CLARIFICATIONS FOR THE SUPPLY AND INSTALLATION OF KASOA BSP - DESIGN-BUILD

BID REFERENCE: 5140400-05/IFB/CB/06/19

SI	Ref	Question	Answer
1	Clause 2.8.2 & 2.8.3	The specification defines the STATCOM MV-BUS voltage to 13.8 kV. Is there some reason why the secondary voltage is fixed, as the more economical secondary voltage would be around 19 kV? Also transformer impedance is defined to 8.5 %. Please give your feedback if secondary voltage & impedance can be freely selected by supplier in order to develop overall competitive solution.	The secondary voltage, impedance & Vector group provided in the Employer's requirements are for guidance only. The Optimal Secondary voltage, impedance & Vector group shall be selected by supplier from a detailed study that shall be subject to review and approval by the Engineer prior to construction activities.
2	Clause 4.9.4	Without proper data of network harmonic impedances and existing harmonics, the calculation of harmonics and TIF is not accurate. Please provide input data.	The harmonics to be used for rating calculation have been provided in Clause 4.9.4. Additional information regarding the network impedances shall be provided to the winning Bidder.
3	Clause 4.9	In chapter STATCOM system characteristics chapter the slope is defined to be 0-10 % on base of 200 MVA. However, in chapter 4.9.1 Control concept the slope is defined to be 0% to 10 % at 100 MVA base. We assume that 100 MVA base is correct, would you please confirm.	0% to 10 % at 100 MVA base shall be used.
4	Section III, 3.8	We would like to highlight that the design and construction of Indoor and outdoor GIS substation are similar in nature including its installation procedures except for GIS building enclosures in the Indoor system.	Experience in BOTH indoor and outdoor GIS shall be considered.

Sl	Ref	Question	Answer
		Moreover, most of the utilities World Wide have indoor GIS substation installed in their system and we ourselves have constructed number of **indoor GIS substations** of Voltage from 66kV upto 400kV for various utilities. Contractors who have executed Indoor GIS Substation are capable enough to do Outdoor GIS due to its similarities. Based on the above, **we request you to accept Indoor GIS Construction Experience of Bidders with a rating of 132kV and above within the last ten (10) years in referred Mandatory Criteria requirement.**	
5	Volume IIB	As per the Technical Schedule TDS-BSP-KAS-GRIDCO-045 of 33kV Outdoor GIS Dead tank CB, the rated current & Short circuit current as 3150A & 40kA for 3sec. Whereas the technical specification indicated that 4000A & 40kA for 1sec. Please confirm the rated current & Short circuit current & duration time.	The rated Current of the CBs is 3150A and the short circuit is 40kA with duration of 3sec
6	Volume IIB	As per the Technical Schedule TDS-BSP-KAS-GRIDCO-008 of 33kV Outdoor GIS Dead tank CB associated Current transformer rated secondary Output (VA) as ≥15VA. Whereas the technical specification indicated as ≥ 20VA that 4000A & 40kA for 1sec. Please confirm the rated burden for 34.5kV Current transformer	33kV Outdoor GIS Dead tank CB associated Current transformer shall have rated secondary Output (VA) of ≥15VA, which shall be confirmed by Contractor through CT Calculations.
7	Volume IIB	As per the Technical Schedule TDS-BSP-KAS-GRIDCO-008 & Technical specification specified as 500kVA rated power. Whereas the mandatory spares indicated as 250kVA Auxiliary transformer. Please confirm the rated power of auxiliary	The 34.5/0.433kV Auxiliary Grounding Transformer in both the TDS and mandatory spares shall be rated 500kVA

Sl	Ref	Question	Answer
		transformers.	
8	Volume IIC	As per Price schedule No.2B, item number 2B.3.1 calls for 200kVA, 33/0.433kV Auxiliary Transformer, Whereas Technical data schedule calls for 100kVA, 33/0.433kV Aux. Transformer. Please confirm of the Power & Voltage & Rating for Auxiliary Transformer.	The 33/0.4 kV Auxiliary Transformer on ECG Side shall be rated 200kVA
9	Volume IIB	Please note that as per technical specification mentioned supply of CYMGRD - Substation Grounding Program software duly licensed to GRIDCo for a minimum of 5 users. Whereas the supply of CYMGRD missing in price schedule 2A- GRIDCo. Hence please confirm requirement of CYMGRID software.	Supply of CYMGRD - Substation Grounding Program software duly licensed to GRIDCo for a minimum of 5 users shall be required and has now been included in an updated Price Schedule that can be downloaded on the following link: http://bit.do/KasoaBSP
10	**Volume IIB**	Provide the Technical specification for Stadpro which is not available.	No Technical specification for STAAD.Pro is required as it is not part of plant and equipment. It is a structural analysis and design software application licensed under Bentley Systems, Incorporated. For more information, visit: https://www.bentley.com/en/products/product-line/structural-analysis-software/staadpro
11	Volume IIC	As per technical specification Sl. 14.7, Page 295 calls for supply of solar PV system under presence scope. Whereas Solar PV system missing in price schedule 2B - ECG Supply. Please confirm the same.	A Solar PV system shall be required on the ECG side. This item has now been included in an updated Price Schedule that can be downloaded on the following link: http://bit.do/KasoaBSP
12	Volume IIC	As per the Technical Schedule 1.0. TDS-BSP-KAS-ECG-001 of 33kV Indoor Switchgear as Metal clad – air insulated, indoor switchgear with Vacuum/SF6 Circuit Breakers. Whereas the technical specification 2.1.3.2 & Price schedule 2B-ECG supply indicated insulation medium shall be GIS with Vacuum/SF6 Circuit Breakers & non-withdrawable. Please confirm whether GIS or AIS for 33kV indoor panel.	The 33kV Indoor Switchgear shall be indoor GIS with Vacuum/SF6 Circuit Breakers & non-withdrawable.
13	Section 3.4.3, Technical evaluation	In section 3.4.3, Technical evaluation Criteria, it is	Experience in BOTH indoor and outdoor GIS shall be

<table>
<tr><th>Sl</th><th>Ref</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td>Criteria</td><td>not specified whether GIS is indoor or outdoor for construction and design experience.

However, section 3.8 of the technical evaluation criteria is specified: 2 projects with outdoor GIS.

Given that GIS built in Africa and Europe are mostly indoor, can you please clarify if outdoor GIS experience is mandatory?</td><td>considered.</td></tr>
<tr><td>14</td><td></td><td>Payment conditions: what are the terms of payment for the supply of foreign equipment?
o Will 75% be paid when ready for expedition (FOB incoterm)
o Or will it divided into 2 parts: one being when ready for expedition and one being on arrival on site)</td><td>Please refer to GCC Clause 14 – Contract Price and Payment - as supplemented by the provisions in the PCC.</td></tr>
<tr><td>15</td><td>Section III Qualification and Evaluation Criteria, chap 3</td><td>- In section III Qualification and Evaluation Criteria, chap 3. N°5 the key CV required is Tower/transmission Line Design engineer but in the list of CVs required in 3.7 and 3.8 this CV is not listed.

Could you please clarify?

- CVs of Telecommunication Engineer and Substation Automation/SCADA Engineer are required both for Design and for Construction. Can we propose the same personnel for those positions for design and construction?</td><td>The required experience for the Tower/transmission Line Design engineer under Section 3.7 shall be as follows:
<table><tr><th>No.</th><th>Position</th><th>Total Work Experience (Years)</th><th>n Similar Work Experience (Years)</th><th>n Similar Work Environment (Years)</th></tr><tr><td>8</td><td>Tower/Transmission Line Design Engineer</td><td>10</td><td>7</td><td>5</td></tr></table>
The same personnel for these positions can be proposed for Design and Construction PROVIDED the person exhibits the experience required under both criteria.

In addition, even if one CV is considered for both, it shall be submitted separately for each position.</td></tr>
<tr><td>15A</td><td></td><td>- Does the provisional connection of the 33 kV have to be connected at the end of the project to the new 33 kV ECG substation?</td><td>33 kV offloading circuits shall be connected to the existing ECG 33kV network. NO connection shall be made to the existing 33kV ECG Substation</td></tr>
</table>

Sl	Ref	Question	Answer
16	Mandatory Criteria, Page No. 45	Mandatory Criteria - The Bidder shall provide sufficient evidence to demonstrate that it has adequate experience in the design, supply and construction of at least Two (2) outdoor GIS substations with a rating of 132kV and above within the last ten (10) years. As there are very few contractors with experience in construction of Outdoor GIS Substation. Kindly request to consider indoor type GIS substation. Hence we kindly request to relax qualification criteria as follows: "The Bidder shall provide sufficient evidence to demonstrate that it has adequate experience in Design, supply and construction of at least Two (2) outdoor or Indoor GIS substations with a rating of 132kV and above within the last ten (10) years."	Experience in BOTH indoor and outdoor GIS shall be considered.
17	Taxes and Duties Sub-Clause 21.1 Certain Forms of Local Taxation Page 157	Kindly clarify whether port clearance charges shall be borne by Contractor or exempted for the project.	Only Taxes and Duties are exempt. Any other port clearance charges should be borne by the Contractor
18		We have understood that the project is funded by means of a compact between the Rep. of Ghana and the United States of America. The compact has entered into force the 6th of September 2016 for a period of 5 years. Kindly confirm how the financing of the project will be secured in case the project execution will be beyond the present validity of the compact (5th of September 2021)?	Project execution shall NOT be extended beyond the 18 Months specified in the IFB. . In the unlikely event that project execution goes beyond Compact duration, the GoG, in accordance with the terms of the Compact and the Program Implementation Agreement (PIA), will undertake any outstanding commitments in this contract after the end of the Compact.
19	Section IV.	The prices of all imported items shall also be deemed to include all transportation and unloading at named place of destination, port handling and clearing charges including GCNet charges and destination inspection charges as well as all	Destination Inspection charges and Special Inspection Levy applicable in Ghana are NOT exempted for the project

Sl	Ref	Question	Answer
		associated costs. The price shall however exclude all customs and import duties, VAT/NHIL, EDIF and ECOWAS LEVY imposed by Laws of Ghana Please advise whether Destination Inspection charges and ’ Special Inspection Levy ‘’ applicable in Ghana are exempted for the project	
20	Section VII.	“In Contract provisions including the expression "Cost plus reasonable profit" require this profit to be one-twentieth (5%) of this Cost unless otherwise indicated in the Appendix to Financial Offer.”	The GCC Sub-Clause 1.2 on Interpretation has been supplemented by the PCC with the addition of an explanation for Cost Plus Reasonable Profit and confirmed in the Appendix to Financial Offer as Five percent (5%).
21	Section IV.	In the Clause Interpretation 1.2 mentions "Profit shall be Five percent (5%) of the Cost". We do not understand this clause. Please explain what this means?	The GCC Sub-Clause 1.2 on Interpretation has been supplemented by the PCC with the addition of an explanation for Cost Plus Reasonable Profit and confirmed in the Appendix to Financial Offer as Five percent (5%).
22	Section IV	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 whether payment will be made against the presentation of Bill of Lading along with Invoice OR after receipt of material at site.	Please refer to GCC Clause 14 – Contract Price and Payment - as supplemented by the provisions in the PCC.
23	Taxes	In the pre-bid meeting held on 26th July 2018, it was mentioned that the project is exempted from Ghanaian taxes and duties. According to this, we would like to request confirmation for the exemption of the following taxes, duties and fees: **Supply of good and services:** - Value Added Tax (VAT Act, 2013, Act 870 and Amendment Act,2018, Act 970) - National Health Insurance Levy (NHIL Act, 2012, Act 852 and Amendment Act,2018, Act 971) **Importation of goods:**	Per Section 2.8(1) of the Compact, all taxes and duties listed here are exempt for the Compact, however certain charges listed here like GCNET charges are not considered as taxes or levies and therefore not exempt. Please refer to Section 2.8(1) of the Compact and Annex V of the Program Implementation Agreement available at the MiDA website (www.mida.gov.gh)

Sl	Ref	Question	Answer
		- Import Duty (Customs Amendment Act 2015, Act 905) - Import VAT (Value Added Tax Act, 2013, Act 870 and Amendment Act,2018, Act 970) - Import NHIL (National Health Insurance Act, 2012, Act 852nd Amendment Act,2018, Act 971) - Processing Fee (Ghana Revenue Authority) - ECOWAS Levy (Customs Amendment Act 2015, Act 905) - GCNET Charge (Ghana Revenue Authority) - Net VAT (Value Added Tax Act, 2013, Act 870 and Amendment Act,2018, Act 970) - Net NHIL (National Health Insurance Act, 2012, Act 852nd Amendment Act,2018, Act 971) - IMPLEV (Ghana Revenue Authority) - Special Import Levy (Ghana Revenue Authority) - EXIM Levy (Ghana Revenue Authority) - African Union Levy (Ghana Revenue Authority) **Other taxes and duties:** - Taxes on fuel - Others (please, kindly complete the list of exempted taxes and duties)	
24	Third Party Inspection	Apart from the test witnessing/inspection of goods at Vendor works in presence of Employer/Bidders Representative. Is there any additional inspection to be carried out by the nominated inspection agency. The cost of the same is to the account of employer. Kindly confirm.	All inspection, including the inspection by the nominated inspection agency (ies) shall be to the account of the Contractor.
25	Price Schedule / Breakdown of Rates and Prices Schedule No. 2A. Plant and Mandatory Spare Parts Supplied from Abroad Schedule 2B : CONSTRUCTION OF 161/34.5kV SUBSTATION	As per SLD PMC-5091019-BSP-KAS-E-102, 3nos. Of 34.5kV voltage transformers are shown whereas as per price schedule, 4nos. of voltage transformers are mentioned. Please confirm the correct quantity for 34.5kV Voltage transformers Accordingly, please change/confirm the quantity of corresponding '34.5kV Drop out fused disconnector switches for VT"	3nos. of 34.5 kV voltage transformers and one (1) no. 13.8 kV voltage transformers shall be required An updated Price Schedule can be downloaded on the following link: http://bit.do/KasoaBSP

Sl	Ref	Question	Answer
26	Price Schedule / Breakdown of Rates and Prices Schedule No. 2A. Plant and Mandatory Spare Parts Supplied from Abroad Schedule 2B : CONSTRUCTION OF 161/34.5kV SUBSTATION	As per SLD PMC-5091019-BSP-KAS-E-102, 6nos. Of 34.5kV Vertical Break disconnectors are shown whereas as per price schedule, 8nos. of disconnectors are mentioned. Please confirm the correct quantity for 34.5kV Vertical Break disconnectors	Please use quantities as per SLD
27	Price Schedule / Breakdown of Rates and Prices Schedule No. 2B. Plant and Mandatory Spare Parts Supplied from Abroad Schedule 2B : CONSTRUCTION OF 33kV SUBSTATION- ECG	As per scope of works, Design, Supply, installation, testing and commissioning of Solar PV system along with AC converter on roof of ECG control house building and its termination and connection into AC distribution board as per requirements of this volume IIA and B (including all appendices) and as deemed necessary and as required by the Engineer; is mentioned. However, the same is not indicated in the price schedule unlike GRIDCo portion. Please clarify whether the same is required or not and specify the requested capacity of Solar PV system for ECG portion.	A minimum 15 kW Solar PV system shall be required on the ECG side. This item has now been included in an updated Price Schedule 4.2 under item 4.2.3.2 and can be downloaded on the following link: http://bit.do/KasoaBSP
28	Price Schedule / Breakdown of Rates and Prices Schedule No. 2A. Plant and Mandatory Spare Parts Supplied from Abroad Schedule 2A-GRIDCo Supply, Clause 2A.8, PROTECTION , METERING, CONTROL AND RELAYING FOR THE FOLLOWING	As per the clause mentioned in price schedule, control and relay panels for the 34.5kV and 13.8 kV Bays (6 Nos. Line + 1 No. STATCOM) is not specified. Please confirm whether separate control and relay panels are required for the 34.5 and 13.8kV bays or not and provide us the revised price schedule.	No; separate control and relay panels are not required for the 34.5kV and 13.8kV bays. These items are already included under the protection of the transformers as follows: 1. 34.5kV control and relays under 161/34.5kV transformers (Refer to Price Schedule 2A items 2A.8.1) 2. 13.8kV control and relays under 161/13.8kV transformers (Refer to Price Schedule 2A items 2A.8.2)
29	Vol-IIA_SoW _ General Requirements_Final_11.06.2019	Clauses 4.4.9 and 4.9.13 both elaborate FAT tests, Clause 4.4.9 refers to Daily allowance as indicated in the US Government per diem rates whereas 4.9.13 says a daily allowance of 200 USD in addition to full payment of accommodation, meals and local transport. Please confirm the applicable per DIEM rates for FAT	The applicable Daily allowance shall be as indicated in the US Government per diem rates at the link provided in Vol-IIA SoW
30	Vol-IIA_SoW _ General	The US webpage	In case if a particular city is not listed in the country list, the

Sl	Ref	Question	Answer
	Requirements_Final_11.06.2019	(https://aoprals.state.gov/web920/per_diem.asp) provides several different daily allowances including accommodation etc. some cities, but not all concerned cities as places for FAT or training. The maximum per diem rate includes accommodation, transport and meals. In case if a particular city is not listed in the country list, please confirm what rates should be considered for per DIEM	rates to be considered for per DIEM shall be the highest rates indicated on that list for that country on the US webpage.
31	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Cl. 4.4.9, Page 69	Type Test Certificates: We understand the clause mentioned here shall prevail all the requirement related to type testing mentioned elsewhere in the specification. Please confirm that for equipment with valid type test reports for similar or higher rating, fresh type test shall not be conducted.	Fresh type test shall not be conducted for equipment with valid type test reports, provided the Type Tests already performed are for similar equipment and comparable rating.
32	VOLUME - IIA EMPLOYER'S TECHNICAL REQUIREMENT Chapter 3 Scope of Supply and Installation Services, 3.2.2. GRIDCo SECTION SCOPE, a (3)	As per mentioned clause, Four (4) diameters of 170kV 3150A, 40kA, one and half circuit breaker outdoor GIS with Surge Arresters are mentioned. However, as per SLD "KAS-E-102", surge arresters are shown external to GIS for the line bays. Please clarify the scope.	The Scope is correct; the Surge arresters for the GIS shall be integral to the GIS
33	VOLUME - IIA EMPLOYER'S TECHNICAL REQUIREMENT Chapter 3 Scope of Supply and Installation Services, 3.2.2. GRIDCo SECTION SCOPE, a (3)	In continuation to the above query, we understand that surge arresters for line bays (Mallam-1&2, Winneba & Cape Coast) will be external to GIS and shall be installed in the dead-end towers as per Clause 3.2.5 (c) Transmission Line Scope of Works. Please confirm if our understanding is correct. Further, we understand that there are no. GIS surge arresters required for the 170kV GIS (Line and Transformer bays).	Confirmed; Surge arresters for line bays (Mallam-1&2, Winneba & Cape Coast) shall be external to GIS and shall be installed in the dead-end towers as per Clause 3.2.5. In addition, the line entries on the 170kV GIS side shall also be provided with Surge arresters which shall be integral to the GIS.
34	VOLUME - IIA EMPLOYER'S TECHNICAL REQUIREMENT Chapter 3 Scope of Supply and Installation Services, 3.2.2. GRIDCo SECTION SCOPE,	As per mentioned clause, the quantity of line traps is mentioned as Six (6) x 161 kV line Traps mounted on dead-end towers (two each for the Mallam, Winneba and Cape Coast lines. Since, there are Two (2) line bays for Mallam substation,	Confirmed

Sl	Ref	Question	Answer
	a (7)	we understand that only one line will be equipped with line traps. Please confirm.	
35	VOLUME - IIA EMPLOYER'S TECHNICAL REQUIREMENT Chapter 3 Scope of Supply and Installation Services, 3.2.3. ECG SECTION SCOPE, a (2)	As per mentioned clause, the rating of Auxiliary Transformer is mentioned as 200kVA. However, as per APPENDIX 2 EMPLOYER'S TECHNICAL REQUIREMENT GRIDCO AND ECG TECHNICAL DATA SCHEDULES, 2.0. TDS-BSP-KAS-ECG -002: 33KV/400V AUXILIARY POWER TRANSFORMER, the rating is mentioned as 100kVA. Please confirm the rating.	The rating of Auxiliary Transformer on the ECG side shall be 200kVA, 33/0.400kV
36	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Clause 1.1	In price schedule no. 4.2 -Civil works construction, there is no item included for land development of area adjacent to existing ECG switching station. Kindly confirm.	No scope of work shall be done in the existing ECG Switching Station.
37	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Clause 1.1	In price schedule no. 4.2 -Civil works construction, there is no item included for fencing of the existing ECG switching station and its adjacent area. Kindly confirm.	No scope of work shall be done in the existing ECG Switching Station.
38	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Clause 3.2.2 (a)	There is a provision for paver blocks inside the plot boundary as shown in the drawings. Kindly provide the road cum rail arrangement details for transportation and installation of power transformers in the GIS area.	Indicative Road layouts only have been given in the drawings; the final road layout shall be as per Contractor design and as shall be reviewed and approved by the Engineer prior to construction activities. Bidder shall provide his cost accordingly.
39	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Clause 3.2.2 point no. 37	Please provide the items included under landscaping. Kindly notify the area of landscaping.	Landscaping shall be in appropriate portions within the substation site and on the outside boundaries of the site to improve the outlook of the substation. This shall be as per Contractor's design and subject to review and approval by the Engineer prior to construction activities.
40	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Clause 3.2.3 point no. 25	Please provide the items included under landscaping. Kindly notify the area of landscaping.	Landscaping shall be in appropriate portions within the substation site and on the outside boundaries of the site to improve the outlook of the substation. This shall be as per Contractor's design and subject to review and approval by the Engineer prior to construction activities.
41	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, point 20, Pg 53	Detailed specification of "Electric Hook-Mounted Chain Hoist" for control room building is not provided, please provide the same.	The Bidder shall design a suitable motorized hoist system for the review and approval by the Engineer prior to construction and installation activities

Sl	Ref	Question	Answer
42	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Pg 31	We cannot find point no. 3.2.2 (6) from scope in the price schedule (One (1) x 34.5kV, 2000A bay on secondary side of 161/13.8kV, 50/66MVA, 3ph, Power Transformer to feed into STATCOM). Please confirm the requirement	The whole STATCOM is going to be supplied as a complete unit as indicated in Item 2A.7.1 of Price schedule. The Bidder shall submit its Bid as such.
43	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Pg 32	Six (6) x 161kV voltage transformers for bus bar - We presume these voltage transformers are part of GIS and to be included in price schedule item no. 2A.1.1	All these voltage transformers shall be part of the GIS and shall be included in price schedule item no. 2A.1.1
44	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Pg 32	As per scope of GRIDCo section, point no. 22, Design, supply, installation, jointing, termination, testing and commissioning of 34.5kV cables between Power Transformers, grounding transformers and appropriate switchgear panels complete with all accessories, joints, terminations and lugs etc. This part is not covered in the price schedule of GRIDCo section but is mentioned in ECG section.	These items are not required under the GRIDCo section
45	Vol-IIA_SoW _ General Requirements_Final_11.06.2019, Pg 34	As per scope of GRIDCo section, following items are missing in price schedule point no. 26, Design, supply, installation, testing and commissioning of HVAC/Air Conditioning and ventilation system along with all accessories as per requirements point no. 27, Design, supply, installation, testing and commissioning of Lightning Protection System (earthing spikes on gantry structures and earthing mast) along with all accessories point no. 30, Design, supply, installation, testing and commissioning of office furniture, furnishings and equipment etc. as per requirements	This item has now been included in an updated Price Schedule under section 4.2, item 4.2.3.1, 4.2.3.2, 4.2.3.3 which can be downloaded on the following link: http://bit.do/KasoaBSP
46	APPENDIX 2	Please confirm our understanding for the suspension insulators to be provided as follows: 1. Fog type, 160kN Insulators with ball and socket coupling for the 170kV GIS bays within the switchyard for Conductor stringing in strung bus.	Confirmed

SI	Ref	Question	Answer
		2. Polymeric Long Rod type, 120kN Insulators at Dead end transmission line towers.	
47	Vol-IIB_GRIDCo Specifications_	2.4 Technical Documentation Required with Tender The following technical documentation shall be submitted with the Tender: A report including information on short circuit tests carried out on similar transformers to assess the withstand capability to the electrodynamics forces Please confirm whether short circuit test performed on higher voltage and greater rating of transformer is acceptable.	ONLY short circuit test performed on similar type of transformer with comparable rating shall be acceptable
48	Vol-IIB_GRIDCo Specifications_Final_11.06.2019, Engineering Design Software, Pg 351	CYMGRD substation grounding software is requested. Please confirm whether CDEGS software, which is accepted worldwide for earthing, is also acceptable	Only CYMGRD substation grounding software shall be acceptable
49	Vol-IIB_GRIDCo Clause 18.3.2, Page 387 & Chapter 3: Page 54	As per the clause 18.3.2 of chapter 18, it is mentioned that "*For the ACSR Toucan lines, the number of insulator units per string shall be eleven (11) for suspension assembly and twelve (12) for tension assembly."* And the insulator units shall be U100 Type (IEC 383). Whereas, as per clause 3.2.5 of chapter 3, it is mentioned that contractor has to replace the existing line with 2 x 430mm2 ACSR (TERN) conductor. In this regard, kindly clarify the following: Type of Conductor to be installed; Mechanical Strength of Insulator; Number of Insulators per string in Suspension and Tension Assembly;	Between the new Tension towers, Contractor has to replace the existing line with 2 x 430mm2 ACSR (TERN) conductor; The Mechanical Strength of Insulators for the double conductor shall be 2x120kN; The type insulator shall be Polymer Insulator (which comes as one unit per string)
50	VOLUME IIB CHAPTER 2:	As per specification clause 2.9.2 of Vol IIB, 161kV Bushing CTs, ratio for line mentioned is 800/5A amp for Phase and 200/5A for neutral, whereas as per TDS, point 56.4 & 56.5 the ratios are mentioned 700/1/1/1 and 250/1/1 respectively. Please confirm the correct requirement.	161kV Bushing CTs, ratio shall be 800/5A amp for Phase and 200/5A for neutral.

Sl	Ref	Question	Answer
51	VOLUME IIB CHAPTER 2:, Clause 2.10.16 Painting	Please clarify that manufacturers standard painting procedure is acceptable for the Power Transformers.	The painting shall be as specified in Clause 2.10.16 of Vol IIB, Chapter 2
52	VOLUME IIB CHAPTER 3: Clause 3.19.10	As per the mentioned Clause, PD monitoring for GIS will be done through portable PD monitoring equipment. However, as per clause 3.18.3 Special tools, tackles and equipment, Sub Clause (E), online PD monitoring system is requested. We understand that online PD monitoring system is not required for GIS and the same will be done through UHF method periodically through portable PD monitoring equipment. Please confirm.	Online PD monitoring system for GIS as per Clause 3.18.3 shall be supplied. In addition, the portable PD monitoring equipment as per Clause 3.19.10 shall be supplied for detecting different types of defects for various equipment in GIS Stations
53	VOLUME IIB Clause 1.9.13 Design, Table 17	Please clarify if split factor can be considered in line with recommendations of IEEE-685-1995, Clause No.5.2.6 (50% of Fault current) for design of earthing system to meet touch and step potential values within limits.	Substation Earthing System design and Lightning Protection Design shall be as per Vol IIB Clause 1.9.13, Table 17
54	VOLUME IIB CHAPTER 14:,Clause 14.7 Solar Power System	It is mentioned that the conceptual design for the system is shown in Drawing No. PMC-5091019-BSP- 127. Please provide us the drawing as the same is not found in tender documents.	Disregard reference to Drawing No. PMC-5091019-BSP-127. The bidder shall come up with its own design which shall be subject to review and approval by the Engineer prior to construction activities.
55	VOLUME, SUBSTATION, Page 180	As per the mentioned Clause, CVT's are mentioned at Kasoa substation. We understand that CVT's are not required as the same is not mentioned in Scope of Works, Price schedule and Tender Drawings. Please confirm.	CVT's at the terminal towers are not required. However, Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers.
56	VOLUME CHAPTER 7: Page 180	As per the mentioned Clause, the physical arrangement and the schematic of the PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-105. Please provide us the drawing as the same is not found in tender documents.	The schematic of the PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-101, which is already attached.
57	VOLUME IIB Clause 15.6.5 Design	Please provide us the TYPICAL 34.5kV FEEDER STRUCTURE ARRANGEMENT drawing as mentioned in the specification.	The Typical 34.5kV Feeder Structure arrangement drawing as mentioned in the specification is shown on Drawing number PMC-5091019-BSP-KAS-C-110, which can be downloaded on the following link: http://bit.do/KasoaBSP

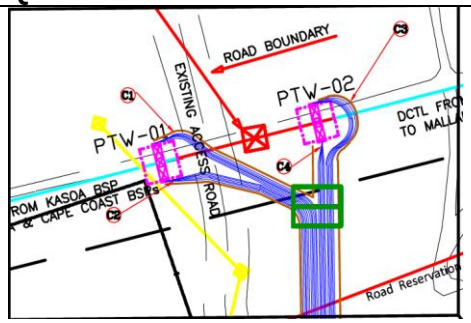
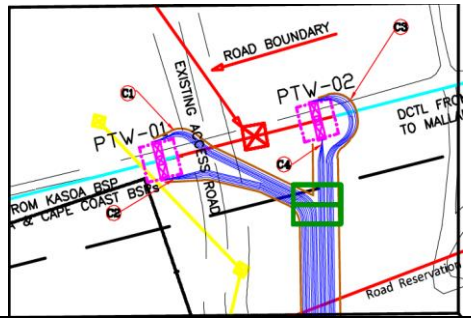
Sl	Ref	Question	Answer
58	VOLUME Clause 16.10.1 General	As per the mentioned clause, both vented lead-acid cells or vented Nickel-Cadmium cells are acceptable for the 48V DC Battery Bank. Please confirm.	For the 48V DC Battery Bank, vented lead-acid cells are **preferred**, although vented Nickel-Cadmium cells will be accepted.
59	VOLUME IIB	Please clarify the type of battery for 125V DC Battery Bank (whether vented lead-acid cells or vented Nickel-Cadmium cells are acceptable) as the same is not mentioned in the specification.	For the 125V DC Battery Bank, only vented lead-acid cells are accepted.
60	VOLUME IIB FACILITIES, Caluse 15.1.7 Rated Characteristic	As per the mentioned clause, the actual short circuit value is rated at 50kA. Due to unavailability of 50kA switchgear in the market, the contractor shall be allowed to use switchgear with short circuit rating of 40kA. However, the contractor is required to provide technical solution for review and approval of the Engineer during detailed design to reduce the short circuit values to below 40kA. In line with the above Clause, we understand that any additional requirement / equipment arising due to the technical solution to reduce the short values to less than 40kA will be considered for variation order by Employer. Please confirm.	Please consider a short circuit rating of 40kA only; no such variation order shall be considered under this contract.
61	VOLUME IIB CHAPTER 5:Clause 5.1.1 General	As per the indicated Clause, it is mentioned that Insulators shall be anti-fog type. However, as per Clause 44.0. TDS-BSP-KAS-GRIDCO-044: SUSPENSION-TYPE INSULATOR 160KN, 161KV, fog type insulator is mentioned. Please confirm the requirement.	Fog type insulator are preferred although anti-fog insulators will also be accepted
62	General (GIS - LCC Panels)	Please confirm the location of installation of LCC panels for GIS. Whether, LCC will be near outdoor GIS or within substation control building.	In addition to the Control panel in the control building, a local control cabinet (LCC) shall be provided for each circuit breaker position
63	General (GIS - Marshalling Box)	We understand that separate marshalling box is not required for the outdoor GIS bays. All control and signalling cables shall be brought out to GIS LCC and then subsequently wired to respective control and protection panels.	Correct, the LCC shall replace the GIS - Marshalling Box

Sl	Ref	Question	Answer
64	General (Control and Protection and SAS)	Please clarify whether, combined bay control and protection units (BCPU) are acceptable in lieu of separate bay control unit (BCU) and Bay protection unit (BPU) for the 170kV protection and control of line and transformer bays.	Separate bay control unit (BCU) and Bay protection unit (BPU) for the 170kV protection and control of line and transformer bays shall be utilized.
65	33kV GIS Switchgear - ECG 33kV GIS Switchgear Protection - ECG	We understand that separate control and relay panels are not required for the 33kV GIS Switchgear bays control and protection system. All protection relays for the 33kV GIS Bays will be installed in the switchgear LV compartment itself. Please confirm.	Correct, switchgear bays control and protection system. All protection relays for the 33kV GIS Bays will be installed in the switchgear LV compartment itself.
66	33kV GIS Switchgear - ECG SLD - KAS-E-202	As per SLD, distance protection is mentioned for the outgoing line feeders 33 kV I/O Feeder Overhead Line). However, as per specification VOLUME IIC EMPLOYER'S REQUIREMENT, TECHNICAL SPECIFICATIONS, (ECG SECTION) Clause 2.7. 33kV Protection, 2.7.3.3 33 kV I/O Feeder Overhead Line, only Overcurrent and Earth Fault Protection is specified. We understand that distance protection is not applicable for 33kV Outgoing feeder bays. Please confirm.	Selectable Distance protection shall be installed in addition to independent Overcurrent and Earth Fault Protection
67	General Conductor - ACSR / AAC	Please confirm the type (AAC / ACSR) and size of overhead conductor to be used for the outdoor strung bus for Transformer Bays.	Correctly rated and sized AAC shall be used as per contractor's design that shall subject to review and approval by the Engineer prior to construction activities.
68	General	Please provide the finished ground level for the existing 33kV ECG switching station.	No work shall be carried out at the existing 33kV ECG switching station. Work shall be carried out at the new site only.
69	General - Missing Drawings	Following drawings are mentioned in technical specification but missing in drawings folder. Please provide the same PMC-5091019-BSP-121 (SAS Network Design Conceptual Diagram) PMC-5091019-BSP- 122 (CCTV Design Conceptual Diagram) PMC-5091019-BSP- 126a and 126b (fire alarm and detection system)	The following drawings are already provided: 1. SAS Network Design Conceptual Diagram on drawing number PMC-5091019-BSP-103; 2. CCTV Design Conceptual Diagram on drawing numbers PMC-5091019-BSP-105 to 109; 3. Fire alarm and detection system on drawing numbers PMC-5091019-BSP-114 to 116;
70	General - Extension for time to	We have shared the technical specification with	Upon detailed study, MiDA finds no justification in the

Sl	Ref	Question	Answer
	submit queries	our vendors for all equipment in the scope. We are expecting queries regarding technical specification from our vendors. We request you to extend the deadline of submission of clarification by 2-3 weeks in order to address queries from our equipment manufacturers	request for extension as required in accordance with Sub-Clause 23.2 and therefore does not intend to exercise its discretion to extend the deadline for the submission of Bids of Friday 23 August 2019 at 10:00 am local time.
71	Section IV Form of Bid Security (Bank Guarantee)	The bank guarantee format for Bid Security does not have provision to put the bank guarantee expiry date which shall be 18th January 2020 i.e. 120+28 days from the bid submission date. International banks do not issue BG without a validity end date in the format. Kindly confirm if we can mention the bid validity end date which will be the same date as mentioned in the letter of financial offer	The BG expires twenty-eight (28) days after the expiration of the Bidder's Bid validity period.
72	Sec-IV Technical & Financial Offer Bid Forms (Appendix to Letter of Financial Offer), Cl. 14.5 (b) (i) & Cl. 14.5 (c) (i), Page 114	Plant & Materials intended for the works. We understand that payment for Plants & Materials shall be done when materials are shipped and also when material are delivered to site. Kindly tell us the Percentage of total supply value that will be made as a payment after material is shipped from the country of origin and percentage of total supply value that will be made as a payment after material reaches site. Please also let us know is the contractor can propose the payment terms in the bid for the above.	Please refer to GCC Clause 14 – Contract Price and Payment - as supplemented by the provisions in the PCC.
73	Section III: Qualification & Evaluation Criteria Clause 3.5.3 Specific experience in Key activities & Clause 3.8 Technical Evaluation Criteria	The referred clause 3.5.3 mentions that bidder shall have minimum experience in the below activity for Construction of Six (6) 132kV Substations and above of which two are GIS Substation. The clause 3.8 mentions about the mandatory criteria that the bidder shall demonstrate it has adequate experience in the design, supply and construction of at least Two (2) outdoor GIS substations with a rating of 132kV and above within the last ten (10) years.	Experience in BOTH indoor and outdoor GIS shall be considered.

Sl	Ref	Question	Answer
		We understand that clause 3.5.3 of Section III prevails and the two (2No's) GIS Substation can be ~~Outdoor~~ GIS Substations. Please confirm	
74	Section III: Qualification & Evaluation Criteria Clause 3.5.3 Specific experience in Key activities & Clause 3.8 Technical Evaluation Criteria	As per clause 3.5.3 (Sl No 1.) of Section III, bidder shall have minimum experience in the following; Construction of Six (6) 132kV Substations and above, of which two are GIS Substation. We understand that the above clause states the GIS substation can be of any nature & type, hence clause 3.8 of Technical Evaluation Criteria, Section III should be deleted. Kindly confirm.	Bidder to provide proof of compliance with this mandatory requirement, subject to the modification that Experience in BOTH indoor and outdoor GIS shall be considered.
75	Section IV Technical & Financial Offer Bid Forms Issue of Interim Payment Certificates Clause 14.6	The referred clause mentions that minimum amount of an Interim Payment certificate shall be 2.5% of the contract price with no more than one (1) submission per month. Considering the volume of the Job, and One Invoice per month, request you to please accept 300,000USD as the minimum amount for an Interim Payment Certificate. This will help us to have a better Cash flow during the Project execution. Kindly consider our request	There is no need to change this requirement at this stage. Further discussion may be held during implementation. Bidders are to comply with the provisions made.
76	Mandatory Spares	Mandatory Spares The list of mandatory spares is provided in price schedule, further there are some additional spares mentioned in respective technical specifications which are different from the one mentioned in price Schedules, please confirm if the same are to be quoted as Mandatory Spares	Both the mandatory spares listed in the price schedule as well as the additional spares listed in the technical specifications shall be supplied.
77	Volume 1 Section III Qualification and Evaluation Criteria	Please provide experience forms EXP-1 to EXP-8 in soft copy word file to be filled in by bidders.	The EXP forms have now been uploaded and can be downloaded by Bidders from the following Link: http://bit.do/KasoaBSP
78	Vol-IIB, Specification for 161/34.5kV Power Transformer	The referred clause states that "The final Decision whether to perform the short circuit test will be	Separate item has been added in the price schedule under item 2A.4.3 in relation to the short circuit test.

Sl	Ref	Question	Answer
	Chapter 2.11.3	notified by the engineer only at the time of the acceptance test of 1st Transformer of each type, at Engineers Discretion. Test Waiver, if considered by Engineer will in no way relive the manufacturer from his obligation under the contract. ***Should the test be waived, relevant price will not be paid***". We request employer to introduce a line item in the price schedule to show the charges for conducting a Short Circuit Test on one transformer, so that in case SC test is waived Payment against that price schedule item will not be made. Kindly confirm.	http://bit.do/KasoaBSP
79	Price Schedule 2A- GridCo supply, 2A.11 – Line Trap	6 Nos are mentioned against the supply of 161kV Line Trap but w.r.t single line diagram PMC-5091019-BSP-KAS-E-102, it is supposed to be 2 for each line i.e 8 Nos. Please clarify	Please provide 6no, as per Price Schedule. Only one pair shall be required for the lines to Mallam.
80	Price Schedule 2A- GridCo supply,	161kV CVT – 12 Nos are not mentioned in price schedule for Main supply, but in mandatory spares 1 No. is mentioned. Our understanding is as per the tender documents 161kV CVT's are required. Please clarify. Kindly introduce 161kV CVT line item in the price schedule.	CVT's at the terminal towers are not required. However, Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers.
81	Drawing No. PMC-5091019-BSP-KAS-E_104	**In the attached layout, arrangement for 161kV LA, Line Trap & CVT is not shown at the tapping point. Request you to provide the layout showing the above-mentioned items.** **Also, the specified drawing number is not available. Please furnish the same. "**PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-105."	CVT's at the terminal towers are not required. However, Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers. The Bidder/contractor shall come up with own design for the arrangements at the Terminal tower, which shall be approved by Engineer prior to construction. However, photographs of an existing similar arrangements provided for information only can be downloaded from the following link: http://bit.do/KasoaBSP The schematic of the PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-101, which is already attached to the bidding document.

Sl	Ref	Question	Answer
			
82	Drawing No. PMC-5091019-BSP-KAS-E_104	Area grading & levelling near tapping point and other civil works like foundation of equipment's (wave trap, LA, CVT), area fencing. Our understanding is the works will be under contractor's scope since the above works are not mentioned in tender doc. If the area for the same is already decided. Please clarify. 	The design, supply and installation of a suitable tower arrangement incorporating attachment for installing the wave trap, LA is part of the Contractor's scope. Photographs of an existing similar arrangement provided for information only can be downloaded from the following link: http://bit.do/KasoaBSP CVT's at the terminal towers are not required; only Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers.
83	General	**AS per the SOW, the existing 161kV Mallam to Winneba line shall be cutting/breaking for tee off.** **Please clarify the 161kV line shutdown period for us to implement the TEE OFF works.** **Or Contractor is to provide any alternative connection for the continuity of existing 161kV line.**	The Contractor shall plan for the shutdown period required and shall indicate same on its Program of works. During implementation, the shutdown period as per schedule shall be discussed in advance prior to implementation.
84	Volume II B, GridCO specification	**Referring the specification, some of the line**	VTs suitable for GIS installation shall be installed as

Sl	Ref	Question	Answer
	clause 7.0 Drawing No. PMC-5091019-BSP-KAS-E_104	**CVT's shall be installed at the switchyard location. Please note that the proposed GIS are cable plug in type. Kindly clarify the type of CVT required.** **Also, Referring the protection SLD, there are multiple VT's are shown (as marked) before the 161kV cable connection. please clarify.**	integral components on the GIS switchyard. There shall be an integral VT to the GIS for each cable entry. These VTs are for 161kV Line Distance Protection purposes.
85	Vol II A_SOW_ General Requirements, Page No 42, Clause no 3.2.3 **(5)**	Design, Supply, installation, testing and commissioning of Solar PV system along with AC converter on roof of ECG control house building The above item is not mentioned in price schedule 2B – ECG supply & installation . Kindly introduce a line item in the price schedule	This item has now been included in an updated Price Schedule 4.2 under item 4.2.3.2 and can be downloaded on the following link: http://bit.do/KasoaBSP
86	Drawing No PMC-5091019-BSP-KAS-C-102	During pre-bid meeting it was explained by Client that the plot for the switchyard will be handed over to successful bidder by removing all existing structures such as unfinished buildings, abandoned buildings, foundations etc. and the switchyard plot will be handed over as fenced. Therefore, we have following clarification: Kindly confirm removal of existing structures present in the switchyard plot will not be in bidder's scope. If the land will be handed over to bidder as fenced kindly confirm whether the Masonry Boundary wall for switchyard will be under scope of bidder or not.	All demolitions and removal of existing structures present in the switchyard plot **SHALL BE** part of the bidder's scope. Yes, boundary wall for the BSP site shall form part of the bidder's scope.
87	Tree-cutting	During site visit it was observed that based on the current location of switchyard existing trees would be cut. However, Client has emphasized the cutting of trees will need specific permissions to cut. Therefore, we have the following clarifications: Kindly confirm whether after adopting revised	Tree cutting should be included in the Contractor's scope, including the responsibility of obtaining permit to cut. The Duration to obtain permit varies but it is not likely to hinder project delivery. Disposal place for all debris, including trees, etc. shall be

Sl	Ref	Question	Answer
		location of switchyard and tree cutting will be required or not. If tree cutting is required, then kindly confirm responsibility of obtaining permission will not be in bidder's scope. As the overall duration of the project is very crucial, hence kindly confirm how much duration to be considered to obtain approval from Client and respective Government agencies. Please confirm the disposal place and the distance of the same from substation plot to dispose the cut tree, if tree has to be cut.	bidder's responsibility.
88	Right of way for 161 kV Cable Corridor	During site visit we have observed that there are some existing shops and establishment on the cable corridor for 161kV. Client has informed that resettlement amount has already been paid to the shop owners and they will vacate the place before the project execution will start. Therefore, kindly confirm that paying resettlement amount, vacating existing shop owners, dismantling and removal of existing shops, getting required right of way will be in employer/client scope.	Paying resettlement amounts, vacating existing shop owners and getting required right of way shall be the responsibility of the Employer. While the owners will remove some of their existing shops, some debris including foundation stumps etc. are likely to be left on site. It is the responsibility of the contractor to demolish and dispose of all remaining items after the departure of the owner, including completely abandoned shops..
89	Right of way for 161kV New terminal & Tension tower	We observed that the existing 33kV ECG line tower is very near to the proposed tower PTW-01. Please confirm the required ROW will be obtained by Client and no modification of existing 33kV ECG line if any won't be in bidder's scope of work.	The Relocation of the existing 33kV ECG line tower shall not be required.
90	VOLUME IIB CL:1.10.1	"Protection panels at remote ends of the line sections should be retrofitted with line differential protection relays identical to those to be provided at the Kasoa BSP." – We propose only supply of remote end relays; retrofitting or rewiring or supply of new panels is out of our scope. Kindly confirm	The supply, retrofitting and rewiring and commissioning or supply of new panels of remote end relays shall be **IN** the scope of the Contactor.
91	VOLUME IIB CL:1.6 PAGE 10	"Insulation Co-ordination Studies for the full development" - For the purpose of bidding we	This is a design, manufacture, supply, installation and commissioning contract. No variation shall be considered.

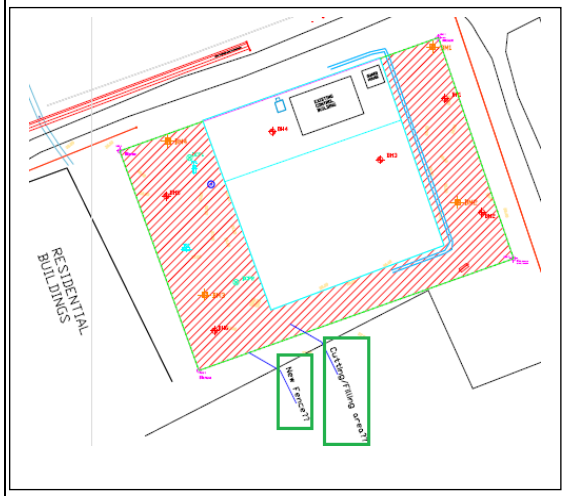
SI	Ref	Question	Answer
		consider the values proposed by Client. Any additional requirements or change in ratings shall be dealt as a separate variation order during detailed design. Kindly confirm.	
92	VOLUME IIB CL2.8.4 PAGE 40	As per table 22A the BIL levels for winding is provided, we understand that the same levels of BIL is applicable for Transformer bushings also. Kindly confirm our understanding.	Confirmed, the BIL values provided on Table 22A are for Transformer bushings
93	VOLUME IIB CL:2.10.20 PAGE 55	"The monitor shall be designed for permanent outdoor use in high voltage substation environments, for ambient temperatures of -20 deg C to 55 deg C " . "The maximum ambient temperature as per specification is 45 deg and minimum being 15 deg C and this requirement is contradictory. Kindly clarify	The monitor shall be designed for permanent outdoor for ambient temperatures of -20 deg C to 55 deg C in compliance with the specification.
94	VOLUME IIB CL:2.11.2 PAGE 56	We understand type test reports performed on a similar transformer shall be acceptable and hence repetition is not envisaged in this regard. In case tests have to be repeated, the same shall be carried out with mutually accepted time and cost implications. Kindly confirm.	The Bidder must include the cost of the short circuit test if he cannot demonstrate that the test has already been carried out on a similar transformer with comparable ratings. If ordered by the Employer, the test shall be performed at no additional cost.
95	VOLUME IIB CL:31.8.5 PAGE 80 & VOLUME IIA PAGE 24	"Seismic requirements: The GIS shall comply with IEEE STD 693 – 1984 guideline to ensure functional adequacy under seismic disturbances. The maximum ground acceleration shall be 0.5g. "This is in contradiction to the general requirements of seismic Zone 3 at 0.35g. Kindly provide the exact value for design.	Reference the attached Geotechnical Report in the bid documents. The specification for GIS to comply with general requirements of seismic Zone 3 at 0.35g is a minimum requirement. In the case where the Standards call for more stringent design criteria, the Standard requirements shall prevail. In addition, and as mentioned in the geotechnical study at section 2.6.8.3: "The seismic assessment and recommendation discussed in this report should be considered preliminary. A more detailed study shall be carried out by an expert in seismology to further examine and quantify the seismic hazards and risk associated with this substation site".

Sl	Ref	Question	Answer
96	VOLUME IIB CL:3.19.1.1 PAGE 81	"The breakers shall be single OR phase wise separate metallic type and shall be supplied with Controlled Switching Device (CSD) compatible to SCADA remote operation with IEC 61850 protocols." – As per general industrial practice-controlled switching device is provided for transformer bays only. Accordingly, breakers pertaining to transformer feeder and corresponding tie feeders shall be provided with CSD. The same is not envisaged for Line bays. Kindly confirm our understanding.	Kindly comply with this specification, the breakers to be supplied with Controlled Switching Device (CSD) compatible to SCADA remote operation with IEC 61850 protocols.
97	VOLUME IIB CL:10.1 PAGE 222	As per SLD PMC-5091019-BSP-KAS-E-102, Line traps are indicated for all the four lines, however as per Bid price schedule 2A.11.1 and scope of work IIA 3.2.2 a).7) , only 6 nos line traps are indicated. Kindly confirm the actual requirement and the no of wave traps per circuit.	Please provide 6no, as per Price Schedule. Only one pair shall be required for the lines to Mallam.
98	VOLUME IIB CL:10.1 PAGE 222	As per Bid price schedule 2A.11.1, 6 nos line traps are indicated, however there are no Coupling capacitor/CVT indicated in the technical requirement. Kindly check and confirm.	CVT's at the terminal towers are not required; only Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers.
99	VOLUME IIB CL:2.8.2, 2.8.3 (STATCOM Transformer)	STATCOM is a customized solution & hence MV operating voltage varies for different solution providers. As a global accepted practice, MV bushing voltage, % impedance and vector group of coupling transformer are decided by STATCOM supplier, in order to meet the requirements at point of common coupling (161kV bus, in this case). We trust the same is acceptable.	The secondary voltage, impedance & Vector group provided in the Employer's requirements are for guidance only. The Optimal Secondary voltage, impedance & Vector group shall be selected by supplier from a detailed study that shall be subjected to review and approval by the Engineer prior to construction activities.
100	VOLUME IIB CL:4.9.1 (STATCOM)	Please indicate the tolerance band for negative sequence component of the fundamental frequency voltage at the point of common coupling.	The STATCOM is going to be connected to a new substation to be built by the Contractor. As part of its design, the Contractor will make calculations, etc. to determine these values.
101	VOLUME IIB CL:4.15 (STATCOM)	We request you to share the grid parameters in order to simulate & model the configuration. For bidding purpose, only preliminary reports as	At this stage, only preliminary reports as indicated in 4.15.1 are envisaged; detailed report for the review and approval

SI	Ref	Question	Answer
		indicated in 4.15.1 are envisaged, based on the grid data shared by GRIDCo. Kindly confirm our understanding.	by the Engineer shall be prepared during implementation
102	VOLUME IIB CL:4.15.6.1 (STATCOM)	Kindly inform the Employer specified software, for which the simulation models are to be compatible with.	The simulation models shall be compatible with PSS/E or DigSilent modelling software.
103	VOLUME IIB CL 13.4 PAGE 274	"The sites shall be built up by a depth of approximately 1.5 metres with laterite which may be assumed to have a resistivity of 300 ohm-metre" This item not covered in the civil spec neither in BPS and hence not considered in our scope. If this item needs to be considered in our scope, kindly include the same as a separate line item in the Bid price schedule (BPS)	Refer to Price Schedule 4.2, Item 4.2.2.6
104	VOLUME Page 257 of 331	For Air conditioning & ventilation there are two types of specification available. While in IIC it is mentioned to provide split ac for ECG scope, in IID (civil works) it is specified to provide package unit with ducts. Please clarify.	The AC shall be split-type air conditioning units with capacity that will be calculated during design phase of the project.
105	VOLUME IIC EMPLOYER'S Table 32: Page 258 1.14. Environmental Design Parameters Page 16	The indoor temperature and humidity to be maintained in air-conditioned rooms are having discrepancy between table 32 and clause 1.14 in ECG specification. Please clarify	Values of indoor temperature and humidity on Table 32 shall be used for cooling load calculations for air-conditioned rooms.
106	VOLUME IID Page 148	According to specification "(c) Ventilated Areas Adequate ventilation shall be provided for all areas that are not covered by air conditioning systems to ensure that the temperature in the area is maintained below 10° C above the ambient temperature and limited to a maximum of 45° C." But as per standard practice, Bidder considers the non-Air-conditioned rooms will be dry ventilated and maintained at a temperature of 48°-50°C. Please confirm.	The Bidder shall comply with this specification in order to ensure that adequate ventilation shall be provided for all areas that are not covered by air conditioning systems.
107	General	Please specify the towers fixing arrangement within the substation area i.e. stub or foundation bolted type.	As this is a design-built contract, the Contractor shall prepare designs that comply with the specification, which shall be submitted to Engineer for review and approval

SI	Ref	Question	Answer
		Please confirm	prior to construction activities.
108	General	We propose Minimum s275 steel grade for gantries and equipment support structures. Kindly confirm	Prepare bid proposal per specifications provided.
109	General	We propose to use Pipe type Supporting structure for all the outdoor Equipment in the substation. Kindly confirm	Prepare bid proposal per specifications provided. Detailed engineering design shall be submitted to Engineer for review and approval prior to construction activities.
110	General	We wish to provide a Y angle of 600mm height with 3 rungs of barbed wire on each side above the boundary wall. Kindly confirm	Y Section will also be acceptable
111	General	Whether combination of high tensile and mild steel can be used in the same structure for 161kV Gantries. Kindly confirm.	See clarification under item SI 108.
112	General	Please furnish the standard gantry type structural and foundation details for within the substation area.	This is a design-build contract. Details of gantry structures and foundation shall be as per Contractor design and shall be subject to Engineer's review and approval prior to construction activities.
113	General	Retaining wall will be used as a boundary wall in the periphery in case of any higher-level difference. Please confirm.	This is a design-build contract. Use of retaining wall shall be determined as per Contractor design and shall be subject to Engineer review and approval prior to construction activities.
114	General	We propose 2 hrs with brick wall fire rating in control building. Please confirm.	Prepare bid proposal as per specifications provided.
115	Price Schedule 4.2.2.21	As mentioned in price schedule 7.5m width including walkway & side drain Road from community to substation gate Road to be provided. Approx. 200m. Based on the above any increase/decrease in length of road during detailed engineering which will have financial implication shall be mutually agreed.	As this is a design-build contract, It is the responsibility of the bidder. The Bidder shall make best use of the information provided to come up with all the requirements and cost accordingly. Price variation shall not be considered after Contract award.
116	General	As the specification is silent about the capacity of transformer oil collection pit to be built for each transformer, we propose a capacity of 33% of transformer oil for each pit with common single oil pit. Kindly Confirm.	Please use internationally recognized standards such as the following: 1. IEC 61936-1 -Substation-Fire protection Containment (Fire walls) & Control of oil spills in substations (oil

SI	Ref	Question	Answer
			sumps) 2. Bulletin 1724E-302 - Design Guide for Oil Spill Prevention and Control at Substations 3. IEEE 980 - Guide for Containment and Control of Oil Spills in substations
117	General	During the pre-bid meeting it is informed that Plot has been acquired by MiDA and they have said that the land will be cleaned and hand over to contractor as fenced. Any Tree cutting etc. shall be done by MiDA only. However, during site visit we have observed many existing structures are available in the plot. Based on the pre-bid meeting cleaned and fenced land shall be handed over to the respective successful contractor. Please confirm.	See clarifications under items SI 86 and SI 87.
118	General	Dismantling of existing 33kV tower along with the conductor passing through in our proposed substation shall be done by the successful bidder. Complete shutdown facility for the same shall be given by MIDA for the dismantling Please confirm.	Reasonable, well-planned shutdown shall be granted during implementation.
119	General	Based on our Site Visit Resettlement of existing local shops is required. MIDA informed that they have given Resettlement already, hence removing the shops will not be in bidder's scope Please confirm	See clarification under item SI 88.
120	chapter:1, clause 1.5 (2) -101	Referring the scope of work., the pre-fabricated building is required for STATCOM. There is no particular specification for the prefabricated building arrangement. We understood that the contractor is allowed to	Confirmed. As STATCOM suppliers have proprietary pre-fabricated building, it is allowed to propose the specs and design for Engineer review and approval prior to construction activities.

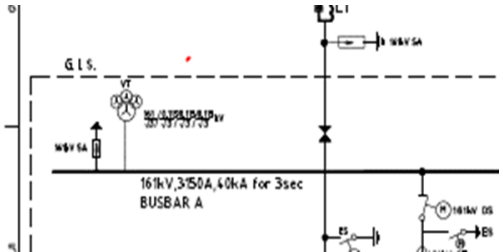
SI	Ref	Question	Answer
		propose the building model and specification with current industrial practice. Kindly clarify and confirm.	
121	DRG No:PMC-5091019-BSP-KAS-A-101 and PMC-5091019-BSP-KAS-A-201	Whether bidder can optimize the size of buildings (ECG control building & GRIDCo Control Building) from the tentative plan & section shown in the tender document. Please clarify	Confirmed. It is a requirement for bidder to optimize the size of structures in your design but Engineer review and approval prior to construction activities shall be required.
122	chapter:1, clause 1.1	Referrring the Topo survey and project scope description chapter 1, clause 1.1, stated the land development about 1800sq.m & new fence the complete plot adjacent to the existing ECG switching station. Please note the below mark up both new fence and development area (hatch) in the topo survey **Kindly clarify and confirm our understanding.**  	See clarifications under items SI 36 and SI 37.
123	Section III. Qualification and Evaluation Criteria TECH 8: CVs of Key Personnel	In the document Invitation for Bidders, Section III. Qualification and Evaluation Criteria, a Tower/Transmission Line Design Engineer is	The required experience for the Tower/transmission Line Design engineer under Section 3.7 shall be as follows:

<table>
<tr><th>Sl</th><th>Ref</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td></td><td>required for Key Professional Personnel Qualification however, its requirements aren't specified. Please specify the requirements for these key positions as Total Work Experience (years), In Similar Works Experience (years) and In Similar Work Environment (years).</td><td>
<table>
<tr><th>No.</th><th>Position</th><th>Total Work Experience (Years)</th><th>n Similar Work Experience (Years)</th><th>n Similar Work Environment (Years)</th></tr>
<tr><td>8</td><td>Tower/Transmission Line Design Engineer</td><td>10</td><td>7</td><td>5</td></tr>
</table>
</td></tr>
<tr><td>124</td><td>Appendix to Letter of Financial Offer</td><td>Please confirm that the bidder should consider the cost of DAB in the offer (cost of it) as appears in
Appointment of the Dispute Adjudication Board 20.2 Appointment of the DAB to be determined before contract is signed.
20.2 DAB shall comprise Three (3) Members.

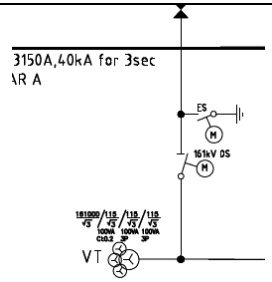
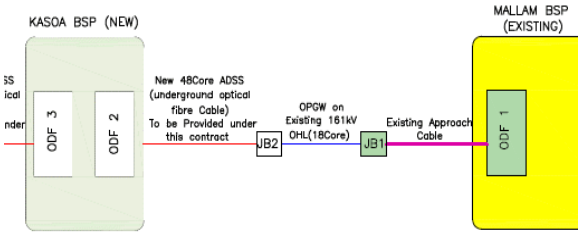
Please clarify if this DAB might be permanently in during the contract or just in case of Dispute. Moreover please clarify if the DAB might be just during construction or during the construction period and warranty period (defects notification period) of the contract.</td><td>Bidders are required to consider all costs to them and where not, it will be deemed to have been included in other items.

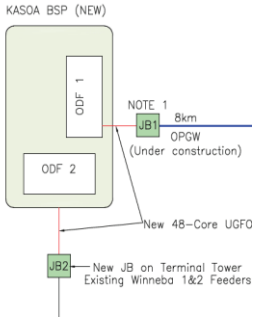
Please refer to GCC Sub-Clause 20.2 – Appointment of the Dispute Adjudication Board - as supplemented by the provisions in the PCC.</td></tr>
<tr><td>125</td><td>Section VI</td><td>Please confirm that all taxes, stamp duties, VAT and other are exempted. For the contractor and their subcontractor for the project</td><td>Yes Per section 2.8(1) of the Compact, all Compact Funds are exempt from the payment of taxes for both Contractor and their subcontractors.</td></tr>
<tr><td>126</td><td>Volume-II A</td><td>In the paragraph "1.5 Summary of Scope of Works, 1. General", it seems that all permits related to site area are included in the scope of works. Please confirm that the project area will be delivered to the Contractor free of any charges and with all the necessary permits to start the project.</td><td>Confirmed</td></tr>
<tr><td>127</td><td>Volume-II A, Transmission Line scope</td><td>Please clarify the coordinates of the Tower PTW-03, because we haven’t found in the drawing nor in the specification</td><td>The exact positions of the Towers shall be determined by the Contractor through survey. However, the approximate positions are given below:
<table>
<tr><td rowspan="2">Tower Position</td><td colspan="2">UTM Coordinates</td></tr>
<tr><td>Eastings</td><td>Northings</td></tr>
<tr><td>PTW-01</td><td>783335.673</td><td>612095.115</td></tr>
<tr><td>PTW-02</td><td>783372.092</td><td>612104.192</td></tr>
</table>
</td></tr>
</table>

SI	Ref	Question	Answer
			PTW-03 | 782928.747 | 611993.725 PTW-04 | 783752.053 | 612199.140
128	Volume-II A. 4.13.2 Site office	Please confirm that the site office can be built in container methods.	Confirmed
129	Volume-II A. 5.2.2.4 Communication Equipment- Operation & Maintenance training- GRIDCO	Please clarify the number of days required for this training	The duration shall be one (1) week
130	Volume-II A. 5.2.2.5 Protection equipment training- GRIDC O	Please clarify the number of days required for this training	The duration shall be one (1) week
131	Volume-II A. 5.2.2.6 SAS training- GRIDCO	Please clarify the number of days required for this training	The duration shall be one (1) week
132	Drawing No: PMC-5091019-BSP-KAS-C-102 and PMC-5091019-BSP-KAS-C-104	In the drawings No: PMC-5091019-BSP-KAS-C-102 and PMC-5091019-BSP-KAS-C-104 the structures for demolition are indicated. Please provide us the dimension of it to make a quotation according to it.	Dwg. PMC-5091019-BSP-KAS-C-102 is scaled. Dimensions can be taken from the drawing. As for actual conditions, it is the bidder's responsibility to conduct a visit at site and make own assessment.
133	Volume-II B. 2.11.3 Short circuit test	Please confirm that this test IS NOT required for the STATCOM transformer 13/161kV 50MVA.	This test shall be required if Bidder does not demonstrate the type test was done prior to submission bid.
134	PMC-5091079-BSP-KAS-E-109	Please confirm that the conductor between PTW-01 and PTW-02 will NOT be reused the existing one. Please confirm that all the conductor between PTW0-03 to PTW-01, and PTW-01 to PTW-014 will be replace for double circuit 2x430mm2 ACSR (approximately 12000m total length of conductor) as specify in Volume A 3,2,5 Transmission Line scope of works, page 56.	Please refer to Drawing instead of number PMC-5091079-BSP-KAS-E-104 instead of PMC-5091079-BSP-KAS-E-109 The conductor between PTW-01 and PTW-02 Shall NOT be reused; The conductor between PTW0-01 to PTW-03 shall be replaced by double circuit 2x430mm2 ACSR Tern Conductor; The conductor between PTW0-02 to PTW-04 shall be replaced by double circuit 2x430mm2 ACSR Tern Conductor;
135		The specification seems to be required the Surge arrester in the GIS and following the SLD seem to be required in the bus bar. Please confirm that the surge arrester of the GIS will be located in the bus	The Surge arresters in the GIS shall be in the GIS on locations indicated on the SLD



Sl	Ref	Question	Answer
	Volume-II B. 3.19.7 Metal enclosed surge arrester	bar.	
136	Volume-II B. 7.0 Telecomunication,SAS SCADa and IP CCTV	Please provided the drawing PTW-01 and PTW-02 with the physical arrangement of the tower of the PLC and rest of equipment. Because the drawing mention in the specifications "PMC-5091019-BSP-KAS-T-105." is the related to the CCTV system "The physical arrangement and the schematic of the PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-105."	The Bidder/contractor shall come up with own design for the Physical arrangements at the Terminal tower, which shall be approved by Engineer during prior to construction activities. However, photographs of an existing similar arrangement provided for information only can be downloaded from the following link: http://bit.do/KasoaBSP The schematic of the PLC coupling at the Terminal Towers is shown in the drawing number PMC-5091019-BSP-KAS-T-101, which is already attached.
137	Volume-II B. 7.0 Telecommunication, SAS SCADA and IP CCTV	It is specified in the section the need of 12 CVT but this is not included in the Schedule of prices. "Twelve (12) CVTs will be required for the four (4) Lines from Kasoa but only six (6), which will be used for PLC Coupling, will be installed at the Terminal Towers. The remaining CVTs without PLC Coupling will be installed at the Switchyard." Please confirm that this 12CVT is not needed or they are the Voltage transformer located in the Line bay GIS	CVT's at the terminal towers are not required. However, Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers. Instead, 161 kV VTs shall be placed integral to the GIS

SI	Ref	Question	Answer
			
138	Volume-II B. 7.0 Telecommunication, SAS SCADA and IP CCTV	Please confirm that the Line traps, surge arrester and CVT (if needed) and PLC shall be mounted in the electric line tower PTW-01 and PTW-02	CVT's at the terminal towers are not required. However, Line Traps and all associated equipment like coupling capacitors shall be required at the terminal towers.
139	Volume-II B. 7.0 Telecommunication, SAS SCADA and IP CCTV - Re-enforcement of the OPGW	Please confirm that in the scope of the Kasoa project is ONLY included the following replacement of the OPGW: - Approximately 6000 m of 48-core OPGW and approximately 500 m of 48 core UGFOC from Winneba SS to JB on Tower T172 - Approximately 10000 m of 48-core OPGW and approximately 500 m of 48 core UGFOC from Cape Coast SS to JB on Tower T22 and It is not required additional extension of OPGW as in other substation (between kasoa and Mallam, line in blue), as seems to be reflected in the PMC-5091019-BSP-KAS-T-104 	Refer to Section 7.0 for all the OPGW and other Optical Cables in the scope; Bidder shall include all these in their scope of work.
140	Volume-II C. 2,13	Please confirm the length of the UGFOC to be	The length of the UGFOC to be built in this section

<table>
<tr><th>Sl</th><th>Ref</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td>Telecommunication system</td><td>built in this section between Kasoa and JB1 an JB2, as It appears in the drawing PMC-5091019-BSP-KAS-T-204
 
</td><td>between Kasoa and JB1 an JB2 is 600m in total [refer to Price schedule Item 2C.1.1]</td></tr>
<tr><td>141</td><td>Schedule of Prices - DTS</td><td>Please confirm that the Auxiliary transformer for the ECG substation is 100kVA as is mention in its TDS, although the SLD appears 200kVA and the price Schedule appears 200kVA

"33/0.4kV 200 kVA Station Service Transformer complete with all accessories deemed necessary for to ensure that it is fit for purpose."--> Schedule of prices</td><td>The 33/0.4 kV Auxiliary Transformer on ECG Side shall be rated 200kVA</td></tr>
<tr><td>142</td><td>Volume-II C. 2.30.4. System description - Solar system</td><td>Please confirm if It is required a solar system for the ECG control building, It is specify in the Volume II-C, but It is not require in the Price schedule.
Ir required please clarify if It is that the PV system required is a 15kWp or 10kWp.</td><td>A minimum 15 kW Solar PV system shall be required on the ECG side. This item has now been included in an updated Price Schedule that can be downloaded on the following link:

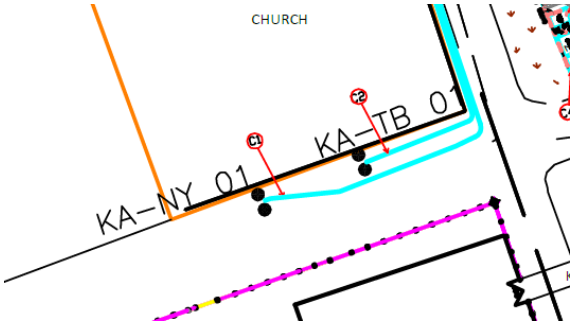
http://bit.do/KasoaBSP</td></tr>
<tr><td>143</td><td>Volume-II A. 3.2.5. Transmission Line Scope of Works</td><td>Please give details of the township distribution line (C9) as well as the cable trench section. Please provide coordinates or drawing or the electric line or at least the coordinates of the last tower that the MV circuit should be connected and drawing of the section of the cable trench</td><td>This refers to the 33 kV line adjacent to the main gate of the existing switching station going westwards. The coordinates of the first four (4) pole are given below:
<table>
<tr><td rowspan="2">Pole Position</td><td colspan="2">UTM Coordinates</td></tr>
<tr><td>Eastings</td><td>Northings</td></tr>
<tr><td>KA-KT 01</td><td>783329.93</td><td>611773.50</td></tr>
</table></td></tr>
</table>

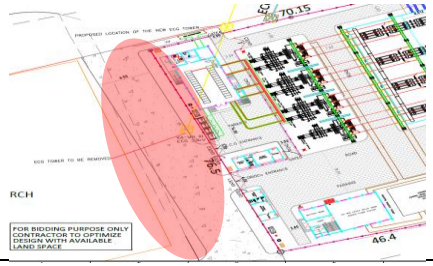
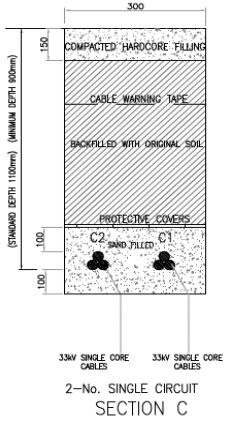
<table>
<tr><th>Sl</th><th>Ref</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>KA-KT 02</td><td>783356.23</td><td>611701.81</td></tr>
<tr><td>KA-KT 03</td><td>783382.53</td><td>611630.11</td></tr>
<tr><td>KA-KT 04</td><td>783409.29</td><td>611557.15</td></tr>
<tr><td>KA-KT 05</td><td>783435.07</td><td>611485.22</td></tr>
<tr><td>KA-KT 06</td><td>783425.96</td><td>611425.10</td></tr>
</table>
</td></tr>
<tr><td>144</td><td>Volume-II D. 1.20 Site offices and facilities for Engineers</td><td>Please confirm that the site office mention in this section with:
"- Reception
- Conference room that can provide seating for 15 persons furnished with two (2) air- conditions, one (1) No. large Conference Desk, size 3000(L) x 900(W) x 750(H), Fifteen (15) No. office chairs size 400(W) x 400(L) x 800(H).
- Two offices. Each office shall accommodate two persons and furnished with one
(1) Air-conditioner, one (1) Refrigerator (100 litres), and a digital camera. Each office shall also be furnished with two (2) No. Normal desks size 1500(L) x 800(W) x 750(H) with two right side (400 x 200) drawers and three (3) No. Swivel Chairs.
- Kitchenette furnished with 1 No. electric microwave oven and electric kettle....."

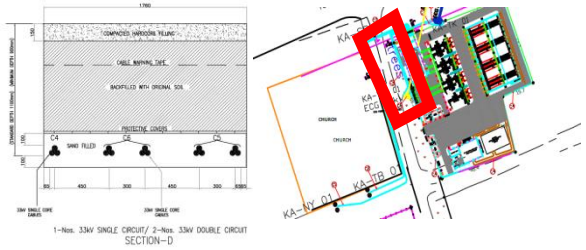
are the same site offices that appears in the Section "Volume-II A. 4.13.2 Site office" with the following:

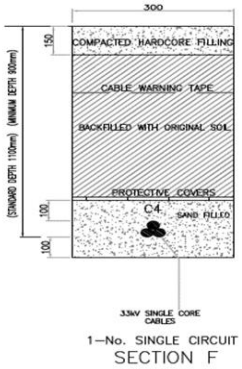
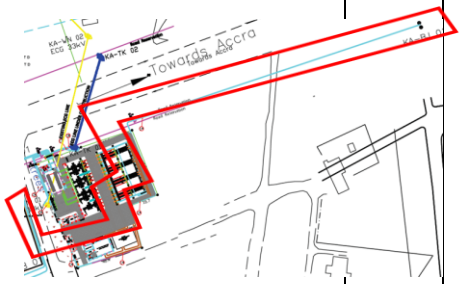
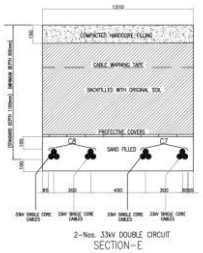
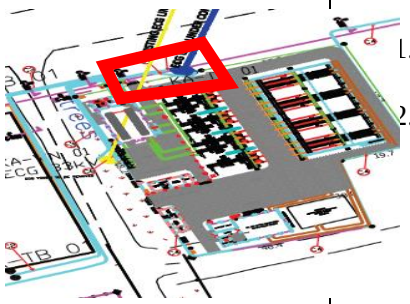
"- Four private offices at the Contractor's project Engineering Site. One office each for Employer, Engineer, ECG and GRIDCo.
- Independent office furniture and equipment, positioned in each of the above offices including a printer, scanner, fax machines, file/storage facility, four (4) desks, Four (4) chairs, one (1) shelving, one (1) lockable filing cabinets, one (1) lockable drawing cabinets and stick files, partitions, two (2)</td><td>Confirmed; only One office each for Employer, Engineer, ECG and GRIDCo are required with all the provisions as listed.</td></tr>
</table>

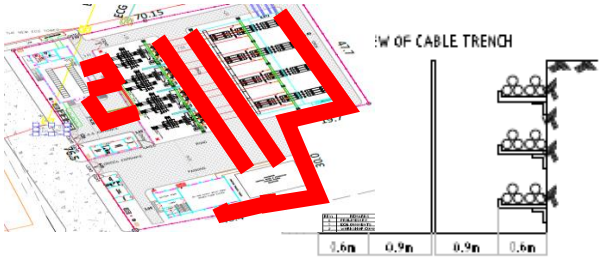
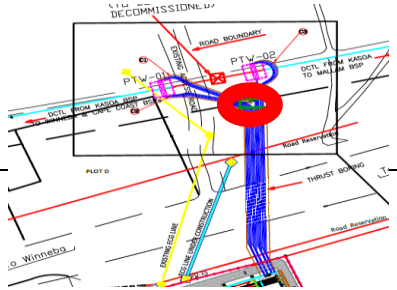
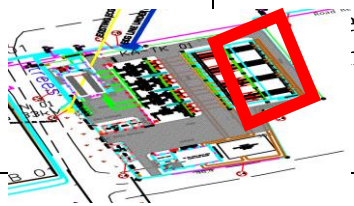
SI	Ref	Question	Answer
		desk Lamps, one (1) table top refrigerator etc. - One Thermal Inkjet Plotter (Print speed line drawing - 28sec/page on A1/D, 70A1/D prints per hour; Memory - 16GB, No. of print cartridges - 6 capacity 130ml; Media size – 210 to 914mm (8.3 to 36in) wide sheets, 279 to 914mm (11 to 36in) rolls; Media handling standard/output – Sheet feed, roll feed, input tray, automatic cutter; Standard connectivity – Fast Ethernet (100Base – T), Hi-Speed USB 2.0 certified, Wi-Fi; Minimum Operating System – Windows and Mac; Operating temperature – 5 to 40oC; Input voltage(auto ranging) – 100 to 240VAC(+/- 10%), 50Hz(+/- 3Hz), 1200mA max.)...". And it IS NOT required another additional offices for the Engineer.	
145	Technical Data Schedule	Please confirm that it is not necessary to fill the CT 161kV "7.0. TDS-BSP-KAS-GRIDCO-007: 161KV CURRENT TRANSFORMER". Due to there is not supply of this equipment separately, and this is included int he GIS	ALL the TDS items shall be filled, including for equipment incorporated in the GIS.
146	Technical Data Schedule	Please confirm that it is not necessary to fill the VT 161kV "5.0. TDS-BSP-KAS-GRIDCO-005: 161kV VOLTAGE TRANSFORMER". Due to there is not supply of this equipment separately, and this is included int he GIS	ALL the TDS items shall be filled, including for equipment incorporated in the GIS.
147	Section I - Instruction to bidders	In case of Joint Venture (but not already register), please confirm that It is possible to present 2 Bid securities adding the total amount required by the bid, each company separately in the name of the future JV.	One Bid Security to the value specified in the IFB will be acceptable
148	Drawing No: PMC-5091019-BSP-KAS-E-101	In the drawing No: PMC-5091019-BSP-KAS-E-101 a converter control room & protection, cooling system (STACOM) is within the scope of works. Please provide us the drawing related to this building, specifying the plans, elevations and sections, the fire system detection as needed and	As STATCOM suppliers have different fabrication for building subject to equipment dimensions, the Bidder shall be allowed to propose the drawings for the building, specifying the plans, elevations and sections etc. for Engineer review and approval prior to construction activities.

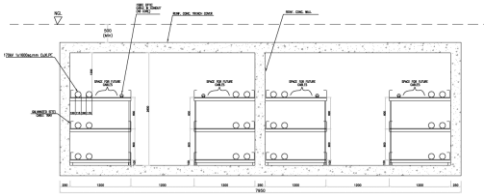
SI	Ref	Question	Answer
		the CCTV or other installations if it's required.	
149	Drawing No: PMC-5091019-BSP-KAS-C-102	In the drawing No: PMC-5091019-BSP-KAS-C-102 the site survey and existing conditions plan are provided for the present tender. Please confirm that this is the yard surfacing to consider in this tender.	A new site layout that includes the adjacent land indicated on drawing No: PMC-5091019-BSP-KAS-C-102 has now been acquired. The Bidder shall be free to optimize their designs on the new site layout, subject to review and approval by the Engineer prior to construction activities. The contractor's optimized design shall be the basis of area computation for area of yard surfacing The new site layout, in pdf and AutoCAD formats can be downloaded on the following link: http://bit.do/KasoaBSP
150	Volume-II A. 1.1 Introduction	Backfilling, levelling and compaction of approximate land area 1800 m2 adjacent to the existing ECG switching station and fencing of entire land (dimension 52 mx76 m approximately) are included in the scope of work. Could you provide us the final level required of this land and the type of fencing required?	See clarifications under items SI 36 and SI 37.
151	Drawing No: PMC-5091019-BSP-KAS-E-204	As we can see in the drawing No: PMC-5091019-BSP-KAS-E-204, the connection between circuits from existing ECG 33kV to Kasoa Bulk Supply Point it will just be done in the existing terminal wood pole KA-NY 01 and KA-TB 01, as indicated in the following picture: 	Refer to Vol IIA -SoW, Section 3.2.6 which shows the full extent and scope of the 33kV interconnection circuits

SI	Ref	Question	Answer
152	Breakdown of Rates and Prices Schedule No. 4.2 Installation & Other Services (Civil Works Construction)	We understand that the item "4.2.2.21 Provide Road network from community to substation Gate average width 7.5m including walkways and side drains. Approximate length = 200m" is concerned to the access road for Kasoa BSP, as indicated in red in the following picture. Please confirm this interpretation. Otherwise, please indicate us the location of Road network from community to substation and the Acces Road to the substation.  	Confirmed. This item is the same as “Access Road for Kasoa BSP”.
153		We understand that the 33-kV cable trench section C applies for the following length:  	Confirmed

Sl	Ref	Question	Answer
		Please confirm this interpretation.	
154	Drawing No: PMC-5091019-BSP-KAS-C-202	We understand that the 33 kV cable trench section B applies for the following length:  Please confirm this interpretation.	Confirmed
155	Drawing No: PMC-5091019-BSP-KAS-C-202	We understand that the 33 kV cable trench section D applies for the following length:  Please confirm this interpretation.	Confirmed
156	Drawing No: PMC-5091019-BSP-KAS-C-202		Confirmed

Sl	Ref	Question	Answer
		We understand that the 33kV cable trench section F applies for the following length:   Please confirm this interpretation.	
157	Drawing No: PMC-5091019-BSP-KAS-C-202	We understand the following: 1. We only have to connect C7 and C8 cables to "ECG LINE UNDER CONSTRUCTION" but we don't have to do anything with "ECG LINE UNDER CONSTRUCTION". Please confirm it and otherwise, specify the scope of work of it. 2. The 33 kV cable trench section E applies for the following length:   Please confirm this interpretation.	1. Confirmed 2. Confirmed
158		Please confirm that the trenches within the Kasoa	Final layout and dimensions of cable trenches shall be

Sl	Ref	Question	Answer
		BSP, as indicated in the picture with red line, have the following section and there will be equipped with removable galvanized steel chequered cover plates 6.0 mm thick.  Otherwise, please specify the section of trench cable within the Kasoa BSP substation.	determined by Contractor as per his design subject to review and approval by the Engineer prior to construction activities. Per specifications, the cable trenches are to be provided with galvanized steel chequered plates 6.00mm thick.
159	Breakdown of Rates and Prices Schedule No. 4.2 Installation & Other Services (Civil Works Construction)	We understand that the item *"4.2.2.20 Supply and lay Cable ducts made up of 200mm PVC pipes on 100mm thick sand bedding complete with excavation and backfilling including breaking into existing cable trenches all associated works inclusive*" is concerned to the all 33 kV cable trench section A, B, C, D, E, F according to drawings No: PMC-5091019-BSP-KAS-C-201 and PMC-5091019-BSP-KAS-C-202. Please confirm this interpretation. Otherwise, please indicate us which trenches correspond.	This item is for trenches within the substation required for exiting cables to lines outside of the substation
160	Drawing No: PMC-5091019-BSP-KAS-E-104	We understand that the 170 kV circuits section B applies under the GIS area and in the tunnel access building as indicated in the following pictures:  	The section drawing shown is the section for the tunnel erminal tower to the edge of the road, after the nto the GIS area.

SI	Ref	Question	Answer
		 Otherwise, please provide us the section of them.	
161	Breakdown of Rates and Prices Schedule No. 4.2 Installation & Other Services (Civil Works Construction)	Please, provide us the location and the section concerned to the following item: "*4.2.2.18 Provision of underground cable trench system for 170kV cables from special terminal (dead-end) towers to the GIS switchgear complete with ventilation system, lighting system, emergency lighting and drainage system with automatic pump system, pits, chainlink fencing of trench, underground cable trench access building including all civil works and cable trays complete.*"	See clarification under item SI 160
162	Drawing No: PMC-5091019-BSP-KAS-E-104	Regarding to "Existing ECG LINE" we understand that we don't have to execute a trench for the cable within the Kasoa BSP Substation. Please confirm this interpretation. Otherwise, please provide us the section of this cable trench.	Question not Clear However, all cabling inside the substation shall be installed in trenches
163	Tender Document : Vol-IIA_SoW _ General Requirement Page no : 07	The indicated area of 1728m^2 is applicable to adjacent side of existing ECG switching station. Our scope of work which include site levelling, fencing, gravelling is applicable to the above area. Please confirm.	See clarifications under items SI 36 and SI 37.
164	Tender Document :	We presume, the outer fence of existing ECG	See clarifications under items SI 36 and SI 37.

SI	Ref	Question	Answer
	Drawing No.PMC-5091019 –BSP-KAS-E-204-33kV interconnecting circuit layouts	33kV switching station including proposed area shall be compound wall. It includes dismantling existing chain link fence in the 33kV switching station. Please confirm.	
165	Geotechnical Investigation Report - 2.6.1.5, 2.6.2.1 & 2.6.2.3	As per soil investigation report, a graded crushed rock compacted to 98% of MDD as recommended for a depth of 200mm. Please confirm this is applicable to all footing of foundations.	Reference the attached Geotechnical Report provided with the bid documents.
166	Geotechnical Investigation Report	Please confirm, whether we need to do soil investigation after of award contract.	See Sec. 1.6 Soil Investigation of Vol. IID.
167	161kV Line Entry Plan drawing - PMC-1091019-BSP-KAS-E-104	The existing access road in the proposed dead-end cable compound tower location. Please confirm, the existing aces road shall be re-routed after construction of dead-end tower cable compound works.	The proposed dead-end cable compound tower location shall be selected to avoid the road; the road shall not be re-routed.
168	Substation Area	As per site visit, the proposed area may extend further from the present location. Please confirm. If extended further, kindly provide the update plot plan drawing.	See clarification under item SI 149.
169	Type of Fence	The type of fence between GRIDCo substations to ECG substation is Chain link wire mesh type fence. Please confirm.	No. Per drawing E-104 the fence is made of Mesh Panel.
170	170kV Underground Cable Thrust Boring/Trench Cross section -1 drawing - PMC-5091019-BSP-KAS-C-107	As per Note 10, the chain link fence shall construct at adjacent sides of 170kV concrete cable trench. The length fence on both side of cable trench is route length of cable trench. Please confirm.	Yes. This applies to the route length plus the length at both ends of the tunnel. Applicable at both sides of the road.
171	Tender Document: Vol-II D Civil Specifications Page no: 46 Topic: 2.3.6. Production of Concrete	Kindly provide the type of cement to be used for the civil works.	General purpose cement Type I or Type II shall be used.
172	161kV Line Entry Plan drawing - PMC-1091019-BSP-KAS-E-104	Kindly provide the co-ordinates of the following:- Tension Towers PTW.03 & PTW.04 Special Terminal (Dead End) Towers PTW.01 & PTW.02	See clarifications under item SI 127.

SI	Ref	Question	Answer
173	Volume IIB, GRIDCO section, Cl. 2.8.2 Technical Characteristics for 161/13.8kV, 50/66MVA STATCOM Transformers, Pg 39	As per the Technical Schedule TDS-BSP-KAS-GRIDCO-002 of 161/13.8kV, 50/66MVA STATCOM Transformers as mentioned that On Load tap changer. Whereas the technical specification Cl. 2.8.2, Page 39 indicated that Off load tap changer. Please confirm type of tap changer for 50/66MVA STATCOM Transformers.	An Off-load tap changer is requested for as a minimum. However, STATCOM supplier is free to provide an optimal design that shall be subject to review and approval by the Engineer prior to construction activities.
174	Volume IIB, GRIDCO section, Cl.1.9.10 Design Parameters and Ratings for Power Transformers, Page 17	As per the Technical Schedule TDS-BSP-KAS-GRIDCO-001 of 120/140 MVA power transformer & technical specification 2.8.3 Impedance Voltage, Page 40 mentioned as 12.5% at 120MVA. Whereas the technical specification 1.9.10, Page 17 indicated that Percentage impedance as 12.5% at 140MVA. Please confirm the percentage impedance.	Impedance Voltage shall be 12.5% at 120MVA
175	Volume IIB, GRIDCO section, Cl.2.10.20 On-line Dissolved Gas Analyzer (IEC 567/ASTM 3612), Page 55	In GRIDCo technical specification 2.10.20, On line Dissolved Gas analysis is given for Power transformers. Whereas Price schedule & Technical data schedule (TDS-BSP-KAS-GRIDCO-001& 002) not mentioned requirement of Online DGA for 120/140MVA power transformers & 50/66MVA STATCOM transformers. Hence Please Clarify requirement of Power Transformer.	This shall be treated as an accessory to the main transformer and the Bidder shall propose a device that meets the specification for review and approval by the Engineer prior to manufacture of transformer. As the DGA is an accessory to the main transformer, the Bidder shall include its price with the main transformer
176	Price schedule 2A.18.5, Mobile fire extinguisher for transformer area	As per price schedule 2A.18.5 calls for mobile fire extinguisher for transformers. Please confirm if any other requirement of Nitrogen injection system or Hydrant system for Transformers.	Nitrogen injection system or Hydrant system shall not be required for fire extinguisher system for Transformers
177	Volume IIB, GRIDCO section, 2.11.3 Type Tests	Referring to the specification, it is specified that short circuit test on a transformer of the same type, same design and equivalent power rating, the design calculations and a test certificate. Kindly confirm higher MVA capacity and same voltage rating or higher MVA and higher voltage	Only short circuit test on a transformer of the same type, same design and comparable power rating shall be accepted.

SI	Ref	Question	Answer
		rating of short circuit test on transformer also acceptable.	
178	Volume IIA, Cl.4.4.9. Material and Test Certifications, Page 70	Referring to the specification, it is specified that test reports submitted shall be of the tests conducted within last Fifteen (15) years prior to the date of bid submission for 33kV equipment and within the last five (5) years for all other equipment. Please confirm same as applicable 15 years for 161kV outdoor GIS & 34.5kV Dead end Circuit breakers.	Test reports submitted shall have been conducted within last Five (5) years prior to the date of bid submission for 33kV equipment and within the last five (5) years for 161kV outdoor GIS & 34.5kV Dead end Circuit breakers
179	Volume IIA, 3.2.6. Construction of 33kV interconnecting and offloading circuits	Provide cable route map drawings & details of road crossing for decommissioning of 33kV power cable.	Indicative routes are shown on the topographical layout diagram. However, the bidder shall use own cable detector to confirm the exact route before excavation.
180	Section I - Instruction to Bidders, Clause No. -5.6, Conflicts of Interest	As per the said clause, if the manufacturer or OEM for Major equipment is directly participating as bidder (either sole bidder or as member of JV) in the subject tender whether they can support other prospective bidder of this tender as equipment supplier. Please confirm.	Supplier or Manufacturer for Major equipment shall be allowed to bid either as sole Bidder or as part of Joint Venture. In addition, such manufacturer is free to support other prospective bidder of this tender as equipment supplier.
181	Bid Security/bank Guarantee	Please confirm whether Bid Security / Bank Guarantee issued from reputable bank from Bidders country is acceptable. Kindly confirm if the same is acceptable.	Reference ITB 20.2, a Bid Security/Bank Guarantee issued from a reputable Bank from Bidder's country can only be acceptable if the Bid Security has been confirmed by a correspondent financial institution located in Ghana, satisfactory to MiDA and makes the Bid Security enforceable. To be acceptable, the Bid Security / Bank Guarantee shall be issued from reputable local bank or if issued from a foreign bank, shall be underwritten and supported by a local Bank.
182	Third Party Inspection	Apart from the test witnessing / inspection of goods at Vendor works in presence of Employer / Contractors Representative. Is there any additional inspection to be carried out by the nominated inspection agency? The cost of the same is to the account of employer. Kindly	See clarifications under item SI 24.

Sl	Ref	Question	Answer
		confirm	
183	Section VII - Particular Conditions of Contract, Clause No.-21, Taxes & Duties	Please clarify and confirm the correctness of our Understanding that the following taxes are exempted for this project for Off Shore Supplies: (i) Customs duties, (ii) import duties (iv) VAT, (v) Other taxes & levies (vi) Withholding Taxes vii) Ecowas Levy viii) Customs user fee	Confirmed - Per Section 2.8(1) of the Compact, the taxes and duties listed here are exempted for Offshore Supplies.
184	Section VII - Particular Conditions of Contract, Clause No.-21, Taxes & Duties	As per the said clause Taxes & Duties are Exempted to Bidder/Contractor. In case of Bidder/Contractor, deploys a Local Subcontractor for Civil & Installation then the Local Subcontractor is eligible for Exemption from Taxes. Please clarify. If not exempted to subcontractor in such case, please clarify the Taxes applicable to Local Subcontractors	Confirmed, Local Subcontractors are eligible for Exemption from Taxes just like Main contractors
185	Section VII - Particular Conditions of Contract, Clause No.-21, Taxes & Duties	Kindly clarify & confirm us whether Tax Exemption shall be applicable for the temporary importation of our Tools & Plants which will be taken back after completion of the Project	Yes Tax Exemption will be applicable for the importation of tools & plants once Compact Funds are used.
186	Section VII - Particular Conditions of Contract, Clause No.-21, Taxes & Duties	Kindly clarify & confirm us whether Tax Exemption shall be applicable for the importation of Construction Material like Cement and Reinforcement steel for the Project.	Yes Tax Exemption shall be applicable for the importation of Construction Material if Compact Funds are used.
187	Type Test Reports	Please confirm whether a complete set of type test reports of offered equipment to be included in the technical proposal or a list of type of test report with result pages of offered equipment in the technical proposal is acceptable.	A complete set of type test reports of offered equipment shall be included in the technical proposal
188	Contractor's equipment.	As per site visit, whether the contractors shall	Equipment and Vehicles purchased by the contractor using

SI	Ref	Question	Answer
		hand over all temporary construction equipment like Car, Crane, testing equipment, etc. to end utilities. Since the depreciation value of subject equipment is only considered. Hence, we shall not handed over any temporary construction equipment to end utilities. Please confirm.	Compact Funds shall be the property of MiDA upon expiration of the contract.
189	IFB and pre-bid meeting	We have understood that the project is funded by means of a compact between the Rep. of Ghana and the United States of America. The compact has entered into force the 6th of September 2016 for a period of 5 years. Kindly confirm how the financing of the project will be secured in case the project execution will be beyond the present validity of the compact (5th of September 2021)?	See clarifications under item SI 18.
190	IFB Section 3 Qualification & Evaluation Criteria	Experience in GIS substations According 3.8: bidder needs to demonstrate experience in at least 2 outdoor GIS substations with a rating of 132kV or above. According to 3.4.3, specific experience: Six (6) 132kV Substations and above, of which two (2) are GIS Could clarify the requirements to be demonstrated?	Both criteria shall be satisfied. For requirement of Clause 3.8, Experience in BOTH indoor and outdoor GIS shall be considered.
191	IFB, ITB 8.1 Clarifications	Due to the complexity of the project we kindly ask to allow for a second round of clarification	Only one set of Clarifications is permissible under this procurement and may be requested by e-mail appropriately not later than Wednesday 10th July, 2019 with responses to be issued to all Bidders not later than 17:00 hours local time in Ghana on Friday 26th July, 2019.
192	IFB, ITB23.1 Bid submission date	Due to the complexity of the project and summer vacation period we kindly ask for a time extension of three weeks	MiDA does not intend to exercise its discretion to extend the deadline for the submission of Bids as no addenda and/or amendments have been issued.. As per ITB 23.1, the deadline for Bid submission is and remains Friday 23rd August, 2019 at 10:00 am local time.

SI	Ref	Question	Answer
193	Single Line diagram GRIDCO Price schedules Volume IIa General requirements	We have understood that the 6pcs 161kV Line Traps (Pos 2A.11.1 of the price schedules) shall be mounted on the terminal towers. Neither in the specification nor in the price scheduled we could find the required 6 pcs 161kV Coupling Capacitors (CVTs) which are needed to make the Line Traps working. Could you clarify?	See clarifications under item SI 81.
194	Single Line diagram GRIDCO Volume IIa General requirements	Kindly confirm that the 12 pcs 161kV Surge Arrester (Pos 2A.5.1 of the price schedules) shall be also mounted on the terminal towers?	Confirmed
195	Single Line ECG 34,5kV Technical data schedules	Kindly confirm rated current 2500A for the switchgear meaning busbar and coupler and sectionaliser.	The Busbar is rated 3000A while the Bus Coupler and Bus Sectionaliser are rated 2500A
196	Volume II a, Clauses 4.4.9 and 4.9.13	In our view Clauses 4.4.9 and 4.9.13 contradict each other as both relate to FAT tests, 4.4.9 refers to the US government webpage whereas 4.9.13 includes a daily allowance of 200 USD in addition to full payment of accommodation, meals and local transport. Could you please clarify this contradiction? The reference of the US webpage (https://aoprals.state.gov/web920/per_diem.asp) is not clear as several different daily allowances including accommodation etc. are listed for some cities, but not all concerned cities as places for FAT or training. The maximum per diem rate includes accommodation, transport and meals. Which rate shall apply if the city is not listed in a country list? In our view such daily allowance cannot apply as in deviation to that webpage the Contractor shall already arrange for a full cost reimbursement.	See clarifications under items SI 29 and SI 30.
197		As per Site Visit It was found that a lot of trees Existing in the Substation Location, Please Confirm that	See clarification under item SI 87.

SI	Ref	Question	Answer
		contractor scope of work will include removing of these trees or not.	
198		As per Site Visit It was found that a small house Existing in the Substation Location, Please Confirm that contractor scope of work will include removing of this house or not.	See clarification under item SI 86.
199		For the Drawing No. (PMC-5091019-BSP-KAS-E-101) it shows one building for STATCOM and also it is mentioned in the price schedule where no any details or specifications mentioned for this building, please provide details and specifications for this building.	See clarification under item SI 120.
200		During Site Visit It was found that Existing Tower 33KV related to ECG inside the location of the substation, please clarify what ever this tower will be dismantled or not, and its location will be changed and if so, this will be extra scope for cables and routing, please clarify. We propose to shift the location of the substation to avoid dismantling of this tower, please confirm.	Refer to Vol IIA, Section 3.2.6 Clause 8. Which requires relocation of the 33kV tower. **See clarification under item SI 149** where its indicated that the Bidder shall be free to optimize their designs on the whole substation land available. If after optimising the land, Bidder can avoid the relocation, it shall be accepted subject to review by the Engineer prior to construction activities.
201		As Per Site visit it was mentioned that regarding 33KV SWG. That the voltage transformers will be outside panels and it will be connected on the bus bar in Air as there is no location for new panels, please confirm.	**NOT CORRECT**; the voltage transformers shall be integral to the Indoor Switchgear but installed on top of the relevant panels. Creating different panels for the VTs shall not be accepted.
202		As Per Specifications of ECG it was mentioned that for Existing 33kV Substation fencing and releveling will take place but as per the site visit the existing 33 kV SS has fence and no need for releveling, so we believe that their this no scope of work required for the existing SS, please confirm.	See clarifications under items SI 36 and SI 37.
203		During site visit we found that non-connected existing 33 kV tower Related to ECG inside the location of the Substation. Please Confirm that contractor scope of work will include removing of this tower or not.	**NO**; the non-connected tower is outside of the substation boundary and shall not be relocated.

SI	Ref	Question	Answer
204		As per site visit it was mentioned that three Existing suspension towers will be dismantled and as per price schedule this item not shown, please clarify.	The Contractor's scope shall include the dismantling of existing 3x161kV towers and delivering them to GRIDCo Tema Storage Yard. This item has now been included in an updated Price Schedule that can be downloaded on the following link: http://bit.do/KasoaBSP
205		As per Specifications it was mentioned that for GRIDCO Scope of work for Communication System and SCADA For Remote END Connections ABB is required is that short list or other suppliers can be used, please clarify.	The Remote Ends are ABB and as such only matching ABB equipment shall be allowed to enable seamless communication integration.
206		As per Specifications it was mentioned that for ECG Scope of work for Communication System and SCADA For Remote END Connections GE is required is that short list or other suppliers can be used, please clarify.	The Remote Ends are GE and as such only matching GE equipment shall be allowed to enable seamless communication integration.
207		Reference Structural drawings & Arch. sections for all buildings.	This is a design-build project. As such, the Bidder shall come up with own designs for review and approval by the Engineer prior to construction activities. Provided drawings are only conceptual in nature.
208		Please clarify security house internal finishing.	Shall be same as control building.
209		Please clarify the length of the access roads length.	See price schedule downloadable at the Link provided in the IFB
210		The diesel generators mentioned in the tender specs Vol-IIA_SoW (1.5. Summary of Scope of Works). and not clear in tender drawings, so please clarify if it will be outdoor or indoor inside the building.	The diesel generators for both the GRIDCo and ECG sides shall be outdoor.
211		Please clarify Nearest Main road top level around the substations and the required finishing level for each substation compared with the Road level.	Refer to drawing PMC-5091019-BSP-KAS-C-102. For finishing level of substation see Vol. IID, Section 1.7.4.
212		Please clarify Nearest Main road top level around the substations and the required finishing level for each substation compared with the Road level.	See clarification under item SI 211.

SI	Ref	Question	Answer
213		General layout indicate that we have Converter control room & protection cooling system area and no arrangement or specs as a reference for the civil BOQ. add to that please provide Structural arch drawings. Please clarify	See clarifications under items SI 120 and SI 148. The STATCOM is going to be supplied as a complete unit as indicated in Item 2A.7.1 of Price schedule
214		The scope of work include includes backfilling, levelling and compaction of approximate land area 1800m2 adjacent to the existing ECG switching station with appropriate backfilling material and then fencing of entire land including existing switching station with land dimensions 52 m x 76 m approximately. please confirm	See clarifications under items SI 36 and SI 37.
215		Please clarify if existing ECG switching station need Stone pitching to the slopes and tops of embankment outside perimeter fence.	See clarifications under items SI 36 and SI 37.
216		According to the general layout No wire mesh fence around equipment. please confirm	See drawing PMC-5091019-BSP-KAS-C-E-104, Legends and Symbols.
217		Tender documents - price schedule - item desc. No.4.2.2.21 mentioned/ (provide Road network from community to substation Gate average width 7.5m including walkways and side drains. Approximate length = 200m). We understand that we shall provide access road to connect the substation with the existing main road, please confirm.	Confirmed; Also see clarifications under item SI 152.
218		It was found that the following drawing are missing: **Structural Drawings - GRIDCo Control Building** 1. G.A GIS Basement Plan 2. G.A. Foundation Plan 3. G.A. Ground Floor 4. G.A. First Floor 5. G.A Second Floor 6. G.A Roof Beams & Plan 7. G.A Typical Section	See clarification under item SI 207.

Sl	Ref	Question	Answer
		8. R.C Details Foundation Footings 9. R.C Details Columns 10. R.C Details Ground Beams and Floor 11. R.C Details Ramps to Ground Floor 12. R.C Details First Floor Beams 13. R.C Details Second Floor Beams 14. R.C Details Roof Beams 15. R.C Details First Floor Slab 16. R.C Details Second Floor Slab 17. R.C Details Staircase 18. Details for Roof Steel truss **Electrical - Gridco Control Building** 1. GIS Basement Plan Lighting and Switch Arrangement 2. Ground Floor Plan Lighting and Switch Arrangement 3. First Floor Plan Lighting and Switch Arrangement 4. Second Floor Plan Lighting and Switch Arrangement 5. GIS Basement Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement 6. Ground Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement 7. First Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement 8. Second Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement **Mechanical/Plumbing - GRIDCo Control Building**	

Sl	Ref	Question	Answer
		1. Ground Floor Plan, Hot and Cold-water installation 2. First Floor Plan Hot and Cold-water installation 3. Second Floor Plan Hot and Cold-water installation **Structural Drawings - ECG Control Building** 1. G.A. Basement & Foundation Plan 2. G.A Retaining Wall Plan 3. G.A. Ground Floor 4. G.A. First Floor 5. G.A Roof Beams & Plan 6. G.A Typical Section 7. R.C Details Basement & Foundation Footings 8. R.C Details Retaining Wall 9. R.C Details Columns 10. R.C Details Ground Beams and Floor 11. R.C Details Ramps to Ground Floor 12. R.C Details First Floor Beams 13. R.C Details Roof Beams 14. R.C Details First Floor Slab 15. R.C Details Second Floor Slab 16. R.C Details Staircase 17. Details for Roof Steel truss **Electrical - ECG Control Building** 1. Basement Plan Lighting and Switch Arrangement 2. Ground Floor Plan Lighting and Switch Arrangement 3. First Floor Plan Lighting and Switch Arrangement	

Sl	Ref	Question	Answer
		4. Basement Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement 5. Ground Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement 6. First Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement. **Mechanical/Plumbing - ECG Control Building** 1. Ground Floor Plan, Hot and Cold-water installation 2. First Floor Plan Hot and Cold-water installation **Structural Drawings - ECG & GRIDCo Security & Transit Quarters Buildings** 1. G.A Foundation plan 2. G.A Ground Floor 3. G.A Roof Plan 4. R.C Details Foundation Footings 5. R.C Details Columns 6. R.C Details Roof Beams 7. Details Roof Truss **Electrical - ECG & GRIDCo Control Building** 1. Ground Floor Plan Lighting and Switch Arrangement 2. Ground Floor Plan Power Signal and Lighting Protection systems Earthing Termination Arrangement **Mechanical/Plumbing - ECG & GRIDCo**	

SI	Ref	Question	Answer
		<u>Control Building</u> Ground Floor Plan, Hot and Cold-water installation	
219	Page 108	Bid Security: 20.6. The Bid Security of a JV or other association shall be in the name of the association that submits the Bid. If the association has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent referred to in ITB 12.2. In case of JV/association, is there a possibility of acceptance of more than one bid security if the sum of the bid securities equals the required amount as per ITB 20.1 (US$1,200,000) and each bid security bearing the name of the association that submits the bid or all future partners.	See clarification under item SI 147.
220		As per Clause, control of negative sequence component is requested, would you please provide "maximum continuous network voltage asymmetry"?	The STATCOM shall be designed to fulfil the conditions specified under Vol IIB, Section 4.9. Any additional network information shall be provided during detailed design stage.
221		A) What is the minimum continuous network voltage? B) Is there any transient frequency variation? I assume that 50 +-2.5% is steady state variation. C) What is the maximum and minimum network short term over voltages and corresponding duration?	Some System Design Parameters are provided in Vol IIB, Section 1.9.1. See clarification under item SI 220.
222		It is noted, that maximum and minimum 3-phase short circuit levels are same (19.5 kA). Please confirm if that's correct.	The minimum 3-phase short circuit level shall be 19.5 kA while the maximum 3-phase short circuit level shall be 40kA.

<table>
<tr><th>Sl</th><th>Ref</th><th>Question</th><th>Answer</th></tr>
<tr><td>223</td><td></td><td>Please note that the STATCOM communicates via a gateway that can be connected to a substation LAN and supports IEC 61850 and PRP.</td><td>Noted</td></tr>
<tr><td>224</td><td>Item 75.0 - GRIDCo & ECG Technical Data Schedules Final Page 177</td><td>TDS-BSP-KAS-GRIDCO-075: 13.8kV 50MVAR Static Synchronous Compensator (Statcom)
As per the TDS, “Type: 34.5kV” is mentioned, would you please clarify the meaning of” type” here.
Apart from above, as per TDS, Highest Voltage level is 14.4kV, which is below 34.5 kV.
As requested in our other query, STATCOM supplier is free to choose Nominal Continuous AC Voltage & Highest Continuous AC Voltage of the STATCOM bus (i.e. the secondary voltage of the STATCOM power transformer) in order to submit most competitive design and overall cost.
Kindly clarify and confirm.</td><td>Please change “Type” to Nominal Voltage.

The TDS gives proposed values, which have now been updated as below for items under clarification:

<table><tr><td>1.1</td><td>Nominal Voltage</td><td>kV</td><td>13.8 kV</td></tr><tr><td>1.2</td><td>Highest system voltage</td><td>kV</td><td>15.5 kV</td></tr></table>
The Optimal Secondary voltage, impedance & Vector group shall be selected by supplier from a detailed study that shall be subjected to review and approval by the Engineer prior to construction activities.</td></tr>
<tr><td>225</td><td></td><td>CCTV cameras for GRIDCo scope:

Discrepancy with technical specification "12.18.3 Kasoa substation" and design plans KAS-T-106/ T-107/ T-108/ T-109. Quantity of cameras doesn't match with CCTV camera layout plans. The second floor of Grid Co control building is presented in design files and is missing in the table 35.

Could you please clarify which documents should prevail (have higher priority) for Grid Co building & site CCTV system calculation in order to prepare the offer?</td><td>The Bidder shall Submit its Bid in line with requirements in design plans KAS-T-106/ T-107/ T-108/ T-109</td></tr>
<tr><td>226</td><td></td><td>CCVT cameras for ECG scope:

Discrepancy with technical specification “2.27.1</td><td></td></tr>
</table>

Sl	Ref	Question	Answer
		Security Monitoring with IP Enabled CCTV Cameras / Kasoa substation" and design plans KAS-T-205/ T-206/ T-207/ T-208. Quantity of cameras doesn't match with CCTV camera layout plans. No one PTZ outdoor and fixed outdoor cameras are presented on CGS Layouts for outdoor/ switchyard installation. Could you please clarify which documents should prevail (have higher priority) for ECG building CCTV system calculation in order to prepare the offer?	The Bidder shall Submit its Bid in line with requirements in design plans KAS-T-205/ T-206/ T-207 and T-208 for indoor CCTV cameras and T-109 for all outdoor CCTV cameras.
227		Telephone lines: The specification request is: Connection of four (4) telephone lines from the GRIDCo IP PBX to the ECG Substation as indicated below: - ECG Gatehouse (analog, desktop). - Control Room (analog, desktop) - SCADA Room (analog, wall mounted) - Office (analog, desktop) All telephone cables and other accessories required shall be provided by the Contractor. For the locations of the above telephone lines, see Drawing No. PMC-5091019-BSP-KAS-T-207.	Instead, refer to see Drawing Nos. PMC-5091019-BSP-KAS-T-209/ KAS-T-210 and KAS-T-211. Bidder shall note that the telephone lines from the GRIDCo IP PBX to the ECG Substation are over and above the telephone lines connected to the ECG/PDS IP PBX

Sl	Ref	Question	Answer
		Could you please clarify the site for these lines implementation?	
228		Mandatory spare parts. 5.Telecommunication Equipment: The technical specification for ECG scope of supply doesn't include DPLC, LMU, OLTE/MUX, PAX etc. All this equipment is included into Grid Co scope. Could you please confirm the elimination of Spare items for ECG scope in the price schedule (DPLC, LMU, OLTE/MUX, PAX)?	The Bidder shall Submit its Bid in line with requirements indicated on the List of Mandatory spare parts
229		Upgrade of installed base: The equipment installed at Mallam 161kV, Winneba 161 kV and Cape Coast 161kV are ABB FOX 515 with STM 1/4/16 aggregate capacity and ETL 600 with 12 kHz bandwidth capacity. The existing FOX 515 terminals cannot be upgraded because they have reached the end of their service lives (and therefore parts are not available). Therefore, four new FOX 615 terminals shall be provided for Mallam, Winneba, Cape Coast and Kasoa. Due to obsolesce and continuous development of new technologies, and in order to have a fair competition, could you please confirm that an alternative solution with multiplexer equipment & new NMS can be used (instead of FOX from ABB), provided that the supplier matches a state-of-the-art solution for Utilities with a clear list of	The Bidder shall Submit its Bid based on the equipment specified in the Employer's requirements, which are carefully selected to enable seamless integration of the substation in the GRIDCo network. The Bidder/contractor shall propose any changes of equipment during implementation. Any proposed change shall be subject to review and approval by the Engineer prior to construction activities.

SI	Ref	Question	Answer
		compliance to the specification?	
230		Technical specification consists of 2 types of Video cameras: Fixed Outdoor and Fixed Indoor cameras. Only one Technical Data Schedule is corresponding to Fixed camera. Could you confirm that we can use the same TDS for GRIDCo and for ECG for both Indoor & Outdoor types of cameras?	Confirmed
231		The list of TDS for CCTV system: 17.0. TDS-BSP-KAS-GRIDCO-017: INDOOR / OUTDOOR COLOUR VIDEO DOME CAMERA WITH PTZ 18.0. TDS-BSP-KAS-GRIDCO-018: COLOUR VIDEO DOME CAMERA 19.0. TDS-BSP-KAS-GRIDCO-019: COLOUR VIDEO FIXED CAMERA 20.0. TDS-BSP-KAS-GRIDCO-020: NETWORK VIDEO RECORDER, NVR 21.0. TDS-BSP-KAS-GRIDCO-021: PAN-TILT THERMAL CAMERA 22.0. TDS-BSP-KAS-GRIDCO-022: FIXED THERMAL CAMERA 23.0. TDS-BSP-KAS-GRIDCO-023: JUNCTION BOX 24.0. TDS-BSP-KAS-GRIDCO-024: COMMUNICATION HUB FOR THERMAL	The Bidder shall Submit its Bid based on the CCTV equipment specified in the Employer's requirements. The Bidder/contractor shall propose any changes of equipment during implementation. Any proposed changes shall be subject to review and approval by the Engineer prior to construction activities.

Sl	Ref	Question	Answer
		CAMERAS 25.0. TDS-BSP-KAS-GRIDCO-025: SOFTWARE FOR THERMAL CAMERAS 26.0. TDS-BSP-KAS-GRIDCO-026: IMAGING PROCESS CONTROLLER FOR THERMAL CAMERAS Due to obsolesce and continuous development of new technologies, and in order to have a fair competition, could you confirm that an alternative CCTV solution can be offered, provided that this is a state-of-the-art design and technology matching most of the specification with a clear list of compliance to the specification?	
232	Vol-IIB	12.2.1.10 IP PBX Features: The IP PBX shall be provided with the features as specified in the Technical Data Schedule of the IP Private Branch Exchange. Kindly provide the referenced TDS-table of IP Private Branch Exchange in dedicated specification files.	A Technical Data Sheet for the IP PBX can be downloaded from the following Link: http://bit.do/KasoaBSP
233	Vol-IIB	Current Transformer (rated nominal primary current) Please confirm the acceptance of 3000A as nominal current	The Rated Primary Current shall be **3000/2400/2000/1200**
234	Chapter 15, 305	15.1.11.1 Type Tests The circuit breakers offered shall have been fully type tested in accordance with IEC 60056 and IEC	Confirmed; New Type Tests will be carried out according to IEC-62271. However, Type Tests carried out according to IEC-60056

Sl	Ref	Question	Answer
		60694. Full type test certificate shall be submitted. Kindly confirm type test according IEC-62271-100	and IEC-60694 within the validity period as per Employer's requirements will be accepted.
235	Clause 3.24 & Clause 5.2.1.3 and 5.2.2.3 Vol-IIB_& Vol IIA-SOW	There is a discrepancy between the training requirement in the clauses described. Kindly clarify the training program, duration and number of staff to be trained.	The Training shall be Ten (10) people for a duration of 7 working days and covering all the items listed in Clause 5.2.1.3 of Vol IIA and Clause 3.24 of Vol IIB
236	Vol-IIB_GRIDCo Specifications_Final_11.06.2019	We have noted a discrepancy on Current transformers ratios, please confirm that secondary winding 1A is acceptable	The Secondary rating of Current Transformers shall be 5A. 1A shall not be accepted.
237	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf	To control high voltage circuit breaker and isolating switches, only control through discrepancy switch (rotary 90° type turn-push) on control panel and no mosaic control will be provided as mentioned on §6.4	Rotary type switches designed for mounting on duplex or mosaic panel (mimic) boards shall be included with the Bid. Final design shall be discussed with the Employer to agree if mosaic control shall be replaced.
238	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf chapters 2.7 and 4.9.7.2	Evaluation of losses of 161/13.8kV STATCOM Transformer: STATCOM transformer losses are taken into account on STATCOM System losses calculated in 4.9.8.1. Could you confirm that Chapter 2.7 is applicable only for 161/34.5kV Power Transformer?	Confirmed
239	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf chapter 4.9.8.1	(3.27.9.7 through 3.27.9.13): It seems to be a typing error. Could you confirm if we have to replace (3.27.9.7 through 3.27.9.13) by (4.9.7.1 through 4.9.8)	Confirmed
240	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf chapter 4.10.1.2	STATCOM Reliability performance: It seems to be a typing error. Could you confirm if we have to replace "e) If the actual performance is different from the values stated in 3.27.10.2 a) and 3.27.10.2 b), the supplier should provide corrections and modifications to meet the availability guarantees at no extra cost to the user."	Correct, please replace

SI	Ref	Question	Answer
		by e) If the actual performance is different from the values stated in 4.10.1.2 a) and 4.10.1.2 b), the supplier should provide corrections and modifications to meet the availability guarantees at no extra cost to the user."	
241	Vol-IID_Employer's requirement-specifications for civil works-§1.18.2 Fencing	The Boundary fence shall be made of concrete blocks and reinforced concrete columns (spaced 3m according to the Price schedule), Could you, please precise the height of this fence	Refer to Drawing No. PMC-5091019-BSP-KAS-C-108
242	Vol-IID_Employer's requirement-specifications for civil works-§2.18.2 Fencing	Internal steel fencing shall be 1,8m in height with steel posts set at 2,4m spacing. The drawing N°: PMC-5091019-BSP-KAS-C-109 shows that height is 2,4m with steel posts spacing 2,52m. Please confirm the right values to be considered	Use details as per drawing No. PMC-5091019-BSP-KAS-C-109. The 1.80m height is the height of the panel. Details shall be discussed with the Engineer prior to construction.
243	Vol-IID_Employer's requirement-specifications for civil works-§1.15 Water Supply, and §2.10 Water Supply	For the water supply, it is mentioned in the § 1.15 an overhead water tank, 5000l, must be supplied, however in the §2.10 it is mentioned that : *the system shall consist of a 0,5m3 header tank supplied, if necessary, from a 5,0 m3 ground level tank by electric pump and connected to a borehole to be constructed by the contractor*. Please clarify the scope of the water supply	Refer to Section 1.14 of Vol. IID
244	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf	§6.12.1: Please give details of: "panel simplex type"?	Bidder shall provide Simplex type panels. Simplex type panels have one door per each panel as opposed to duplex type panels with two doors per panel
245	Schedule 2A- GRIDCo Supply	34.5/0.433kV, 500kVA 3ph outdoor grounding auxiliary transformers required with mounted surge arrestors. It seems supply of surge arrester on the grounding transformer is not applicable and not represented on the SLD (PMC-5091019-BSP-KAS-E-102 rev.2)	Correct; Surge arrester on the 34.5/0.433kV, 500kVA 3ph outdoor grounding transformer is not applicable
246	PMC-50910119-BSP-KAS-E-202 rev.2	Panels 1, 12, 31: There is no fuse on Earthing transformer connection. ECG Scope of work from specification IIA mention a fuse. Could you confirm that we have to integrate a fuse?	No fuse on Earthing transformer connection shall be required since a full panel with complete protection is utilized
247	PMC-50910119-BSP-KAS-E-202	Panels 29: There is no fuse on Auxiliary	No fuse on Auxiliary transformer connection shall be

SI	Ref	Question	Answer
	rev.2	transformer connection. ECG Scope of work from specification IIA mention a fuse. Could you confirm that we have to integrate a fuse?	required since a full panel with complete protection is utilized
248	Vol-IIC_ECG Specifications_Final_11.06.2019.pdf	p.46 (Bus transfer Current (BTC) switching): According to IEC 62271-102 BTC switching capability is applied to disconnectors >52kV. Please confirm that BTC switching is not required.	Bidder shall comply with this requirement.
249	Vol-IIC_ECG Specifications_Final_11.06.2019.pdf	p.46 (Bus-charging Current (BCC) switching): According to IEC 62271-102 BCC switching capability is normally applied to disconnectors >300kV. Please confirm that BCC switching is not required.	Bidder shall comply with this requirement.
250	Vol-IIC_ECG Specifications_Final_11.06.2019.pdf	p.31 "The Contractor shall guarantee the maximum gas losses of equal to or less than 0.5% per year until the release of the Maintenance Security. Each refilling which becomes necessary due to excessive gas losses or a gas alarm within during such period, the Contractor will be penalized at a rate of USD 3200/failure". Could you specify when the maintenance security release is planned to occur?	The maintenance security release is planned to occur at the end of the defects liability period.
251	GRIDCO and ECG Technical Data Schedules Final	Technical data sheet for GRIDCo Diesel Generator is missing	Use the Technical parameters as per ECG Diesel generator, except that you keep the respective ratings
252	Vol-IIA_SoW _ General Requirements_Final_11.06.2019	p32 - item 13): Diesel generator is 250kVA is SoW while it is required to be 500kVA in PMC-5091019-BSP-KAS-E-105 rev.3 and in GRIDCo specification §17. Could you confirm that a 500kVA Diesel Generator is required?	Confirmed
253	Schedule 2A- GRIDCo Supply Spare parts Item 3.10	161 kV CVT single pole, 161/√3/0.115/√3, with carrier current accessories but without steel support structures is required as spare part when no CVT as main equipments are to provided according the Price schedule and not represented on the SLD (PMC-5091019-BSP-KAS-E-102 rev.2). Please to clarify. Supply of CVT or only Coupling filter as noted in Item 2A.10.1 of Schedule 2A- GRIDCo.	. The Bidder shall supply the 161 kV CVT single pole, 161/√3/0.115/√3, with carrier current accessories but without steel support structures as spare part.
254	PMC-5091019-BSP-KAS-T-104	Supply of OPGW between JB1 & JB2 is not	See clarifications under item SI 140.

Sl	Ref	Question	Answer
		mentioned in Vol IIA page 39/40. However, drawing of tender documentation shows differently. Please confirm detailed scope of supply	
255	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf	Page 231 "The SDH add and drop multiplexer (ADM) provided shall support a STM-64/16/4/1 (10Gbps, 2.5Gbps/622.08 Mbps/155Mbps) aggregate rate" Please confirm that STM-64 is required? as a matter of fact, the equipment of the existing telecom back bone (FOX 615) does not support STM-64 rate	We confirm that STM-64 is required. The Contractor shall come up with a fully integrated solution during implementation for review and approval by the Engineer prior to construction activities.
256	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf	§14.3 "The DC systems shall be designed to allow unloading tests, boost charging and maintenance of each battery half" to be carried out during normal operation." What do you mean by "each battery half"?	The Battery banks shall be fully duplicated and maintenance of one bank shall be possible while the other remains in service.
257	Vol-IIB_GRIDCo Specifications_Final_11.06.2019.pdf	§14.4.2 Please confirm miniature circuit breaker are allowed with rated current lower than 63A?	Bidder shall comply with the values stated in the Employer's requirements
258	Vol-IIC_ECG Specifications_Final_11.06.2019.pdf	Could you clarify the difference between ECG SCADA control center and NMS? And who is the manufacturer for ECG control center and NMS?	The ECG Network Management System (NMS) is used for the monitoring and control of the IP Communications network while the SCADA control center is used for the control of the Power network. ECG SCADA is manufactured by GE.
259	Vol-IIA_SoW _ General Requirements_Final_11.06.2019.pdf	"Design, supply, installation, programming, testing and commissioning of modern Busbar Protection System complete with all accessories at Mallam BSP to replace the existing Busbar protection system as per requirements of this Volume IIA and IIB (including all appendices), and as deemed necessary and as required by the Engineer,". Could you give us more information regarding this topic especially space available, communication protocol,...) because no information available in volume IIA and IIB?	The Bidder is encouraged to make a visit at Mallam substation and make its own assessments. Bidders should contact the Procurement Agent to facilitate additional visits if required.
260	PMC-50991019-BSP-KAS-E-204A	C6 connection to Winneba BSP is planned on tower KA-WN01. But there is note on drawing that this tower should be removed. Moreover, the	Tower KA-WN01 will be relocated to a new position before construction to make way for construction. When the substation is ready, the new Tower KA-WN01 will be

Sl	Ref	Question	Answer
		existing ECG line between KA-WN01 & KA-WN02 is on the footprint of planned ECG GIS33kV Building. Could you confirm expected scope on work in ECG Winneba line connection?	connected to the new substation.
261	Kasoa BSP-Price Schedule-Final_11.06.2019	Sheet Schedule 2A- GRIDCo Supply - Line 10.18: A specialized vehicle with 100T crane is required. This request is not mentioned in scope of work or GRIDCo spec. Is this vehicle required? If yes could you be more specific on your request?	A specialized vehicle with 100T crane is required; Bidder shall include this in the scope of his supply.
262	Vol-IIB_GRIDCo Specifications_Final_11.06.2019, Chapter 4, 4.9.6 Audible Noise	What are the local noise requirements in dB (A)?	Please refer to Section 4.12.4 of Vol IIA as well as the ESIA report, which is attached with the Bidding Document.
263	Section III: Qualification & Evaluation Criteria Clause 3.8 Technical Evaluation Criteria	The referred clause says that bidder shall provide sufficient evidence to demonstrate that it has adequate experience in the design, supply and construction of at least Two (2) outdoor GIS substations with a rating of 132kV and above within the last ten (10) years. *We kindly request you to modify the referred clause as Bidder shall provide "Evidence to demonstrate it has adequate experience in the design, Supply and Construction of at least One (1) Outdoor GIS Substation with a rating of 132kV and above within last ten (10) years" instead of Two Numbers due to limited implementation of such outdoor GIS projects.*	The Bidder must satisfy the mandatory requirement to demonstrate sufficient experience in the design, supply and construction of at least Two (2) GIS substations with a rating of 132kV and above within the last ten (10) years.

Sl	Ref	Question	Answer
264	IFB 5.6 – Conflict of Interest	In case of participating as a main bidder (or JV/Consortium) and a subcontractor to other company (i.e. competitor) simultaneously for main equipment like transformer, Circuit breaker. Please clarify it is considered or recognized violations of the "conflict of interest rules".	The MCC Program Procurement Guidelines include the following requirements, among others: (i) open, fair, and competitive procedures must be used in a transparent manner to solicit, award and administer contracts and to procure goods, works and services" Essentially, the underlying premise is that the bidding processes must be open, competitive and transparent. It is therefore imperative that none of the Bidders has an unfair advantage over the other Bidders. In the instance where a Bidder bids for a procurement and wants to be a sub-contractor to another Bidder or wants to purchase equipment from a competitor, that will not be deemed to be a conflict of interest.
265	Vol-IIB_GRIDCo Specifications_Final_11.06.2019, Chapter 14.9.5.2 34.5 kV Drive Mechanism	The Drive Mechanism for the 34.5 kV Disconnect Switches shall be Manually operated without provision for being motor operated. Please confirm.	Both 34.5 kV Disconnect with and without earthing Switches shall have both **Motor and Manual** operated Mechanism.