

Dominica Geothermal Development Company Limited

CONCERNING TENDER DOCUMENTS

FOR

DESIGN, SUPPLY, AND INSTALLATION

PROCUREMENT OF

- (i) New 2.2kV/11kV/33kV/69kV Substations and**
- (ii) New 11kV/33kV/69kV OHL and UGC**
Transmission Lines
(Geothermal Power Plant to Fond Cole)

REFERENCE: DM-DGDC-384816-CW-RFB

[Response to Bidders' Questions](#)

Response No. 12

March 8, 2024

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
192	RFB - PART I (Bidding Procedures) and III (Conditions of Contract and Contract Forms) DGDC - Final Section III Key Personnel Requirement Page 55 of 388 Section VII - Employer's Requirements Contractor's Representative and Key Personnel Page 210 of 388	The Key personnel requirement for the Project is defined in Section III Clause No 1.3 "Contractor's Representative and other Key Personnel". However, in "Section VII - Employer's Requirements" in Clause Name "Contractor's Representative and Key Personnel" the key personnel requirements are again defined. We understand that Key personnel requirement defined in Section III Clause No 1.3 "Contractor's Representative and other Key Personnel" shall be followed and evaluated during bid evaluation. Accordingly, bidder has to submit Form PER-1 & Form PER-2 in line with the requirement of Section III Clause No 1.3. Please confirm our understanding.	Section III Clause 3.1 represents qualification criteria. The bidder is required to submit Form PER -1 and Form PER-2, in line with the instructions on those forms.	Updated Contractor's Representative and other Key Personnel for Section III and Section VII – 6 March 2024  Adobe Acrobat Document	Addendum No. 8, Item No. 15 and Item No. 20
193	PART 2 - EMPLOYER'S REQUIREMENTS (UGC) Clause-10.2 AND Addendum-03 Annex A2-8 11kV XLPE Cable GTP	<u>Short Circuit rating for 11kV, 3Cx185sqmm Aluminium conductor cable for UGC package:</u> a) Employer requested to confirm short circuit rating (17.5 or 25kA or 17.39kA) for 11kV three core Aluminum cable for UGC package.	Short circuit rating of 17.39kA (1s) instead of 17.5kA (1s) for the 11kV 3Cx185sqmm Aluminum conductor. The value is amended in the updated revision of Employer's Requirement for UGC (Clause 10.2 and Annex A2-8).	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 1

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		b) Also confirm cable cross section size (185sqmm to be considered as mentioned in Annex A2-8 or to be considered as per short circuit requirement) for 11kV three core Aluminum cable for UGC package. Following description reference for above query, 1. Annex A2-8 11kV XLPE Cable Guaranteed Technical Data: Mentions short circuit rating as 25kA. 2. Addendum-3: -> Sr no-2- Mentions "The specified cables shall be designed to meet a 25kA (1s) earth fault duties for 11kV level." -> Sr No-5- Mentions "Rated short circuit current (1s): Conductor 17.5kA" for Annex A2-8 11kV XLPE Cable Guaranteed Technical Data. 3. It is to be noted that, actual short circuit rating for 11kV 3Cx185sqmm Aluminium conductor cable is 17.39kA and not 17.5kA.			
194	PART 2 - EMPLOYER'S REQUIREMENTS (Substation) Annex A2-17 33 kV Metal Clad	<u>SI No-9: Rated peak withstand current:</u> As per GTP, Rated peak withstand current requirement mentioned is	Rated peak withstand current value of 62.5kA for Circuit breakers	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 2

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
	Switchgear Guaranteed Technical Data	80kA against 25kA short circuit rating of CB. However, as per IEC 62271-1_Table-5, Rated peak withstand current is 2.5 times of short circuit rating of CB (which is 62.5kA against 25kA short circuit rating CB). Employer requested to confirm requirement of Rated peak withstand current is 80kA or as per IEC 62271-1_Table-5 (which id 62.5kA).			
195	PART 2 - EMPLOYER'S REQUIREMENTS (Substation) Annex A2-17 33 kV Metal Clad Switchgear Guaranteed Technical Data	<u>CIRCUIT BREAKER: SI NO-2</u> As per GTP & technical specification, requirement of 33kV & 11kV CB is SF6 type. Employer requested to confirm for acceptance of VCB type CB for 11kV & 33kV switchgear.	33kV and 11kV Circuit Breakers should be of SF6 type.	None	None
196	PART 2 - EMPLOYER'S REQUIREMENTS (Substation) Annex A2-18 11 kV Metal Clad Switchgear Guaranteed Technical Data	<u>DISCONNECTOR: SI NO-5 :</u> Rated lightning impulse withstand as per GTP, requirement of Rated lightning impulse withstand voltage common value is 85kV, which differ from IEC 62271-1_Table-1 as 75kV. Employer requested to confirm requirement of 85kV or 75kV.	75kV as Rated lightning impulse withstand for disconnecter.	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 3

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
197	PART 2 - EMPLOYER'S REQUIREMENTS (Substation) Substation SLD and GTP	<u>Disconnecter with earth switch at busbar Side for all outgoing and incoming feeders along with bus coupler for 33kV & 11kV Switchgear:</u> As per all three substation SLD and MV switchgear GTP, Disconnector with earth switch at busbar Side is shown for all outgoing and incoming feeders along with bus coupler for 33kV & 11kV Switchgear. Employers requested to confirm requirement of same.	Earthing switches for disconnectors at busbar will not be required. Please refer to new substations SLD in attachment.	Annex A3-2 - DGDC-EL-TRAF-SLD-001 03-03-2024 Annex A3-5 - DGDC-EL-PADU-SLD-001 03-03-2024 Annex A3-8 - DGDC-EL-FC-SLD-001 03-03-2024 PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 4, N°5 and N°19
198	Section VII - Employer's Requirements, Page no. 211 of 390	<u>Contractor's Representative and Key Personnel</u> All our recommended personnel have adequate expertise of project	No change. Note: This does not impact qualification but is a factor in technical scoring of bids.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		management from their robust experience of working in relevant international projects in various countries for projects funded by multilateral banks. Hence, we request removal of “Formal training in project management tools and techniques and / or Project Management Professional (PMP) certification as well as Professional Engineering Registration” to be deleted from clauses under Section VII-Employer’s Requirements – Contractor’s requirements and key personnel.			
199	Section VIII - General conditions of contract 27. Defect Liability 248,293,350 of 390	<u>Extended defect liability</u> We request to amend this clause as follows: The critical components covered under the extended defect liability are Transformers, GIS switchgear and 11kV & 33kV metal-clad switchgears, and the period shall be 12 months the date of Operational Acceptance of facilities.	The period of 24 months will be maintained.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
200	PART II SECTION B PARTICULAR REQUIREMENTS clause no. 1	<u>Kmz file</u> We refer the PART II SECTION B PARTICULAR REQUIREMENTS clause no. 1, the co-ordinates of the route are provided, however the google kmz file is missing , kindly provide us the same.	See Response to Bidders' Questions, Response No. 4, Item No. 27 dated January 10, 2024	None	None
201	Clarification no.3	<u>Right of way</u> We understand that Employer is responsible for the compensation to the land owners within the ROW corridor and the approach roads. Please confirm our understanding is correct.	See Response to Bidders' Questions, Response No. 3, Item No. 12 dated December 19, 2023	None	None
202	PCC 8.1 & 8.2	<u>Completion period</u> The project completion schedule represents 30 months, whereas the PCC 8.1 and 8.2 represents. The Partial Completion Time for the Fond Cole Substation and the associated 33kV UGC and OHL is 18 (eighteen) months, which we feel that a very short period considering the difficult terrain hence request you to please consider the complete project completion period as 30 months.	See Response to Bidders' Questions, Response No. 4, Item No. 61 dated January 10, 2024		

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
203	69KV6SG01, 02 and 03	<u>Transmission line Price schedule - stringing</u> The stringing of conductor and opgw mentioned as 4.8 km, whereas stringing of shield wire mentioned as 2.781kms, please clarify.	See Response No. 9, Item No. 172 of February 26, 2024	None	None
204	69KVSC0301	<u>Transmission line Price schedule - Lidar survey</u> The detailed survey is mentioned as to be done with LIDAR survey, can we propose the DGPS survey method or it is mandatory of doing survey with LIDAR. Also please provide us the list of contractors who are approved by DGDC for doing the LIDAR survey	(a) See Response to Bidders' Questions, Response No. 9 Item No. 105 dated February 26, 2024 (b) DGDC does not have a list of pre-approved contractors for LIDAR Survey	None	None
205	69KV1FO01	<u>Transmission line Price schedule</u> The description mentioned as: " Foundation for one pole of a Type A guyed suspension tower", here both pole and towers mentioned , we understand that the complete scope is of Poles only and NOT the lattice towers , please confirm our understanding is correct.	Correct. There are no lattice towers used, only monopole structures / towers.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
206	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Paragraph 3 of Page VII-52 under Clause no. 6.3 i.e. Design and construction requirements</u> As per the tender clause, d.c. resistance at 20 deg.C of conductor shall be equal or smaller to 0.11 Ohm/Km as per IEC : 60228, please note that as per IEC : 60228, the max. d.c. resistance of conductor at 20 deg.C shall be 0.125 Ohm/Km for the 69 kV 1C X 240 Sq.mm Al cable. Kindly review and confirm.	For 69kV 1C x 240mm ² , please consider a max value of 0.125 Ohm/Km for DC resistance of conductor at 20°C	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 6
207	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Corrugated Aluminium Sheath clause at Page VII- 53 under the Clause no. 6.3 i.e. Design and construction requirements</u> Please let us know the short circuit rating of the corrugated Al sheath with duration for the 69 kV 1C X 240 Sq.mm Al cable.	Short circuit rating of the 69kV 1C x 240mm ² corrugated Al sheath should be 10kA/1sec as indicated in Annex A2-1.	None	None
208	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Insulation clause at Page VII-52 under the Clause no. 6.3 i.e. Design and construction requirements , Paragraph 4 of Page VII-56 under Clause no. 6.4 i.e. Testing & Annex A2-1 69kV XLPE Cable Guaranteed Technical Data</u>	The contractor should fill the Guaranteed Technical Data table with the adequate value of electrical stress at insulation and conductor screen for 69kV, 33kV and 11kV as per IEC standards and without being less than the minimum indicated thickness.	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 7

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		In clause number 6.3 (Page VII-52) of the technical specification, nominal insulation thickness is specified as 9.0 mm & Min. 8.1 mm, whereas, as per the s.no.17-2 of the data sheet (Annex A2-1) , minimum insulation thickness shall be 9.0 mm. The electrical stress values specified at clause 6.4 (Page VII-56) are 8.0 KV/mm (at conductor screen) & 4.0 KV/mm (at insulation), whereas, in the s.no.1- 1 & 1-2 of the data sheet (Annex A2-1), stress values are specified as 3.9 KV/mm at conductor screen & 1.6 KV/mm at insulation. Kindly clarify whether we have to consider the stress values as per the clause 6.4 (Page VII-56) or as per the s.no.1-1 & 1-2 of the data sheet (Annex A2-1). Further, please note that if we consider U0 : 39.8 kV as the voltage grade of the required 69kV cable , then for meeting the stress values as per the data sheet (at conductor screen 3.9 KV/mm & at insulation 1.6 KV/mm), the insulation thickness will be 17.0 mm (Nominal).	Employer's Requirement for UGC is updated accordingly.		

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
209	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Paragraph 3 of Page VII-72 & Armour clause at Page VII-75 under the Clause no. 8.3 Design and construction requirements</u> In clause number 8.3 (Page VII-72) of the technical specification, armour material is specified as galvanized steel strips wires, whereas, armour clause at Page VII-75 calls for the requirement of steel tape armour. Hence, we request you to kindly clarify the type of armouring is to be considered.	The requested armour material is galvanized steel tapes as indicated in Guaranteed Technical Data table for 33kV and 11kV cables. Sections 8.3 and 10.3 was amended.	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 18
210	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Paragraph 1 of Page VII-72 under the Clause no.8.2 Service conditions</u> At Page VII-72 it is mentioned that "the specified cables shall be designed to meet a 25 KA (3s) earth fault duties for 33 KV level", we presume that this is for system not for cable. Kindly confirm. For your information, please note that the short circuit current capacity of the 240 Sq.mm conductor is 19.8 KA for 3 seconds. Kindly confirm	Please refer to Addendum No. 3, Item No. 2 where it is indicated that "The specified cables shall be designed to meet a 25kA (1s) earth fault duties for 33kV level".	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
211	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Metallic screen clause at Page VII-74 under the Clause no. 8.3 Design and construction requirements & Annex A2-5 33kV XLPE Cable Guaranteed Technical Data</u> In clause 8.3 (Page VII-74) of the technical specification, Cu screen area is specified as 35 Sq.mm, whereas, at s.no. 12-2 in the data sheet for 33 kV 3C X 240 Sq.mm Cu cable, the required screen short circuit rating is mentioned as 10 KA for 1 second which can not be met by the 35 Sq.mm area. Hence, we request you to kindly clarify whether we have to consider the Cu screen area as per the clause 8.3 or we have to consider the value mentioned in the data sheet. Further, please also confirm that these values are for all the three cores combined.	As indicated in section 8.3 and Guaranteed Technical data table the minimum thickness for metallic Cu screen should not be less than an equivalent total cross section of 35mm ² , means to reach the required screen short circuit rating of 10kA the contractor should calculate/provide the required thickness of Cu screen to reach 10kA for one core.	None	None
212	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Outer Sheath clause at Page VII-75 under the Clause no. 8.3 Design and construction requirements</u> In clause 8.3 (Page VII-75) of the technical specification, the minimum bending radius is specified as 10 D. Please note that for HV cables the	Bending radius should be 15xD as indicated in Guaranteed technical data Annexes A2-1, A2-5 and A2-8. Section 8.3 was amended.	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 18

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		minimum bending radius will be 15 D as per the IEC standard, where D stands for overall diameter of cable.			
213	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Cable drawing at Page VII-34 & Annex A2-5 33kV XLPE Cable Guaranteed Technical Data</u> In the cable drawing at page VII-34, the filler material is specified as non-hygroscopic Polyethylene, whereas, at s.no. 20 in the data sheet for 33 kV 3C X 240 Sq.mm Cu cable, the filler material is mentioned as EPR/PP. However, we will consider PP filler material. Kindly confirm.	As indicated in section 8.3 the filler material should be non-hygroscopic, easy to be removed and good flexibility material, suitable for the operating temperature and compatible with the insulating material (to be mentioned with the offer such as (EPR) or (PP)).	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 8
214	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Paragraph 3 of Page VII-92 & Armour clause at Page VII-95 under the Clause no. 10.3 Design and construction requirements</u> In clause number 10.3 (Page VII-92) of the technical specification, armour material is specified as galvanized steel strips wires, whereas, armour clause at Page VII-95 calls for the requirement of steel tape armour. Hence, we request you to kindly	The requested armour material is galvanized steel tapes as indicated in Guaranteed Technical Data table for 11kV cable and in section 10.3.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		clarify the type of armouring is to be considered.			
215	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Paragraph 1 of Page VII-92 under the Clause no.10.2 Service conditions</u> At Page VII-92 it is mentioned that "the specified cables shall be designed to meet a 25 KA (3s) earth fault duties for 33 KV level", we presume that this is for system not for cable. Kindly confirm. For your information, please note that the short circuit current capacity of the 185 Sq.mm conductor is 10.0 KA for 3 seconds. Kindly confirm.	Please see Response to Bidders' Questions, Response No. 12, Item No. 193 <i>(this document)</i>	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 1
216	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Metallic screen clause at Page VII-94 under the Clause no. 10.3 Design and construction requirements & Annex A2-8 11kV XLPE Cable Guaranteed Technical Data</u> As per the clause 10.3 (Page VII-94) of the technical specification, a combination of Copper wires with Copper counter spiral tape shall be applied over the non- metallic insulation screen. The minimum	As indicated in section 10.3 and Guaranteed Technical data table the minimum thickness for metallic Cu screen should not be less than 0.05mm means to reach the required screen short circuit rating of 10kA the contractor should calculate/provide the required thickness of Cu screen to reach 10kA for one core.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		thickness of metallic screen shall be 0.05 mm, whereas, at s.no. 12-2 in the data sheet for 11 kV 3C X 185 sq.mm Al cable, the required screen short circuit rating is mentioned as 10 KA for 1 second. Hence, we request you to kindly confirm that we have to consider the suitable Cu screen area to meet the value mentioned in the data sheet. Further, please also confirm that this value is for all the three cores combined.			
217	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Annex A2-8 11kV XLPE Cable Guaranteed Technical Data</u> At s.no. 12-1 in the data sheet for 11 kV 3C X 185 sq.mm Al cable, the short circuit rating of conductor is specified as 25 KA for 1 second, but please note that the short circuit current capacity of 185 Sq.mm Al conductor will be 17.4 KA for 1 second. Please review & confirm.	Please see Response to Bidders' Questions, Response No. 12, Item No. 193 (<i>this document</i>)	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 1
218	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Outer Sheath clause at Page VII-95 under the Clause no. 10.3 Design and construction requirements</u> In clause 10.3 (Page VII-95) of the technical specification, the minimum bending radius is specified as 10 D.	Utilize values of 15xD for bending radius as indicated in Guaranteed technical data Annexes A2-1, A2-5 and A2-8. Section 10.3 was amended.	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 18

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		Please note that for HV cables the minimum bending radius will be 15 D as per the IEC standard, where D stands for overall diameter of cable. Please confirm.			
219	PART 2 - EMPLOYER'S REQUIREMENTS UNDERGROUND CABLES (UGC)	<u>Cable drawing at Page VII-42 & Annex A2-8 11kV XLPE Cable Guaranteed Technical Data</u> In the cable drawing at page VII-42, the filler material is specified as non-hygroscopic Polyethylene, whereas, at s.no. 20 in the data sheet for 11 kV 3C X 185 sq.mm Al cable, the filler material is mentioned as EPR/PP. However, we will consider PP filler material. Kindly confirm.	As indicated in section 10.3 the filler material should be non-hygroscopic, easy to be removed and good flexibility material, suitable for the operating temperature and compatible with the insulating material (to be mentioned with the offer such as (EPR) or (PP)).	PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC) V3 06-03-2024	Addendum No 8, Item No. 8
220	Technical specification - Part-2 (Substation) Clause 15.1 Design requirements Annex A2-11 11kV Neutral Earthing System Guaranteed Technical Data	<u>11/0.4kV Earthing Transformer</u> In specification & Technical data sheets, Short time rating, continuous rating and impedance are specified for earthing transformer. Please confirm that these ratings are applicable for earthing transformers in all substations.	These values are indicative and are subject to a confirmation during design phase	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
221	Technical specification - Part-2 (Substation) Clause 14.13 Cable Boxes (Air insulated type)	<u>Auxiliary/earthing transformer</u> We understand that for both HV and LV side cable box to be considered. Please confirm requirement of Surge Arrester on HV side of these transformers, as SA is not indicated either in switchgear panel OR LT transformer side. Please clarify.	Yes, Surge arresters are required in all transformers HV side.	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 17
222	Technical specification - Part-2 (Substation) Clause 3.1.2, 3.2.2, 3.3.2 Scope of Supply	<u>Fire protection</u> We understand that any fire protection for Power Transformer are not envisaged such as Nitrogen Injection Fire Protection System OR water spray fire protection system. Please confirm.	No specific fire protection system for power transformers. Only Fire Alarm system is requested for control building as indicated in section "19. Fire Alarm System"	None	None
223	Technical specification - Part-2 (Substation) Clause 25.2 Mains protections solutions	<u>33kV Protection For OG feeders</u> As per scope of works, Differential protection is to be provided for 33kV OG feeders at Fond Cole substation. Bidder can offer any make of differential relay for 33kV OG feeder. We understand that supply and integration of differential relay at remote end is not part of scope of works.	At Fond Cole Substation the only outgoing 33kV feeder is going to Padu Substation. The contractor will be also responsible for the provision of the same differential protection relay on the opposite side of that feeder in Padu SS.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
224	Annex A2-17 33 kV Metal Clad Switchgear Guaranteed Technical Data Annex A2-18 11 kV Metal Clad Switchgear Guaranteed Technical Data	<u>33kV & 11kV Switchgear</u> We understand for 33kV & 11kV switchgear panels, all ratings shall be considered as per technical data sheet. Please confirm.	Yes, however all technical specifications for Switchgear components should be confirmed during design study phase.	None	None
225	Technical specification - Part-2 (Substation) Clause 25.2 Mains protections solutions, Clause - 22. Telecommunication Network, Clause - 20. Substation Control and Monitoring System (SCMS)	<u>Integration in National and Regional control center</u> We understand that for Control/Protection, Telecommunication System, present scope of works is limited to substation end systems for all substations. Any integration or modification works in National and/or regional control centers is not part of scope. Please confirm.	Yes, new substations should be ready for integration in future National Control Center. Tests for remote control and supervision will be done by simulating a remote NCC. However, we requested to have a remote Engineering Workstation at Fond Cole with some functionalities as specified in section "23. Remote Engineering Workstation"	None	None
226	Price Schedule - FOND COLE S4 Price Schedule - PADU S4 Price Schedule - TRAFALGAR S4	<u>Civil works</u> In price schedules, quantities for all civil works are indicated except for a few. We understand that during execution, billing/payment shall be	Since this is a Lump sum contract on turnkey project, please the quantities provided are indicative and unit prices may be used to estimate and changes under GCC 39.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
	Price Schedule - LAUDAT S4	done as per actual civil volumes without any limit. Please confirm.			
227	Price Schedule - FOND COLE S4 Price Schedule - PADU S4 Price Schedule - TRAFALGAR S4 Price Schedule - LAUDAT S4 DGDC-Geotechnical-Report-Revision-21.12.23-Final	<u>Foundation types</u> As per price schedule quantities and Geotechnical report received with clarifications, we understand that any pile/micropiles are not envisaged for any foundation works. All foundations shall be open type foundations suitable for soil data. Please confirm.	Confirmed	None	None
228	Price Schedule FOND COLE SUB S1 Sr. 2.1 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>69kV Cable termination kits</u> We understand that 69kV cable termination kits for 66/11kV Transformer bay only in scope of works. Cable Termination kits for Line bays is not part of Substation scope. Please confirm our understanding.	As described in section 3.3.2, the contractor should supply and install all cable terminations with all accessories for links inside substations (69/11kV, 33/11kV, 11/0.4kV and earthing transformers), link from new 11kV switchgear till the existing 11kV switchgear at Fond Cole power plant For 69kV line and 33kV feeder coming from Geothermal and Padu please refer to "PART II SECTION B PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC)" sections "3.1.2: Scope of supply" and "3.1.3: Scope of	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
			construction works” for 69kV UGC and sections “3.2.2: Scope of supply” and “3.2.3: Scope of construction works” for 33kV UGC .		
229	Price Schedule FOND COLE SUB S1 Sr. 2.1 Technical specification - Part-2 (Substation) Clause 3.3.4.2 Electrical design - HV switchgear	<u>69kV GIS Cable termination kits</u> In 69kV Transformer Bay module, Cable termination kits are not mentioned. Further under price schedule Sr. 2.1, only Transformer end cable terminations (3 Nos) are indicated. Please confirm where GIS end termination kits to be included. Please review and amend price schedule/scope accordingly.	Item 2.1 in Fond Cole Price Schedules refers only to the special outdoor cable termination with integrated surge arresters for 69/11kV transformer. All other cable termination kits are specified with their corresponding cable link in items 6.1 to 6.7 in the same Price Schedules.	None	None
230	Price Schedule FOND COLE SUB S1 Sr. 5.8 Technical specification - Part-2 (Substation) Clause 3.3.2Scope of Supply	<u>Interface with existing 11kV Switchgear</u> Please elaborate scope of works at existing 11kV switchgear feeder which is to be used to link new 11kV switchgear.	As described in section 3.3.2, “ Repurposing of an existing 11 kV cell to connect existing 11kV busbar to the new 11kV switchgear busbar including all necessary protection relay, accessories, LV wiring adaptation and any other necessary equipment.” There is one spare 11kV cabinet, with CB and disconnector, already connected to the existing 11kV switchgear. It is up to the contractor whether he supplies a new cabinet and install it as extension or repurpose the spare cabinet: - Supply and install of a new protection relay	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 16

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
			- Supply and install of a new CT with new ratio for evacuation of a max of 15MW production to the new 11kV switchgear - LV adaptation - Cable termination kit - Any other necessary equipment to finalize properly the commissioning and operation of this link.		
231	Technical specification - Part-2 (Substation) Clause 3.3.4.2 Electrical design - Protection system	<u>Energy metering</u> As per scope energy metering is mentioned only for MV feeders and AC auxiliary source. Please confirm whether energy metering requirement for 69kV Bays. Further we understand that only one energy meters is to be considered for each feeder. Please confirm.	Yes, only one energy meter has to be provided for each feeder and bay. It is also required to install energy meters for 69kV bays as indicated in section "20.8.1 Description of the 69kV Control system"	None	None
232	Price Schedule FOND COLE SUB S1 Sr. 6.2 to 6.7 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>33kV & 11kV Cable and Terminations</u> As per scope of works and price schedule, we understand that 33kV & 11kV cables and terminations for outgoing feeders is not part of substation scope. Please confirm.	Please refer to the responses to question N°228 of this same document (Questions Clarifications Response N°12)	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
233	Price Schedule FOND COLE SUB S1 Sr. 6.7 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>11kV Cable for New & existing switchgear Link</u> Please confirm route length for 11kV cable between New 11kV Switchgear and existing 11kV switchgear.	Route length of the 11kV link between existing and new 11kV switchgear in Fond Cole site will depend on the contractor cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 100m in any case.	None	None
234	Price Schedule FOND COLE SUB S1 Sr. 4.1 to 4.3 and 5.1 to 5.8 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>33kV & 11kV Switchgear</u> We understand that control, protection & metering for 33kV & 11kV switchgear shall be installed in LV compartment of individual switchgear panel. Separate control and protection panel is not required. Please confirm.	Yes, however separate control and protection panels are required for 69/11kV and 33/11kV transformers as indicated in section 20.8.1 and 20.8.2	None	None
235	Price Schedule FOND COLE SUB S1 Sr. 11.1 to 11.4 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>69kV Control & protection panel</u> We understand that all control, protection and metering IEDs can be accommodated in single panel for 69kV bay CRP. Separate panels for control and protection are not envisaged. Please confirm.	As indicated in section "20.8.1 Description of the 69kV Control system" and in Fond Cole Price Schedules, separate control and protection panels are requested.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
236	Technical specification - Part-2 (Substation) Clause 25.2 Mains protections solutions	<u>69kV Protection at Geothermal substation</u> As per scope of works, Differential protection is to be provided for 69kV Line Bay at Fond Cole substation. For Line differential protection, at both end same make of differential relay to be installed. Please confirm details of existing differential protection relay at Geothermal substation bay which will be used to link with Fond Cole.	Geothermal substation will be a new substation. The design phase has just started.	None	None
237	Technical specification - Part-2 (Substation) Clause 25.2 Mains protections solutions	<u>69kV Busbar protection</u> We understand that 69kV Busbar protection shall be Numerical low impedance centralised type. Please confirm.	The 69kV busbar Protection could be centralized or distributed type.	None	None
238	Technical specification - Part-2 (Substation) Clause 3.3.4.2 Electrical design - HV switchgear Annex A2-1: 69kV GIS Double Busbar Guaranteed Technical Data	<u>69kV GIS Busbar</u> We understand that Busbar rating shall be 2000A inline with Bus Coupler Bay CB rating. Double Busbar to be considered as per SLD. In scope of works, single busbar with 1250A rating is mentiond. Please confirm.	The busbar rating is 1250A and coupler bay should be 1250A as indicated in section 3.3.4.2. The corresponding annexes are updated accordingly in the new revision of Particular Requirement for Substations.	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 9

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
239	Annex A2-5: 69kV GIS Voltage transformers Guaranteed Technical Data	<u>69kV VT</u> We understand that 69kV VT for Busbar and Bays shall be with cores viz. one for metering and other for protection. Please confirm.	69kV VT should have two secondaries: one for protection and one for measurement as indicated in Annex A2-5	None	None
240	Technical specification - Part-2 (Substation) Clause 3.3.4.2 Electrical design - HV switchgear Annex A2-1: 69kV GIS Double Busbar Guaranteed Technical Data Single Line Diagram	<u>69kV GIS CT</u> As per SLD, three cores has been shown for 69kV Transformer bay. However as per scope of works and Techical data sheet, 4 core CT to be considered. We understand that Technical data sheet to be followed for CT configuration. Please confirm.	Yes, 4 core CT for 69kV Transformer bay as indicated in Guaranteed Technical Data. SLD is updated accordingly.	Annex A3-8 - DGDC-EL-FC-SLD-001 03-03-2024	Addendum No 8, Item No. 10
241	Technical specification - Part-2 (Substation) Clause 6.4 Design Requirements	<u>69kV GIS LCC</u> Please confirm whether LCC to be considered as stand-alone panels near each bay OR LCC panel mounted on GIS Bay itself can be accepted. Please confirm.	LCC panels should be as stand-alone panels near each GIS bay	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
242	Single Line Diagram - DGDC-EL-FC-SLD-001	<u>Surge Arrester</u> As per single line diagram, Surge Arresters are not part of 69kV, 33kV & 11kV GIS/AIS switchgear / panels. All Surge arresters required shall be outdoor type as indicated in Single Line Diagram.	Yes, surge arresters should be outdoor type.	None	None
243	Technical specification - Part-2 (Substation) Clause - 22. Telecommunication Network	<u>Telecommunication Systems</u> In Fond Cole substation, one line bay shall be linked with existing Geothermal substation. Please confirm make of existing telecommunication system at Geothermal substation. Further we understand that scope includes telecommunication system at Fond Cole substation only. Any modification/integration works at Geothermal substation telecommunication system is not in scope. Please confirm.	Geothermal substation will be a new substation. The design phase has just started. Any works related to Geothermal substation are out of contractor scope of works.	None	None
244	Price Schedule FOND COLE S1 - Sr.13.1 Technical specification - Part-2 (Substation) Clause	<u>FO Approach cable</u> As per price schedule and scope, 48 Fibre FO approach cable is to be installed between substation ODF and power plant ODF. Please confirm route length between substation and	Route length of the FO link between new Fond Cole substation and Fond Cole power plant will depend on the contractor cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 100m in any case.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
	3.3.2 Scope of Supply	power plant ODF, as power plant ODF location is not known and may vary considerably.			
245	Price Schedule PADU S1 Sr. 3.1 Technical specification - Part-2 (Substation) Clause 3.2.2 Scope of Supply	<u>Interface with existing 11kV Switchgear</u> Please elaborate scope of works at existing 11kV switchgear feeder which is to be used to link new 11kV switchgear.	As indicated in section 3.2.2, repurposing of two existing 11kV cabinets used actually as outgoing feeder to become incoming feeders for the new 33/11kV power transformer. All cabinets equipment will be kept: CB, DS, CT. The installed protection relay is SEL 351-A. The contractor will have to achieve a LV adaptation and any other necessary equipment to finalize properly the commissioning and operation of this link.	None	None
	Technical specification - Part-2 (Substation) Clause 3.2.4.2 Electrical design - Protection system	<u>Energy metering</u> As per scope energy metering is mentioned for all MV feeders and AC auxiliary source. We understand that only one energy meters is to be considered for each feeder. Please confirm.	Yes confirmed	None	None
246	Price Schedule PADU SUB S1 Sr. 4.1 to 4.4 Technical specification - Part-2 (Substation) Clause 3.2.2 Scope of Supply	<u>33kV & 11kV Cable and Terminations</u> As per scope of works and price schedule, we understand that 33kV & 11kV cables and terminations for outgoing feeders is not part of substation scope. Please confirm.	As described in section 3.2.2, the contractor should supply and install all cable terminations with all accessories for links inside substations (33/11kV, 33/0.4kV and earthing transformers), links from new 33/11kV transformers till the existing 11kV switchgear at Padu power plant. For 33kV feeders coming from Fond Cole and Trafalgar please refer to "PART II SECTION B	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
			PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC)" section "3.2.2: Scope of supply" and section "3.2.3: Scope of construction works"		
247	Price Schedule PADU SUB S1 Sr. 4.4 Technical specification - Part-2 (Substation) Clause 3.3.2 Scope of Supply	<u>11kV Cable for Transformer & existing switchgear Link</u> Please confirm route length for 11kV cable between 33/11kV Transformer and existing 11kV switchgear.	Route length of the 11kV link between existing 11kV cabinets and new 33/11kV transformers will depend on the contractor transformers location and cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 50m in any case.	None	None
248	Price Schedule PADU SUB S1 Sr. 2.1 to 2.5 Technical specification - Part-2 (Substation) Clause 3.2.2 Scope of Supply	<u>33kV Switchgear</u> We understand that control, protection & metering for 33kV switchgear shall be installed in LV compartment of individual switchgear panel. Separate control and protection panel is not required. Please confirm.	Yes, however separate control and protection panels are required for 33/11kV transformers as indicated in section 20.8.2	None	None
249	Price Schedule PADU S1 - Sr.13.1 Technical specification - Part-2 (Substation) Clause 3.2.2 Scope of Supply	<u>FO Approach cable</u> As per price schedule and scope, 48 Fibre FO approach cable is to be installed between substation ODF and power plant ODF. Please confirm route length between substation and power plant ODF, as power plant ODF	Route length of the FO link between new Padu substation and existing Padu power plant will depend on the contractor cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 50m in any case.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		location is not known and may vary considerably.			
250	Technical specification - Part-2 (Substation) Clause 3.1.2 Scope of Supply	<u>Interface with existing 2.2kV Switchgear</u> Please elaborate scope of works at existing 2.2kV switchgear feeder which is to be used to link new 33/2.2kV Transformer.	As indicated in section 3.1.2, a repurposing of two existing 2.2kV cabinets used actually as incoming feeders for the existing 11/2.2kV power transformer. All cabinets' equipment will be kept: DS, CT. The contractor will have to achieve a LV adaptation and any other necessary equipment to finalize properly the commissioning and operation of this link.	None	None
251	Technical specification - Part-2 (Substation) Clause 3.1.4.2 Electrical design - Protection system	<u>Energy metering</u> As per scope energy metering is mentioned for all MV feeders and AC auxiliary source. We understand that only one energy meters is to be considered for each feeder. Please confirm.	Yes confirmed	None	None
252	Price Schedule TRAFALGAR SUB S1 Sr. 3.1 to 3.3 Technical specification - Part-2 (Substation) Clause 3.1.2 Scope of Supply	<u>33kV & 2.2kV Cable and Terminations</u> As per scope of works and price schedule, we understand that 33kV & 2.2kV cables and terminations for outgoing feeders is not part of substation scope. Please confirm.	As described in section 3.1.2, the contractor should supply and install all cable terminations with all accessories for links inside substations (33/2.2kV and 33/0.4kV transformers), links from new 33/2.2kV transformers till the existing 2.2kV switchgear at Trafalgar power plant and also for all 33kV UGC feeders (substation side). For 33kV feeders coming from Geothermal and Padu please refer to "PART II SECTION B	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
			PARTICULAR REQUIREMENTS UNDERGROUND CABLES (UGC)" section "3.2.2: Scope of supply" and section "3.2.3: Scope of construction works".		
253	Price Schedule TRAFALGAR SUB S1 Sr. 3.3 Technical specification - Part-2 (Substation) Clause 3.1.2 Scope of Supply	<u>2.2kV Cable for Transformer & existing switchgear Link</u> Please confirm route length for 2.2kV cable between 33/2.2kV Transformer and existing 2.2kV switchgear.	Route length of the 2.2kV link between existing 2.2kV cabinets and new 33/2.2kV transformers will depend on the contractor transformers location and cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 50m in any case.	None	None
254	Price Schedule TRAFALGAR SUB S1 Sr. 2.1 to 2.5 Technical specification - Part-2 (Substation) Clause 3.1.2 Scope of Supply	<u>33kV Switchgear</u> We understand that control, protection & metering for 33kV switchgear shall be installed in LV compartment of individual switchgear panel. Separate control and protection panel is not required. Please confirm.	Yes, however separate control and protection panels are required for 33/2.2kV transformers as indicated in section 20.8.2	None	None
255	Price Schedule TRAFALGAR S1 - Sr.13.1 Technical specification - Part-2 (Substation) Clause 3.1.2 Scope of Supply	<u>FO Approach cable</u> As per price schedule and scope, 48 Fibre FO approach cable is to be installed between substation ODF and power plant ODF. Please confirm route length between substation and power plant ODF, as power plant ODF	Route length of the FO link between new Trafalgar substation and existing Trafalgar power plant will depend on the contractor cable ducts design. Contractor should estimate approximately the distance using given layout annexes which will not be greater than 50m in any case.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		location is not known and may vary considerably.			
256	Price Schedule LAUDAT SUB S1 Sr. 1.1 Technical specification - Part-2 (Substation) Clause 3.4.2 Scope of Supply	<u>11kV Switchgear interface</u> As per scope of works, New differential relay is to be provided in existing switchgear identical to relay at remote end substation i.e. Geothermal. Please confirm Line differential relay make at Geothermal substation panel. Also we understand that, in present scope any works in Geothermal substation is not envisaged. Please confirm.	Geothermal substation will be a new substation. The design phase has just started. We cannot confirm at this stage the differential relay type	None	None
257	Price Schedule LAUDAT SUB S1 Sr. 1.2 Technical specification - Part-2 (Substation) Clause 3.4.2 Scope of Supply	<u>MV Current Transformer</u> Please clarify scope related to current transformer in existing switchgear panel. Please provide drawings and technical data for existing switchgear panel in which modification works in involved.	The contractor should supply new CT with adequate ratio (existing CT is 200/5-5A 15VA 5P20 & cl0.5). The existing 11kV switchgear is AREVA T&D PIX-17	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
258	Price Schedule FOND COLE SUB S4	<u>Missing description</u> Row no. 57, Description is mentioned '/'. Please correct the description of this item.	This item is related to “ Waterproofing of the roof”	FOND COLE SUB Price Schedule_03-03-2024	Addendum No 8, Item No. 11
259	Section VII - Employer's Requirements	<u>Contractor's Representative and Key Personnel</u> 'Relevant academic qualifications and technical experience' asks for ' Professional Engineering (PE) registration'. We request you to please delete this requirement and accept experience of B.E/B.Tech Engineers since PE registration is not prevalent in may countries and B.E/B.Tech itself is considered as valid professtional engineering degree.	No change. Note: This does not impact qualification but is a factor in technical scoring of bids.	None	None
260	Technical specification - Part-2 (Substation) Clause 20.9 Automatic Event Data Collection System	<u>Centralised Event Recorder system</u> As per specification, existing centralised event recorder system installed at FOND COLE is with SEL make equipment. Specification also states that this system can accept data from Non-SEL relays. Please confirm whether bidder can consider any make of relays apart from SEL for eg, GE, Siemens, Hitachi, NR etc which is compliant with IEC61850 protocol.	The proposed protection relays must be compliant with IEC standards and requested specifications. It should be compliant with the existing centralised event recorder as requested in section “20.9 Automatic Event Data Collection System” The contractor should supply the necessary equipment to allow communication between this existing system and the new protection relays.	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		Further please also confirm scope of works at centralised event recorder system installed at FOND COLE.			
261	Technical specification - Part-2 (Substation) Clause 10.3 Circuit Breakers, 11.3 Circuit Breakers	<u>33kV & 11kV AIS Switchgear Panel - Circuit Breakers</u> As per specification, 33kV & 11kV CB has been mentioned as SF6 type and withdrawable type. Kindly note that SF6 CB shall be fixed type. Please confirm whether VCB type breaker can be offered instead of SF6 type which will be withdrawable type. Please confirm.	33kV and 11kV circuit breakers should be SF6 type. Withdrawable SF6 CB are available from many manufacturers.	None	None
262	Technical specification - Part-2 (Substation) Section 6. GIS , Clause - 6.4.2 General Design and safety requirement	<u>LCC Panel</u> We understand that, as per specification, standalone type LCC (Local Control Panel) shall be considered for each bay. Further Bay Control Unit shall be installed in Control & Protection panel for each bay and not in LCC panel. Please confirm.	For 69kV GIS, the standalone LCC will replace the control panel (as long as it contains all equipment as listed in section 20.8.1 Description of 69kV Control System).	None	None
263	Technical Data Sheet - Annex A2-3: 69kV GIS Disconnecter Switch and earth Switch Guaranteed Technical Data	<u>GIS Disconnecter and Earthing switch</u> In Guaranteed Technical Data, Operating duty cycle of O - 0.3sec – CO - 3min – CO is mentioned for Disconnecter and earthing switch. Kindly note that this operating duty cycle shall be only applicable for	Removed in the new version of Particular Requirement for Substation	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 03-03-2024	Addendum No 8, Item No. 12

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		Circuit Breaker and not for Disconnecter/Eath Switch. Please review and amend TDS accordingly.			
264	Technical specification - Part-2 (Substation) Section 6. GIS	<u>Surge Arrester</u> From Single Line Diagram, scope of works and technical specifications, we understand that Surge arrester is not required at GIS bay end. AIS type surge arrester shall be provided at Transformer and Line end only. Please confirm.	Yes confirmed	None	None
265	Technical specification - Part-2 (Substation) Section 6. GIS	<u>High Speed Earthing Switch</u> Please confirm requirement of High speed earthing switch for Transformer bay. Also please confirm that High Speed earth switch shall be motorised type.	Yes confirmed	None	None
266	Technical specification - Part-2 (Substation) Section 8. 69kV Outdoor Surge Arresters	<u>Surge Arrester</u> Please confirm whether Surge arrester can be considered with either porcelain OR polymer type.	Yes confirmed	None	None
267	Technical Data Sheet - Annex A2-4: 69kV GIS Current transformers Guaranteed Technical Data	<u>GIS CT</u> As per Guaranteed Technical Data, One minute power frequency withstand voltage between secondary Terminal & earth is mentioned as 5kV.	Updated in the new version of Particular Requirement for Substation	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 13

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
		However as per IEC same shall be 3kV. Please review and confirm.			
268	Technical specification - Part-2 (Substation) Section 9. XLPE Cables , Clause - 9.2 Medium Voltage XLPE Cables	<u>MV Cables</u> For medium voltage cables, as per standard longitudinal and radial water blocking can be provided . Please confirm if vertical watertight screen mentioned in technical specifications refers to the radial watertight screen for which Poly-Al sheath can be provided.	Yes confirmed. Vertical watertight is same as radial watertight	None	None
269	Technical specification - Part-2 (Substation) Section 26. Power and control cables, bus ducts, Clause - 26.2 Low voltage cables	<u>LV cables</u> In clause 26.2 of LV cables specifications for Low voltage cables, requirement for solid round copper conductor is stated. However, solid conductor can be provided only upto 6 sqmm. size for copper conductor. Please confirm whether stranded conductor can be provided for cables above 6 sqmm.	LC cables with stranded conductor will be accepted too. Updated in the new version of Particular Requirement for Substation	PART II SECTION B PARTICULAR REQUIREMENTS SUBSTATIONS (SUB) V3 06-03-2024	Addendum No 8, Item No. 14
270	Technical specification - Part-2 (Substation) Section 9. XLPE Cables	<u>HV & MV cables</u> We understand that all 69kV, 33kV, 11kV & 2.2kV cables shall be armoured type. Please confirm our understanding.	Yes, in accordance with Guaranteed technical data	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
271	Technical specification - Part-2 (Substation) Clause 9.1.6 69kV Cable Accessories, Clause14.12 Bushings and Terminals	<u>Minimum Creepage Distance</u> As per specification clause under reference, specific creepage distance of 31.5 mm/kV, pollution level IV conforming and tested to IEC 60815 has been mentioned. As per IEC standard creepage shall be 31mm/kV (instead of 31.5mm/kV). Please confirm creepage distance of 31mm/kV can be considered for all bushings and insulators for all substations. You are requested to update Technical data sheets accordingly.	The value of 31.5mm/kV will be maintained	None	None
272	Price Schedule FOND COLE SUB S4, PADU SUB S4, TRAFALGAR SUB S4	<u>Reinforcement Steel</u> In price schedule, quantity for only concrete is provided. Quantity for reinforcement steel are not mentioned. Please review and update price schedules with reinforcement steel quantities.	The cost of reinforcement is encompassed within the concrete price specified in the schedule.	None	None
273	Technical specification - Part-2 Section VII. Client Requirements-Page 81 under Clause no 1.2.2 i.e. Electrical characteristics	<u>Electrical characteristics</u> As per the tender clause, voltage grade is mentioned U0 : 50 KV, Um : 123 KV & U : 90 KV. that means voltage grade will be 50/90 (123) KV whereas as per IEC : 60840 voltage grade will be 64/110 (123) KV, please review & confirm.	Reference is not clear	None	None

NO.	RFB Ref.	Question or Comment	Owner's Response	Attachment	Supporting Clarification or Addendum
274	Technical specification - Part-2 Section VII. Client Requirements-Page 82 clause 1.2.3.1 Driver (Conductor)	<u>Driver (Conductor)</u> Conductor will be water tight or not? Please review & confirm.	Please consider specification in the Guaranteed technical data	None	None
275	Technical specification - Part-2 Section VII. Client Requirements-Page 82 clause 1.2.3.5 Metal screen	<u>Metal screen</u> As per the tender clause "The metal screen will be for the aluminum base offering" is mentioned against the metallic sheath so please confirm type of metallic sheath as well as short circuit rating of the corrugated metallic sheath with duration.	Please consider specification in the Guaranteed technical data	None	None
276	Technical specification - Part-2 Section VII. Client Requirements-Page 83 clause 1.2.3.6 External sheath	<u>External sheath</u> Please confirm the outer sheath is with graphite coating or extruded semi-conducting layer, with outer sheath colour.	Please consider specification in the Guaranteed technical data	None	None