSP-219
207	Drawing no.PMC-5091019-BSP-240C,	Refer tender drawing no.PMC-5091019-BSP-240C, Rev-2 Title-"Proposed Indoor Substation Design Section A-A, B-B and C-C Pokuase BSP-ECG Site". A Truss type section is indicated below basement floor level. Please provide details of this section.	The truss system in the drawing is a representation of the ground. Reinforced concrete slab shall be used for the basement.
208	General	Please provide cross-sectional details of access road from community road to substation gate. Also provide the approximate length of this road.	This is existing road with no design details available at this stage. Contractor to provide in the detailed design. Contractor to quote as per his detailed engineering design.
209	Price Schedule	In this regard, we would kindly like to ask that you provide the following price schedules mentioned in the IFB in excel formal. <ol style="list-style-type: none"> 1. Schedule No. 1: Design Services 2. Schedule No. 2: Plant, Goods and Equipment (including Mandatory Spare Parts) Supplied from Abroad 3. Schedule No. 3 Plant, Goods and Equipment (including Mandatory Spare Parts) Supplied from within the Employer's Country 4. Schedule No. 4 Installation Services 5. Schedule No. 5 Grand Summary (Schedule Nos. 1 to 4) 6. Schedule No. 6 Recommended Spare Parts 	The Schedule of Prices has been uploaded on MiDA Google Drive shared link in an Excel spreadsheet; please follow the Link provided below to download https://drive.google.com/drive/folders/1jjOkhOfabNPxTNbv07urwujRADwuPA6o
210	Section II. Bid Data Sheet	Additionally, please clarify the following issues regarding the clarification request procedure: <ul style="list-style-type: none"> • Is there any specific form that must be filled in? • Clarifications request must be addressed through email correspondence to mail addresses: procurement@mida.gov.gh and paghana@charleskendall.com? Or is there any other procedure to follow? • Is there any all bidders' clarification response log going to be distributed in regular basis? • How this log will be distributed to bidders? 	All forms are provided in the IFB under Section IV: - Technical and Financial Offer Bid Forms. The timelines are provided in the IFB in the Bid Data sheet. To request clarification of this Bidding Document only, the Employer's address is: Attention: Procurement Agent Street Address: 6 th Avenue Ridge West Floor/Room number: 3 rd Floor, Heritage Tower City: Accra Country: Ghana Telephone: +233-302-666 619/621/634542 Extension 301

SI	Ref	Question	Answer
			Facsimile number: +233-302-666579 Electronic mail address: procurement@mida.gov.gh and paghana@charleskendall.com