



MEGHALAYA POWER GENERATION CORPORATION LIMITED
OFFICE OF THE CHIEF ENGINEER (GENERATION),
LUMJINGSHAI, SHORT ROUND ROAD,
MePGCL, SHILLONG.

CIN: U40101ML2009SGC008392 Email: cegen.meecl@gmail.com ☎ : 0364 2591415

No: MePGCL/CE:GEN/T-133(Pt-II)/2022-23/131

Dated: 18th May, 2022

To

1. M/s BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR- HYDRO BUSINESS GROUP
9th Floor, Plot No. C-20/1A/1 Joy Towers, Sector-62, Noida 201301 (UP)
Phone 0120-674 8069, 8254 8231
Email: prastogi@bhel.in; gopal@bhel.in; sachin.tanwar@bhel.in
2. M/s Voith Hydro Private Limited,
A-20 &21, Sector 59,Noida- 201 301, U.P, India.
Email: Vikas.Mohan@voith.com
3. M/s Andritz Hydro Private Limited,
D-17, MPAKVN, Industrial Area, District Raisen, Near Bhopal – 462 046,
Mandideep, Madhya Pradesh, India.
Email: neelav.de@andritz.com

Sub: Rehabilitation of Electro Mechanical Equipment (Package-1) for Renovation and Modernization of Umiam-Umtru Stage-III Hydroelectric Power Station of Pre Bid Queries Replies -Reg

Sir,

With reference to the above, please find enclosed herewith the Replies to the Pre-Bid Queries of Electro Mechanical Equipment (Package-1) for Renovation and Modernization of Umiam-Umtru Stage-III Hydroelectric Power Station for your information and necessary action.

Encl: As stated

Yours Faithfully

(M.Marbariang)
Chief Engineer (Generation)
MePGCL, Shillong
Dated: 18th May, 2022

Memo No: MePGCL/CE:GEN/T-133(Pt-II)/2022-23/131 (a)

Copy to:

1. The Director (Generation) MePGCL, Shillong for your kind information.
2. The Chief Engineer (C), HP&HC, MePGCL, Shillong.
3. The Superintending Engineer GC-I, MePGCL, Umiam.
4. The Executive Engineer (MIS), MeECL, Shillong with a request to upload the documents in www.meecl.nic.in websites. A soft copy of the same is attached herewith.
5. Shri L.Shilla, Rodic Consultant Pvt Ltd Shillong.

SLC

Chief Engineer (Generation)

2x30 MW Renovation and Modernization of Umiam-Umtru Stage III Hydroelectric Power Station of M/s MePGCL-
PREBID QUERIES (Additional Queries)

Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
1	I of II Section-II (BDS)	10	22.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: Original Power of Attorney (legally valid) authorizing the signatory of the bid to commit for the bidder, signed by their legally authorized representative(s).	1. The format of Power of Attorney is not available in tender document. We understand that Bidder is to submit Power of Attorney in their own format. 2. We understand that Power of attorney has to be Notarized. Kindly confirm.	As per bid document.	We submit that there is no format of Power of Attorney available in the tender. We understand that bidder is to submit Power of Attorney in their own format. Please confirm our understanding.	Yes
2	I of II Section-VIII	84	PC 13	Performance Security	Please specify validity period of Performance Security.	Details are provided in the bid document	We understand that initial validity of performance Security shall be Time for Completion + 12 Months.	Details are provided in the bid document
3	I of II Section-II	84	PC 13.3.3	The Performance Security shall not be reduced on the date of the Operational Acceptance.	Kindly review the requirement and issue amendment.	The bid document is final and no modification will be entertained	We submit that there are discrepancies in the referred clause. We request MePGCL to kindly review and arrange to modify the clause accordingly.	No Review
4	I of II Section-IX	109	Contract Forms	Performance Security Form - Bank Guarantee This guarantee shall be reduced by half upon our receipt of: (a) a copy of the Operational Acceptance Certificate; or				

				(b) a registered letter from the Applicant (i) attaching a copy of its notice requesting issuance of the Operational Acceptance Certificate...				
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SI. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
5	I of II Appendix-5	103	-	Appendix 5. List of Major Items of Plant and Installation Services and List of Approved Sub-contractors	<p>1) As a central PSU, BHEL procures equipment from vendors who are approved by BHEL through an internal process. These vendors are selected by BHEL through a rigorous evaluation process. BHEL proposes to procure BOP packages and other equipment / material from the standard vendor list of BHEL.</p> <p>Further BHEL procures equipment / material through an established tendering procedure. As the supply of E&M works will involve a large number of items, vendor approval for all items will not be practical and will delay the process of procurement / execution.</p> <p>We therefore request you to agree for procurement of</p>	Irrelevant query, as it is a request to M/s. NHPC	It is a typographical error. Kindly read MePGCL instead of NHPC in the last line and arrange to provide reply to our query.	You are to provide the list as required in the Bidding document

				<p>equipment / material from our standard vendor list.</p> <p>2) We submit that according to recent directives from the Government of India, procurements shall be done through Government E-market place (GeM) portal and all procurements by BHEL (a CPSU) of value below Rs. 200 Crs. shall be made from Indian supplier. Also, for purchase from vendor from abroad (outside India), approval is required from Govt. of India for each case. Also as per Make in India Policy, procurement is to be done from Indian Class-1 supplier. Accordingly, the vendors/ subcontractors shall be dealt during execution based on policy/ guidelines of Govt. of India.</p> <p>We request M/s NHPC to kindly accept and confirm above.</p>			
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SI. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
6	I of II Appendix-1	91	-	TERMS OF PAYMENT Schedule No. 1. Plant and Equipment Supplied from Abroad. Schedule No. 2. Plant and Equipment Supplied from within the Employer's Country. Schedule No. 3. Design Services Schedule No. 4. Installation Services	We submit that no payment procedure is available for Schedule No. 2 & 3 in subject tender. Kindly provide.	As per bid document	We request MePGCL to kindly arrange to provide details of relevant clause in tender specification.	Please refer Bidding document
	I of II Appendix-1	92	-	Payment Procedure: 2.1.1. For advance payment of 10% of the CIP amount of plant and equipment including Goods and Services Tax 2.1.5. For advance payment of 10% of the total installation services amount:				
7	General	-	-	Compensation to contractor in case of delay in project for reasons not attributable to contractor.	We request M/s MePGCL to provide provision to compensate contractor (i.e. Idling Time Cost Claims) in view of delays in execution of contract from original	The bid document is final and no modification will be entertained	In case there is a delay in execution of project due to reasons not attributable to contractor, then for the extended time of completion of project, MePGCL shall arrange to provide for compensation in the contract. Kindly share modalities/documents in this regard.	Please refer Bidding document

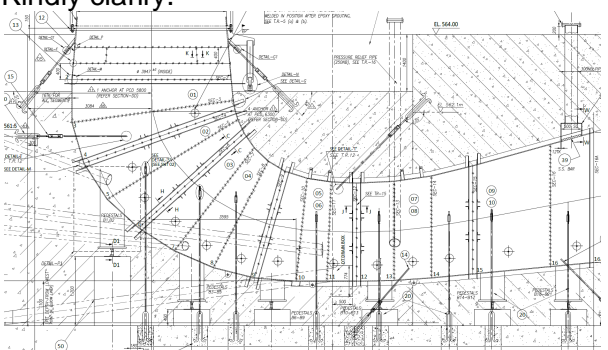
					completion period. This provision is available in other E&M Tender floated by other utilities (i.e. NHPC).			
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8	II of II Section-VI	23	S.19	Control and Protection System The existing Control and Protection System for 132KV feeders and bus coupler shall be completely replaced by the contractor with newly designed system as per relevant standards and latest technology with provision of local control switches for operation at Switchyard Control Room.	i. We understand that control & protection panels of other bays (except feeders and bus coupler) is not scope of this tender. Please confirm. ii. We understand that local back up control panel is required for feeder and bus coupler bay at switchyard control room. Please confirm.	As per the bid document	i) Noted. ii) We understand that local control switches for operation required as per specification is Local Back-up Control Panel. Please confirm.	(ii).As per relevant standards and latest technology with provision of local control switches for operation at Switchyard Control Room.
9	II of II Section-VI	24	S.20.2 (d)	S.20.2. CT, PT, LA: d) Support structures: As per requirement	We understand that existing structure shall be used for replaced equipment. Any new structure is not required. Please confirm.	As per the bid document	We understand that structures in good condition can be reused for replaced equipment by the bidder. Please confirm.	Please refer Clause G.1 in page 25
10	II of II Section-VI	24	S.20.2 (e)	S.20.2. CT, PT, LA: e) Conductors and accessories: As per requirement	Kindly clarify the scope of conductor. We assume that existing conductor shall be used. Please confirm. If any conductor is to be replaced then clarify the scope and provide the type of conductor required.	The bidder should visit site and obtain the data, as per the bid document	Site visit has been done by BHEL officials for the project, however, desired inputs were not available. You are requested to clarify the scope of conductor. We understand that available conductor is in good condition and same can be reused by the bidder. Please confirm.	

SI. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
11	II of II Section-VI	24	S.20.3	S.20.3. Two-stage Lift:	<p>i. We understand that two lifts are required to reach switchyard. Kindly confirm.</p> <p>ii. Kindly specify the level difference between power house and switchyard or specify the lifting height of lift.</p> <p>iii. Kindly specify the number of persons to be lifted at a time.</p> <p>iv. Kindly provide the detailed specification of lift.</p>	The bidder should visit site and obtain the data, as per the bid document.	<p>Site visit has been done by BHEL officials for the project, however, desired inputs were not provided/available at site.</p> <p>Hence we request MePGCL to furnish inputs/confirmation as requested in BHEL's query.</p>	<p>i) Only one</p> <p>ii) Around 50 metres</p> <p>iii) 10 persons</p> <p>iv) Nil</p>
12	II of II Section-VI	24	S.22	<p>S.22. Other Parts, Devices and their Accessories</p> <p>600V Power cables for low voltage</p> <p>Control cables</p>	<p>i. We understand that existing cable shall be used for switchyard. Replacement of existing cable is not required. Please confirm.</p> <p>ii. Also we assume that any trench work is not in scope of bidder. Please confirm.</p>	The bid document is final and no modification will be entertained.	<p>Kindly refer to relevant clause/s in the tender document.</p> <p>We understand that cables are in good condition and same can be reused by the bidder. Please confirm.</p>	Please refer clause G1 Para 3 Cables are to be replaced as per Clause 2.10 of Page 8 (Volume-II of II)
13	II of II Section-VI	26	G.6	<p>G.6. Drawings Provided by MePGCL</p> <p>The Drawings included in the Bidding Documents are representative of the scope of the</p>	<p>Kindly provide the following drawing:</p> <p>i. Overall plot plan.</p> <p>ii. Single line diagram of 132/33kV switchyard.</p> <p>iii. Layout and section drawing of 132/33kV Switchyard.</p>	The bidder should visit site and obtain the data, as per the bid document.	<p>Site visit has been done by BHEL officials for the project, however, Drawings that are required at our end for better understanding of scope, were not available at site.</p>	Drawings are available at site.

				works to be done under this Contract but are not necessarily complete in detail or to scale.	iv. Cable trench drawing of switchyard.		Kindly provide the drawings as desired vide our query.	
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Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/s MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
14	II of II Sec-VI	4	1.1 (b)	1.1. Turbine and Its Auxiliaries (b) Spiral case & stay ring Comments: Cleaning and repairing as per requirement, testing & painting	We understand that here "Testing" means "Pressure Testing of Spiral Casing". Request MePGCL to review above & confirm our understanding.	As per the bid document.	We again request MePGCL for following: (i) We understand that testing means only NDT. (ii) In case Pressure Testing is required, same may be clarified as for Pressure Testing (a) Test Cylinder and (b) Bulk Head are required to seal the Spiral casing from Inner Dia. side and I/L side which involves huge additional cost. Kindly clarify.	As per the bid document. and also, please refer Clause G.21 page 35
15	II of II Sec-VI	4	1.4 (a)	Air Compressor with Motor: Comment: Three nos. HP and one LP compressor (For Brake and service) to be installed along with Motor and MCC.	We understand that HP Compressor is for Synchronous Condenser purpose for both U # 1 & 2. Request MePGCL to review above & confirm our understanding.	As per the bid document.	Bid documents are clear to us however kindly clarify the following: Present Hydraulic System at Umium-II is of 23.5 Kg/cm ² . As per Latest Technology, if M/S MePGCL is offered 100 Kg/cm ² hydraulic system for Governor and MIV, it shall have Nitrogen Bottle Bank for Pressure Accumulator. In that case, HP Compressed Air System will not be required.	As per bid document And Please refer Clause S.4 and S5 also.
16	II of II Sec-VI	4	1.4 (c)	Air Compressor with Motor: Main tank, brake and service tank.	We request M/s MePGCL to provide type of Overhauling work to be carried out on Main tank, brake and service tank.	As per the bid document.	Bid documents are clear to us however kindly clarify the following: <u>HP Compressed Air Accumulator:</u> In case of 100 Kg Hydraulic System is offered, shall the main Tank will be retained, overhauled & used or shall be discarded? If retained, for which purpose?	As per bid document And Please refer Clause S.4 and S5 also page 17

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17	II of II Sec-VI	4	1.1 (k)	<p>1.1. Turbine and Its Auxiliaries (k) Upper/Lower draft tube Cones and draft tube liner</p> <p>Comment: New upper/lower draft tube cone, including adjustable rings</p>	<p>We understand that Draft Tube Liners are embedded in concrete and are to be replaced in both Unit # 1 & 2.</p> <p>Request MePGCL to review above & confirm our understanding.</p>	<p>As per the bid document.</p>	<p>Bid document is not clear to us.</p> <ol style="list-style-type: none"> Draft Tube liners are anchored with concrete at places from behind so that liners do not collapse and flown with outgoig water. In case we need to replace the Draft Tube Liners, anchroung can not be done and there will be risk of collapsing of liners. <i>At other projects, we do refurbish the Draft Tube Liner by restoring its thickness at places, if required and clean & paint as per specification or paint schedule provided by customer.</i> <p>Kindly clarify.</p> 	<p>Please refer to the latest amendment</p>

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18	II of II Sec-VI	14	1.2.2 (a)	Time Schedule: Implementation Schedule: Construction Work (Unit # 1): 10 months	<p>We understand that before commencement of dismantling work in 1st Generating Unit, EOT Crane, Drainage & De-Watering Systems, Hoists are to be made ready for de-watering of Water Path and pumping out of leakage water, dismantling and E&C work.</p> <p>In view of above, in the time schedule, 6(six) months should be allocated for these Dismantling and E&C of these common / station auxiliaries before Commencement of Construction</p>	Bar chart given in the bid document shall stand.	<p>(i) For dismantling and replacement of Main EOT Crane, it would take about 90 days. In case the EOT Crane work is done along with Construction Work (Unit 1) Dismantling work of Generator will get delayed by 3 months and thereby the commissioning of Unit 1 shall be delayed by 3 months.</p> <p>(ii) The above is the case of other common station auxiliaries required for dismantling of Unit 1 like Dewatering System and gantry Hoist of Draft Tube Gate.</p> <p>At other R&M Project, 6 months of time is allocated for common station auxiliaries before starting R&M work of generating Units.</p> <p>In view of above, we request M/s MePGCL to allocate some time for Common Auxiliaries in the Execution Schedule.</p>	Bar chart given in the bid document shall stand.

					of 1 st generating Unit.			
19	I of II	105	Appendix 6	<p>Scope of Works and Supply by the Employer</p> <p>Facilities: 1. Electric Power Supply</p> <p>Charge to Contractor (if any): As per tariff of MePDCL</p>	<p>We understand that, M/s MePGCL will provide power supply required during Testing and Commissioning of plant, at free of cost.</p> <p>Kindly confirm.</p>	<p>The bid document is final and no modification will be entertained.</p>	<p>From the contract we understand the Construction Power shall be chargeable.</p> <p>Our question is whether or not Power required for Testing, Pre-commissioning and Commissioning shall be provided by M/s MePGCL?</p>	All Chargeable as per Bid Document

Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/s MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
20	II of II Sec-VI	19	S.11	<p>Penstock Valves:</p> <p>....There is heavy leakage of water from the valves in closed condition, due to which complete dewatering of Penstocks is not possible. As a result, maintenance works in Turbine is hampered...</p>	<p>Kindly clarify how the Pressure Shaft, Penstock including Head Race Tunnel shall be dewatered for commencement of Dismantling & Erection Work at Power House as well as at Penstock Valve House.</p> <p>1. Whether or not M/s MePGCL will be responsible for the same De-watering of water path.</p> <p>2. Whether or not there is any EOT crane is there in Penstock Valve House. If yes, please specify the kind work that is to be carried out there?</p>	<p>It will be the responsibility of the Contractor to plan and execute various works required for the Project.</p>	<p>Following are our observations on Dewatering of water path:</p> <p>(i) De-watering up to Gate at Surge-shaft is Ok however, Dewatering and Filling of Concrete Tunnel including surge shaft from Intake to Surge Shaft, is a specialised one and normally is not done.</p> <p><i><u>In case Dewatering of Concrete Tunnel is done, Specialised Civil Vendor having expertise in Tunnelling Work, does the same otherwise, there would be a chance of Collapsing of Concrete Tunnel and surge shaft during Dewatering &/ Filling.</u></i></p> <p>(ii) When last time the Concrete Tunnel was inspected? Kindly share the Inspection Report.</p> <p>(iii) Kindly confirm if there is any Gate at the surge shaft for two penstocks.</p> <p>(iv) In case there is gates, kindly confirm the gates seals properly. In-case, it doesn't seal, whether M/S MePGCL will attend the sealing.</p>	<p>(i) It will be the responsibility of the Contractor to plan and execute various works required for the Project.</p> <p>(ii) Cannot be share.</p> <p>(iii) No</p> <p>(iv) Does not arise</p>

Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/s MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
21	II of II Sec-VI	20	S.14.	<p>Generator: The different components of existing Generators shall be dismantled by the Contractor and transported to the Store premises, in a systematic manner. The copper parts shall be kept in a closed and secured place...</p>	<p>We request M/s MePGCL to clarify following about handing over of dismantled scrap components for Turbine, Generator, Unit and Common and Station Auxiliaries etc.:</p> <ol style="list-style-type: none"> 1. Whether or not any closed store shed and open storage yard are identified for scarp materials. 2. How far the store and yard is located from Power House and Penstock Valve House. 3. What would be the mode of disposal of Bearing, Lubrication and Hydraulic System Oil? We understand that MePGCL shall provide container to keep them free of cost? 4. Whether or not M/s MePGCL will arrange security and Material Management Person to receive and protect the disposed machine components at the Disposal Store and Yard. 5. Shall there be any reconciliation for disposed material? 	As per the bid document.	<p>Bid Document dos does not clarify about the disposal process of oil lubricating or insulating oil.</p> <p>Kindly clarify.</p>	Please refer Clause G1

22	II of II Sec-VI			General: Embedded Part Work.	We request M/s MePGCL to clarify following 1. In case, any defect is detected in embedded sole plates & foundation bolts/studs of generator, lower/ bottom bracket etc. how they would be covered in the scope of this contract?	As per the bid document.	These are not defined in the bid document. Kindly specify scope and quantify the job so that we can assess and quote accordingly.	Please refer Last para of Clause G1
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SI. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/s MePGCL	MePGCL reply	BIDDER Query	MePGCL Further reply
23	II of II Sec-VI		General	General: Healthiness of Civil Foundation and Related Civil Structure.	We request M/s MePGCL to clarify following: 1. Whether or not M/s MePGCL has checked the healthiness of Civil Foundation of Generator, Bottom Bracket, Turbine, Governor etc. 2. In case, during execution, if any deficiency is found in Civil foundation, we understand that MePGCL will be responsible for rectification of the same. 3. In case any cavity is detected below Stay Ring, Draft Tube Liner etc., we understand that MePGCL shall be responsible for rectification of the same.	As per the bid document.	These are not defined in the bid document. Kindly specify scope and quantify the job so that we can assess and quote accordingly.	Please refer Clause G1
23	II of II Sec-VI	6-9		Legends: R: Replacement	We understand that where replacement is required, items shall be replaced with same rating & type of existing equipment without any change. Kindly confirm	As per the bid document, latest technology shall be adopted.	In case 100 Kg/cm ² Hydraulic System for Governor & MIV is offered, HP Compressed system shall be obsolete as Nitrogen Bottle Bank shall be used. In case 60 Kg/cm ² system for Governor & MIV is offered, then also, present HP Compressed Air System will be obsolete as the same is less than 60 Kg/cm ² rating. Kindly define.	Please refer Clause S4 and G1

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24	II of II Sec-VI	8	2.11	2.11. Communication facilities: a) Mobile facility in Power House and Switchyard area b) Internet facility in Power House and Switchyard area c) Internal Telephone System	Requirement regarding Mobile/internet facility is not clear. These are part of telecom companies. We request MePGCL to kindly exclude this requirement from the scope of this tender.	The bid document is final and no modification will be entertained.	(i) Internet facility in Power House & Switchyard: As per latest technology, OPGW through HT Transmission/ Feeder Line is used to get high speed broad band to remote power houses (has been adopted by M/s NEEPCO at 4X150 MW Kameng). Same can be extended locally with fibre optic cable. This one most reliable. M/S MePGCL can consider the same. Accordingly, scope can be defined under present contract. (ii) Mobile phones facility: It can be used installing Wi-Fi device with the high speed broad band network. M/S MePGCL can consider the above and scope can be defined accordingly. (iii) For Internal System from Power House to Stage IV Dam (2.5 Kilo meter approx.), whether over ground or underground network is to be used. Kindly provide technical specification for the same.	Please refer latest addenda issued by MePGCL

Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/S MePGCL	MePGCL reply
25	II of II Sec-VI	4	1.1.(l)	To replace the existing spherical valve with thru flow type valve including adjusting pipes. Modification work of existing concrete foundation is also to be done.	Kindly clarify / specify about scope of work against " <i>Modification work of existing concrete foundation</i> " of MIV.	Please refer latest addenda issued by MePGCL
26	II of II Sec-VI	4	1.1.(n)	Pressure relief valve (PRV): Including replacement of the discharge liner.	Kindly specify about scope of " <i>replacement of the discharge liner</i> ".	Please refer latest addenda issued by MePGCL
27	II of II Sec-VI	4	1.10.	Penstock Valves	Kindly clarify whether or not any Refurbishment work is to be carried out in Inlet & Outlet Pipe of Penstock BF Valve. Kindly define the limit of scope.	Please refer latest addenda issued by MePGCL
28	II of II Sec-VI	3	(1)	Through-flow type MIV	Kindly clarify whether any Refurbishment work is to be carried out in Inlet & Outlet Pipe of Main Inlet Valve Spherical is to be carried out. Kindly define the limit of scope.	Please refer latest addenda issued by MePGCL
29	II of II Sec-VI	8	2.8(j)	Two-stage Lift (including required lighting) for movement of personnel and equipments to Switchyard	Kindly provide detailed specification as per requirement so that we can consider the quantify and quote prices accordingly.	Repeat query Please refer reply in SL No 11
	Section-I (ITB)	ITB-30	41	Award of Contract	We request MePGCL to award two separate contracts as follows: (i) First Contract: For Ex-works supply and CIF/CIP supply, if any, including Custom Duties and applicable Taxes of all equipments and materials including Specified spares and Tools & Instruments identifying separately the CIF/CIP and EX-Works components of the Supply. (ii) Second Contract: For providing all services i.e. Model Testing, inland transportation & transit Insurance for delivery at Site, unloading, storage, handling at Site, installation, testing and commissioning including performance testing in respect of all the	As per Bid Document

					equipments supplied under the "First Contract" and any other services specified in the Contract Documents including Custom Duties and applicable Taxes.	
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Sl. No.	Volume	Page No.	Clause No.	Tender Provision	Clarification required from M/S MePGCL	MePGCL Reply
30	Volume 1	20	2.4.2 (a)	A minimum number of three similar(ii) contracts that have been satisfactorily and substantially(iii) completed as a prime contractor (single entity or JV member) (iv) between 1st January 2012 and the Bid submission deadline.	If the bidder is a turnkey executer, he should have erected tested and commission at least1(one) vertical Francis and generator of capacity of 30MW or more in India which should have run successfully for a maximum period of any 2 years from the date of commissioning.	The bid document stand
31	Volume 1	20	2.4.2 (b)	For the above or other contracts completed and under implementation as prime contractor (single entity or JV member), management contractor or Subcontractor(vi) between 1st January 2012 and the Bid submission deadline, a minimum experience in the following key activities successfully completed: Renovation, Modernisation & Upgradation of Hydro Electric Power Projects.		

Sl. No.	Volume/ Section Chapter/ Clause	Page	Heading	Pre-Bid Queries	MePGCL Replies
			Technical Queries		
32	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2	11	Turbine & their Auxillaries (It is mentioned in the tender that The offer with maximum output matching to existing structure shall be given due consideration during evaluation)	<p>Please specify the evaluation criteria for higher output than 10% COL under rated condition. If suppose one bidder offer overload higher than 10% then how other bidders price bid will be evaluated/loaded for transparent evaluation.</p> <p>Please also mention the in case of not meeting the performance guarantee during the execution phase how much will be the penalties levied if deviation occurs from the quoted guarantee parameters .</p> <p>As per standard practice performance guarantee test will be carried out in any one of machine. Kindly confirm .</p>	Please refer to Addenda in MeECL website
33	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.2 , S.2.3	13	Design Data of Existing Turbines	<p>Please specify the load condition at maximum head i.e.162m. We understand 162m is head under max. reservoir level at 673.6 msl and minimum TWL, when single unit at part load/no load and other unit under shut down. This will be needed for transient calculation as well as hydraulic application (i.e selection sizing of turbine including runner) .</p> <p>As per tender requirement "The Contractor shall guarantee against the breakage with runner blades, which has been experienced by MePGCL since commissioning of this Power Station till date, after operation of the unit(s) for the period from 6 months to 1 year approximately". . Therefore above information is must for the selection of most appropriate runner.</p>	Please refer data Annexure I

34	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.2	13	Design Data of Existing Turbines	Please specify the maximum net head when both unit running at full load with 10% COL i.e when HWL is max. and unit at full load (including 10% COL). Same is needed for transient calculation purpose and selection sizing of turbine.	Please refer Annexure 1
35	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.2	13	Design Data of Existing Turbines	Please specify the head loss value at full load with 10% COL, rated load and at rated output under rated head . Same is needed for transient calculation purpose.	Please refer annexure 1
36	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.7	15	Speed rise and pressure rise	Please specify the maximum speed rise in %/rpm , pressure rise in mWC and worst load condition under which load case these figures arrive. Without speed rise and pressure rise pressure, we cannot complete the transient calculation. Please also provide the guide vane closing time in emergency shutdown.	Please refer Annexure 2 and 2a
37	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.7.4	16	The prototype efficiencies shall be calculated and derived from the model efficiencies as per the IEC-995 Code or equivalent.	Please make note IEC-60995 is withdrawn by IEC forum, in place of IEC-60995 there are two step standard set by IEC i.e. IEC 60193 and IEC 62097. Please review the same and suggest according to which IEC standard efficiency shall quote. Same IEC reference is enclosed for your reference.	Please note that equivalent has been mentioned in the bid document.

38	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.2.7.6	16	Field acceptance tests	<p>Please confirm the feasibility of thermodynamic test/ pressure-time (Gibson method) if it is not possible by these method then FET as per winter Kennedy method or any other relative method as per site condition.</p> <p>In thermodynamic method we need tapping of appropriate size as per IEC-60041 at inlet side(i.e. near to MIV) to insert temperature measuring probe and also we need provision at outlet side(near to draft tube exit)for making frame structure to fix appropriate number of thermometer. IF site condition allow this arrangement then only we can perform the Field efficiency test by thermodynamic method.</p>	As per bid document
39	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.4	17	Oil Pressure Supply System (OPU)	<p>Keeping existing low pressure system by which servomotor design become complex and further due to low operating pressure range its design becomes bulky. Moreover due to this it require long shutdown period during annual maintenance/overhauling. We recommend based on our vast experience in R&M of hydro power station , existing servomotor and oil pressure unit replace by new servomotor & OPU of high pressure range then there is significant saving of oil and components sizing will be small therefore considerable saving of space .</p> <p>Further also let us know number of cycles for OPU design need to consider as per C-O-C condition (close-open-close) or as per close open condition(CO)</p>	Please refer to clause S.4 in page 17

40	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.11	19	Penstock Valves	Please specify the following information of penstock valves: i. Design head of penstock valves ii. Design discharge & emergency discharge of penstock valves iii. Size of penstock valve. iv. Opening & closing time v. Existing HPU/OPU of penstock pressure rating of penstock valve vi. Servomotor bore/dia. and stroke	Please refer Annexure 3 and 3a
41	Vol II / Section VI/ Employer's Requirements / Description of Projects /S.13.3	20	Discharge measurement system (The Contractor shall design and install Discharge Measurement System at Tail race, as per relevant standards. The said discharge figure shall be displayed in Main Control Room and the measurement system shall be linked to control system.)	Normally for discharge measurement flowmeter need to install at upstream side of turbine. Please provide the details of flow measurement instrument which shall be mounted in tailrace for flow measurement. Here we are considering 2 path flow meter within accuracy of +/-2%.	As per relevant standard
42	Section VI/ Employer's Requirements // List of Major Equipements / 1.2 ,2.2 , 2.7		Governor, Excitation, Control & Protection System	Please provide the detailed requirement of the automation system including SCADA to be newly supplied. Examples as given below: MAIN 1 & MAIN 2 for the protection scheme Redundancy for Excitation Controller and Thyristor bridge The requirement of the Control / SCADA system needs to be elaborated for comparison during evaluation and contract execution.	As per relevant standard

		Commercial Queries			
43	Section III / Evaluation And Qualification Criteria (Without Prequalification) 1.2.2 b Voume-I	14	Operating & Maitenenace Cost	We understand that the O & M of the plant is not under the existing scope of work.	Please refer to letter no MePGCL/CE:GEN/t-133/(Pt-II)/2021-22/31 dated 4.3.2022
44	Section VI/ Employer's Requirements / List of Major Equipements / 1.12	35	Spares and Tools	There is no list is enclosed of spares to be supplied under the contract. Requesting to give a detailed list of spares to be supplied with TG package for each system for making transparent evaluation and smooth contract execution. We recommend in absence of the mandatory spares list, we propose to give recommended spares with prices and this will not be part of the bid evaluation. Kindly clarify.	As per bid document

45	Section VI/ Employer's Requirements / List of Major Equipements /2.8 (J)		Outdoor Switchyard / Two- stage lift system	<p>Please share the feasibility report if any is carried out for the installation of a two-stage lift system to evaluate site conditions and construction considerations. In absence of a report, the installation of the ropeway can be explored with an experienced contractor.</p> <p>We don't recommend the installation of a lift in the scope of the E & M contractor. Because of site conditions having hard rocks/mountains which is having 132 KV tower in between the switchyard and powerhouse.</p> <p>This is a critical installation that must be a clear scope of requirement having capacity/loads requirement which needs to be handled by the specialized Civil wing of MePGCL.</p> <p>Therefore, requesting you, to delete this requirement from the existing tender.</p>	<p>As per Bid Document</p> <p>Please also refer Reply in SI No 11 above.</p>
46	Section VI/ Employer's Requirements / 2.11		Communication facilities	<p>This is also the requirement that needs specialized services of Internet Service providers like Airtel, Idea and needs to be handled by the Civil wing of MePGCL. Therefore, requesting, to delete the requirement from the existing work.</p>	<p>Please refer latest addenda issued by MePGCL</p>

47	Section VI/ Employer's Requirements	3	Reverse Engineering	<p>We understand that both the machines are identical, please confirm. As per the tender requirements reverse engineering needs to be carried out by the successful contractor, please note that after the finalization of the LOI anyone of the two machines will be handed over to the contractor in dewatered condition for reverse engineering. The duration of shut down will be finalized at the time of contract finalization.</p> <p>Please note that the machine will be handed over to the contractor in dewatered condition during contract execution as and when required for the successful execution of the contract. Any work related to dewatering of machine including sealing of intake gate etc. shall be the responsibility of MePGCL.</p>	Please refer to Bid document
48	Chapter IV/ General conditions of Bid & Contract / Part C Cl No 1.9	105	Appendix 6 Scope of works and supply by the Employer	<p>As per pre-bid replies, electric power supply charges as per the tariff of MePDCL shall be borne by the contractor. We request you to share the per-unit rate charges.</p> <p>Under Appendix 6, it's also mentioned that Land on lease basis shall be given as applicable rates of MePGCL. We understand this will be given for site office and where this land will be given and rates/year for same.</p> <p>As per standard practice for existing power stations, we request you to provide free-of-cost construction power, guest house /furnished quarters, and the store shall be provided to the contractor without any cost during the execution of the contract. Please confirm.</p>	<p>Please check from MEPDCL website for the rate</p> <p>As per rate of MePGCL at appropriate place.</p> <p>Not accepted</p>

49	Section VI/ Description of project / G2	25	Transport Limitations	<p>Approach road for carrying out heaviest material to powerhouse, valve house, switchyard, and road maintenance shall be the MePGCL responsibility. A contractor will submit the requirement and weights of material during the execution of the project.</p> <p>Please confirm.</p>	As per Bid document
50	General		General	<p>The availability and healthiness of all special as well general tools and tackles available at the site shall be ensured by MePGCL and will be made available to the contractor before dismantling of work.</p>	<p>It is the responsibility of the contractor to provide all tools and tackles.</p>

A/Hf

ANNEXURE 1

A/n

ANNEXURE -1B/ HEAD /STAGE-III
RECORD OF HEAD MEASUREMENT OF UMIAM - UMTRU STAGE-III POWER STATION

Date and time of measurement : 2.8.2010 /10:30 hrs to 12:00 hrs

PRESSURE GAUGE USED : WIKA

(a) MAKE :- WIKA
(b) MODEL TYPE :- EN-837-1
(c) SCALE :- 0 - 28 Kg/cm²

Events	Status of Unit-I (MW)	Status of Unit-II (MW)	Readings of Pressure Gauge at the Turbine Inlet connected at Unit-I (Kg/cm ²)	Forebay level (Meters)	Tailrace level (Meters)	Remarks	
1	IDLE MIV - Open	IDLE	16.60	670.438	504.725	STATIC	165.713
2	100% RPM 0 MW	IDLE	16.60	670.453	504.825		165.628
3	24 MW 49.94 Hz	IDLE	16.10	670.469	505.225		165.244
4	30 MW 50.01 Hz	IDLE	15.80	670.469	505.475	FULL LOAD OF UNIT-I	164.994
5	30 MW 49.79 Hz	100% RPM 0 MW	15.65	670.453	505.725		164.728
6	24 MW 49.74 Hz	100% RPM 0 MW	16.00	670.438	505.525		164.913
7	24 MW 49.88 Hz	24 MW 49.88 Hz	15.80	670.432	505.925		164.507
8	30 MW 50.11 Hz	24 MW 50.11 Hz	15.60	670.414	505.975		164.439
9	30 MW 49.91 Hz		15.45	670.408	506.025	FULL LOAD OF BOTH UNITS	164.383

(B S Wahlang)
Resident Engineer
Stage-III Power Station
MeECL, Kyrdekulai

SECTION 9.2

Date & Time		Load		Pressure		G.A.S. stroke	Time of GA operation seconds
		%	in speed	kg/cm ²	in line		
1	2	3	4	5	6	7	8
25.1.79	Before Test	25%	100	17.0		116	Normal time
2125	During Test	25%	103	20.0	18%	116 to 47	
	After Test	0	100	17.0		157	-do-
28.1.79	Before Test	50%	100	17.0		157	
2000	During Test	50%	110	18.5	9.0%	157 to 43	
	After Test	0	100	17.0		210	-do-
30.1.79	Before Test	75%	100	17.0		210	
2210	During Test	75%	125	20.0	18%	210 to 0	
	After Test	0	100	17.0		265	-do-
31.1.79	Before Test	100%	100	16.5		265	
1825	During Test	100%	132	20.5	20%	265 to 47	
	After Test	0	100	17.0			

Pressure relief valve stroke with max. time	GAS open in governor	Vacuum in cone in kg/cm ²	Voltage rise %	Remarks
9	10	11	12	13
0 total	35%	+0.80	3.5%	
35 30 secs.	13%	0.48	-	
0	51%	+0.3 to .7	4.5%	
0 total	12%	+0.45	-	
85 50 secs	65%	o/s tripped machine	-	Not recorded machine tripped
0	-do-	-do-	-do-	at 115% o/s protection.
0 Total	78%	+0.20	18%	
105 122 sec.	-do-	+1 to 0.50	-	
0	12%	+0.50	-	
0 Total				
105 78 secs.				
0				

REMARKS: Results are satisfactory except that:-
 1) During 75% load throw OFF m/c tripped on 115% overspeed protection due to fault in 115% overspeed ckt.
 11) After rectification of above fault 100% load throw OFF were carried out successfully. Machine didnot trip this time.

SUPDNG. ENGINEER
 K.H.E.P., M.S.E.B.

COMMISSIONING ENGR
 BHEL PP&SD (ER)

RESIDENT ENGINEER
 BHEL PP&SD (ER)

VE.PILLAI

SECTION 6.2

Annexure 2a

SETTING OF GOVERNOR

DATE OF TRST: 13.10.78

<u>Sl.NO.</u>	<u>Actual time in Seconds</u>	<u>Designed Value</u>
1. Time of closing of guide apparatus.	5.5 secs from S=300 to S=60	5.5 secs. from S=300 to S=60
2. Time of opening	7.9 secs from S=40 to S=300	8 secs. from S=40 to S=300
3. Time of closing	6 secs from S=300 to S=60	5.5 secs from S=300 to S=60

2 Gate Valves, 200 mm nom. dia., 25 Kg/sq.cm nom. pressure, manually controlled, for the by-pass pipings.

2 Needle Valves, 200 mm nom. dia., with manual control mechanisms for the choking of the by-pass pipings.

2 Automatic Butterfly Valves for penstock shutting-off controlled by hydraulic cylinders.

- nom. Dia. 2590 mm.
- nom. pressure 10 Kg/sq.cm.
- opening time 180 sec.
- closure time 180 sec.

2 Manometric Tripping Device, of the diaphragm type nom. pressure 16 Kg/sq.cm.

4 Control Plungers

- type 1PT250H830
- nom. dia. 250 mm
- Stroke 830 mm
- working pressure 50 Kg/sq.cm.
- braking pressure 140 Kg/sq.cm.
- test pressure 210 Kg/sq.cm.

2 Air Valves

- nom. dia 630 mm
- Stroke 200 mm
- max. nom. pressure 10 Kg/sq.cm.
- working pressure 9 Kg/sq.cm.
- test pressure 13 Kg/sq.cm.

Cont'd.

No. 2 AUTOMATIC BUTTERFLY VALVES
2590 mm DIA.

CHARACTERISTICS

Normal diameter	2590 mm.
Head : Hydrostatic on the axis	42 m
Max. hydrodynamic (water hammer)	50 m
Nominal pressure	4.2 kg / sq. cm.
Test pressure with closed valve	6 kg / sq. cm.
Test pressure with open valve	9 kg / sq. cm.
Allowed leakages	0.50 l / min.
Nominal pressure delivery	25.5 cu. m / sec.
Head loses at the 25.5 cu. M / sec. delivery	0.150 m.
Opening with balanced head by :	oil -hydraulic mechanism
	Remote hand - control
	Local hand - control
Opening with unbalanced head :	hand controlled on site exceptional
Opening torque	approx. 20,000 kgm
Opening time	180 sec.
Closure with unbalanced head, head =	50 m.
Closure with counterweight :	automatic due to water overspeed
	in the penstock
	remotely hand - controlled
	locally hand - controlled
Closing torque (full throat discharge limit)	24,000 kgm
Closing time adjustable between	60 to 180 secs.