

SUBJECT : REPLY TO PRE-BID QUERIES LOT 1 PROJECT : COAL GASIFICATION BASED AMMONIA-UREA PLANT AT TALCHER, ODISHA TENDER NO. : PNMMP/PC-183/E-402/NCB EMERGENCY DIESEL GENERATOR PACKAGE						
Sl.No	SEC. NO.	Page No.	Clause No	Subject	BIDDER'S QUERY	PDI/ITL's Reply
1	SECTION: VI - 2.0	Sheet 3 of 8	1.1 BIDDER'S SCOPE OF WORK	Inspection by Third Party Inspection Agency (TPI),	The expenses incurred towards deputing your authorized representative / independent agency including their fees for witnessing the Testing at our works shall be to your account.	Inspection by Third Party Inspection Agency (TPI) shall be in Bidder's scope. NIT shall prevail.
2	SECTION: VI - 2.0	Sheet 3 of 8	1.1 BIDDER'S SCOPE OF WORK	obtaining all necessary statutory approvals,	We will provide CEIG approval in our scope. All other approval shall be in purchaser scope. However we will provide required document for getting the approval.	Obtaining all necessary statutory approvals shall be in Bidder's scope. NIT shall prevail.
3	SECTION: VI - 2.0	Sheet 3 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	duplex strainers	For 1500 rpm Engines, duplex type fuel oil filters/ stariner are not applicable. However, we have considered simplex type fuel oil filters as per manufacturer standard.	Noted.
4	SECTION: VI - 2.0	Sheet 3 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	z) Self standing data logger to record and monitor all critical operating and control parameters for diagnosis with sufficient number of channels (having 10 spare channels for future use) shall be provided. The number of channel shall be decided mutually	External lube oil priming pump has become obsolete as a result of the on-going R&D initiative & continuous product development. The benefits from lube oil priming pump are available now through an in-built provision called remote exercise feature in the integrated genset controller itself. This accepts a remote signal to initiate with or without load testing.	Noted.
5	SECTION: VI - 2.0	Sheet 3 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	i) Starting system complete with battery, battery charger, starter motor, control system etc. to accelerating the engine within 20 seconds	As per manufacture standard DG set shall start within 10-15sec & take full load in another 10-15 sec.	Noted. However, DG sets shall be capable for starting synchronizing between all DG Sets and taking full load within 30 Seconds, without undue vibration and overheating of the engine.
6	SECTION: VI - 2.0	Sheet 3 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	j) All Piping, fittings and valves, SS braided metallic flexible joints etc. /, to connect the engine to all auxiliary equipment/systems.	Fuel pipe- MS Class C Exhaust pipe- ERW MS class B All other internal interconnecting pipes shall be as per Cummins standard.	Shall be finalized during detailed engineering.
7	SECTION: VI - 2.0	Sheet 4 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	n) Platforms, walkways, stairs and handrails etc. , as required to provide adequate access and workspace (if required).	Same shall be in civil vendor scope.	Shall be in Bidder's scope. NIT shall prevail.
8	SECTION: VI - 2.0	Sheet 4 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	asbestos lagging	As per manufacture standard there is no requirement of asbestos rope in exhaust piping.	Noted.
9	SECTION: VI - 2.0	Sheet 4 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	p) PLC based AMF cum Control panel with each unit, relays, instruments, annunciators and other accessories as required in completely wired and ready to install conditions. Control cabling from instruments terminal block (TB) to DG set junction box (JB) and between DG junction box to L.C.P. . The cabling (including cable trays) from field to control panel shall. Field routing of the control cable shall be done through GI conduit of 16SWG thickness along-with DG breaker panel.	Kindly provide distance between TB to JB and JB to LCP to enable us to calculate control cables.	As complete Emergency Diesel Generator Package is in Bidder's scope., the distance shall be considered by Bidder itself.
10	SECTION: VI - 2.0	Sheet 4 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	Power Cables from PMCC at OUSS to Contractor 415 V PMCC/MCC and Power/Control Cables from Contractor PMCC/MCC to all DGs auxiliaries.	Purchaser scope.	Noted for Cables from PMCC at OUSS to Contractor 415 V PMCC/MCC only. However, Bidder shall provided load details and Cable size in the Bid itself. Refer Plot Plan for location of OUSS. Power/Control Cables from Contractor PMCC/MCC to all DGs auxiliaries as well as all cables (supply, laying, termination & testing etc.) within Batter limit of Emergency Diesel Generator Package shall be in Bidder's scope
11	SECTION: VI - 2.0	Sheet 4 of 8	1.2 BROAD SCOPE OF SUPPLY/ WORK/ SERVICES	z) Self standing data logger to record and monitor all critical operating and control parameters for diagnosis with sufficient number of channels (having 10 spare channels for future use) shall be provided. The number of channel shall be decided mutually at the time of drawing approval. However it should include all critical parameters to be monitored and recorded with fault recording facility for 1 sec pre fault and 3sec post fault time having discrimination of 50 milli seconds. The hard ware and software shall be such that it record minimum 500 such events and shall over write subsequently on FIFO basis.	Data logger/remote monitoring shall be mounted inside PCC 3.5 controller. Self standing data logger not possible.	NIT shall prevail.
12	SECTION: VI - 2.0	Sheet 5 of 8	1.5	All start-up spares as required and all essential spares as specified.	Considering the DG set shall be commissioned within 4-5 months of supply, no commissioning spares are required and not considered by us in our offer. However, if due to any reason there is delay in commissioning of the DG set beyond this testing period, any item/ required for commissioning shall be provided by purchaser and shall not be covered in our scope.	All Commissioning Spares shall be in Bidder's scope irrespective of time of commissioning.
13	SECTION: VI - 2.0	Sheet 5 of 8	1.9	1.9 All EOT Crane works within Battery Limit	Purchaser scope.	All EOT Crane works within Battery Limit shall be in Bidder's scope. NIT shall prevail
14	SECTION: VI - 2.0	Sheet 5 of 8	1.11	1.11 Contractor shall design the Emergency Diesel Generator Package to accommodate within the available area marked in plot plan.	Kindly provide the plot plan.	Plot Plan already available in NIT.
15	SECTION: VI - 2.0	Sheet 5 of 8	1.12	1.12 All mandatory approval including liaisoning from various authorities like Electrical Inspectorate, Central Electricity Authority, State Pollution Control Board, Central Pollution Control Board etc. pertaining to execution of Emergency Diesel Generator Package.	We will provide CEIG approval in our scope. All other approval shall be in purchaser scope. However we will provide required document for getting the approval.	NIT shall prevail.
16	SECTION: VI - 2.0	Sheet 5 of 8	1.13	i. Storage, preservation and conservation at site as per manufacturer's recommendation until erection, j. Security, Watch & ward till handing over	We request you to provide us a lockable storage at site free of cost. We request you to provide us electricity & water free of cost at least at one point free of cost.	Land for Store may be provided subject to availability of same. Electricity and Water shall be provided as per NIT on chargeable basis.
17	SECTION: VI - 2.0	Sheet 6 of 8	1.13	p. Supply of all special tools & tackles for erection and maintenance tools and tackles as specified	No special tools and tackles are required for normal operation/maintenance. However we have considered general tools.	Set of special tools and tackles, as required for installation and maintenance and recommended by OEM shall be in Bidder's scope.
18	SECTION: VI - 2.0	Sheet 6 of 8	1.13	q. Training of Owner's personnel.	We would provide training at site for operation /routine maintenance of owner personnel during execution of contract.	Shall be mutually discussed and finalised during execution.
19	SECTION: VI - 2.0	Sheet 7 of 8	2.1	2.10 Provide spare parts including all consumables for commissioning. All such spares are to be available at site prior to commissioning.	Considering the DG set shall be commissioned within 4-5 months of supply, no commissioning spares are required and not considered by us in our offer. However, if due to any reason there is delay in commissioning of the DG set beyond this testing period, any item/ required for commissioning shall be provided by purchaser and shall not be covered in our scope.	All Commissioning Spares shall be in Bidder's scope irrespective of time of commissioning.

(TECHNICAL SPECIFICATION - ELECTRICAL)

20	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 5 of 68	1.2.1	c. DG set shall be suitable for starting of the applicable largest emergency motor i.e. DOL starting of the largest rated motor of 200 kW with starting current limited to 550% without any additional tolerance. Suitable base load shall be considered.	Kindly provide the complete load details such starting and running power factor, efficiency of motor, base load etc. to calculate DG sizing.	Load Details , available as on date has been provided in NIT. Bidder may consider standard parameters of respective motors considering motors as IE2 / IE3. Additional Details shall be provided during detailed engineering.
21	SECTION: VI - 2.0	Sheet 5 of 8	1.2.1	including all accessories and Emergency Power Distribution Board) for 'Emergency Diesel Generator Package' .	Kindly provide PDB detail , since any SLD for same not provided.	Conceptual SLD of Emergency Power Distribution Board already attached in NIT.
22	SECTION: VI - 2.0	Sheet 7 of 68	1.2.1	c. Switchgears: # 11 KV Switchgears/ switchboards, MCC/PMCC	Kindly provide DG sync panel SLD.	Conceptual SLD of Emergency Power Distribution Board already attached in NIT.
23	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 7 of 68	1.2.2	d. Bus Ducts, if required e. All Cables viz □ Power Cables (11kV, 1.1kV) □ Control Cables, □ Earthing Cable □ Signal cables, □ Optical fibre cables □ Data Cables □ Communication cables	Kindly confirm whether we have to considered bus duct or power cable. Signal cables, Optical fibre cables , Data Cables, Communication cables shall not be in our scope.	Power Cables are acceptable. Signal cables, Optical fiber cables , Data Cables, Communication cable, as required shall be in Bidder's scope.
24	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 8 of 68	1.2.2	h. UPS System	Not in our scope.	In Bidder's scope. NIT shall prevail.
25	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 8 of 68	1.2.2	k. 110V DC Batteries and DC Distribution Boards.	Not in our scope.	In Bidder's scope. NIT shall prevail.
26	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 8 of 68	1.2.2	m. Complete Electrics for EOT Crane, Hoists,	Not in our scope.	In Bidder's scope. NIT shall prevail.
27	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 9 of 68	1.14	1.14 1 No. 415 V Feeder (63 A) at Existing Substation near 132 KV Switchyard shall be made available. Tapping of Construction Power (on chargeable basis) from this feeder (including supply & erection of all required materials like structural supports for cable tray, cable trays, power cables, control cables, protection & metering, cable termination etc. as well as underground cabling work) and further distribution shall be in Contractor's scope.	We request you to provide us electricity & water free of cost at least at one point free of cost.	Electricity and Water shall be provided as per NIT on chargeable basis.
28	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 9 of 68	1.14	Bidder shall ensure that the minimum power factor of 0.9 shall be maintained at their end by providing suitable power factor improvement devices.	Offered equipment is designed for 0.8 power factor.	This clause is for Construction Power. Bidder shall provide Capacitor to ensure minimum power factor of 0.9.
29	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 1 of 6	TECHNICAL SPECIFICATION BATTERY	TECHNICAL SPECIFICATION BATTERY	As per manufacture standard we will provide SMF VRLA type Cummins make battery. Any kind of spare shall not be provided.	Battery shall be of approved make as per NIT. Spares as per NIT shall also be in Bidder's scope.
(TECHNICAL SPECIFICATION - DIESEL GENERATOR SET)						
30	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 4 of 45	1.5	n) Platforms, walkways, stairs and hand racks, as required, for adequate access during operation and maintenance.	Same shall be in civil vendor scope.	Shall be in Bidder's scope. NIT shall prevail.
31	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 4 of 45	1.5	v) Electrically operated Turning Gear Motor (DC powered)	This turning gear shall be for starting of engine not for maintenance.	Noted.
32	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 4 of 45	1.5	s) Set of special tools and tackles required for installation and maintenance as required and recommended by OEM	No special tools and tackles are required for normal operation/maintenance. However we have considered general tool as per enclosed list.	Set of special tools and tackles, as required for installation and maintenance and recommended by OEM shall be in Bidder's scope.
33	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 4 of 45	1.7	DG Set shall be designed to cater the non-linear loads i.e. VFD driven pump therefore effects of harmonics on DGs shall be considered while designing.	Kindly provide the percentage of non linear load and VFD pump details.	Same shall be provided during detailed engineering.
34	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 6 of 45	5.1.3	5.1.3 Equipment to be located outdoor shall be weather proof and have IP-55 protection and shall also be provided with canopies as far as practicable. The genset shall be housed in a canopy	Acoustic enclosure shall be weather proof type suitable for outdoor application and there is no IP defined for the same.	Equipment other than DG Set, located outdoor shall be weather proof and have IP-55 protection
35	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 7 of 45	6.5	6.5 The engine shall be provided with exhaust silencer, necessary ducts, minimum 2 nos. expansion bellows and supporting arrangement from ceiling for exhausting the gases to outside.MCR	For duct kindly provide exhaust system layout.	Bidder shall develop exhaust system layout
36	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 9 of 45	6.14, 6.15, 6.17, 6.18, 6.19,6,20	6.14 Cylinder blocks shall be made of single block high-grade modular cast iron with spacer plates. 6.15 Cylinder liners shall be of centrifugally cast alloy cast iron replaceable wet type. 6.16 Pistons shall be made of aluminium alloy material and shall have steel reinforced grooves for minimum of two compression rings and one groove for oil ring (oil cooled). 6.17 Connecting rods shall be made of drop forged, high tensile strength steel. 6.18 The crankshaft shall be of high tensile strength steel with forged pins and induction hardened journals. 6.19 Cylinder heads will be of alloy cast iron having a high resistance to thermal stress. 6.20 The valves shall have replaceable type alloy sheet	These components are integral part of engine, same shall be as per Cummins standard and design.	Noted.
37	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 11 of 45	9.0 LUBE OIL SYSTEM	A mechanical hand operated lubricator shall also be provided, if required as per OEM standard design.	Not required, hence not considered.	Noted.
38	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 11 of 45	10.4	10.4 The starting system shall be such that the D.G. set shall start & come up to rated speed and be ready to accept full load within the period as indicated in Design Philosophy - Electrical.	*As per manufacture standard DG set shall start within 10-15sec & take full load in another 10-15 sec.	DG sets shall be capable for starting synchronizing between all DG Sets and taking full load within 30 Seconds, without undue vibration and overheating of the engine.
39	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 11 of 45	10.7	10.7 The Lead Acid Battery (VRLA Type) or Ni-Cd battery shall be heavy duty type and suitable for 6 successive starting attempts of the engine without draining.	As per manufacture standard we have considered VRLA type battery which is suitable for 6 successive starting attempts.	Noted.
40	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 12 of 45	10.13	11.3 Exhaust piping shall be painted with special heat resistant paint. A condensate drain plug shall be provided in the system. All system exhaust piping, silencer and bellows shall be provided by the bidder with lagging/ cladding materials, so that the cold surface temperature shall not be more than 200 Deg C during engine operation in hazardous area	As per manufacture standard we have considered 2 coats of primer and 1 coat of epoxy paints with thermal insulation 75mm. thick with mineral wool 64Kg/cum. complete with wire mesh and 24 SWG Aluminium cladding, of Exhaust Pipe only.	Noted.

41	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 12 of 45	11.9	The flexible exhaust pipe shall be of carbon or stainless steel, smoke tight and the inner diameter same as of exhaust pipe.	As per manufacture standard we will provide ERW MS class B exhaust pipe.	NIT shall prevail.
42	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 12 of 45	12.2	The speed governing system of the diesel engine shall satisfy the following requirements: a) Steady state speed shall be adjustable between 0 to 3% manually. b) Steady state speed regulation once fixed, shall not vary beyond + 0.5%.	All the transient and steady state performance shall be as per ISO 8528 part V table no 4 class G2 governing.	NIT shall prevail. The Generator shall meet required performance as per G3 performance Class as per IS/IEC 60034 Part 22.
43	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 14 of 45	14.1.3	14.1.3 The generator shall be synchronous A.C. Generator; star connected and shall have specified output at 0.8 lag p. f. at 11 kV, 3 Phase, 4 wire system, 50 Hz.	Offered system shall be 3 phase 3 wire system.	Noted.
44	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 14 of 45	14.1.7	14.1.7 Various generator winding (i.e. stator, rotor, exciter) shall be designed either for insulation Class 'F' with temperature rise up to Class 'B' or with Class 'H' with temperature rise up to Class 'F'. The windings and overhangs shall be braced to withstand the short circuit forces.	Kindly confirm whether it will be F to B or H to F. Because there will be difference in both the rating.	As per OEM Standard Design
45	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 16 of 45	15.6 Largest Motor Starting Requirement	The D.G. set shall be designed such that it can start squirrel cage induction motor of specified rating by D.O.L. starting method when already loaded up to 80% of its rated load. The voltage dip at the generator terminal shall not exceed 10% of its rated voltage during the entire starting period which will not exceed 5 seconds.	Kindly provide the complete load details such starting and running power factor, efficiency of motor, base load etc. to calculate DG sizing and confirm TVD.	Load Details , available as on date has been provided in NIT. Bidder may consider standard parameters of respective motors considering motors as IE2 / IE3. Additional Details shall be provided during detailed engineering.
46	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 17 of 45	16.12.2	The ETDs (Duplex Type) shall be of platinum having 100 ohm resistance at 0°C and temperature coefficient as 3.85 x 10-5. The ETD's shall be 3 lead type having power frequency insulation level of 2 KV.	Simplex type ETD shall be provided.	Noted.
47	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 19 of 45	17.22	17.22 Separate terminal box shall be provided for space heater and other devices like RTDs.	As per manufacturer standard there is no provision of separate terminal Box for space heater wiring, RTD & BTD.	Noted.
48	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 30 of 45	21.8	The acoustic enclosure shall be designed to meet the CPCB norms of minimum insertion loss of 25dB (A) at 0.5meter from the enclosure. The measurement for insertion loss shall be done at different points at 0.5m from the acoustic enclosure, and then averaged	As per CPCB norms noise insertion loss shall be 25 dBA at one meter distance from DG set under free field condition.	NIT shall prevail.
49	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 34 of 45	28.13	In any case the Bidder shall establish the performance of DG set ON LOAD at site upon installation during commissioning for final acceptance by the Owner. Load for ON LOAD testing at site shall be arranged by the Owner. Bidder to provide technical assistance for arranging the load at site.	We do not recommend running of DG set on no load.	NIT shall prevail.
50	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 35 of 45	29.0 SPARES	29.1 Commissioning Spares: Commissioning spares, as required, shall be supplied with the main equipment. Item-wise list of recommended commissioning spares shall be furnished for approval.	Considering the DG set shall be commissioned within 4-5 months of supply, no commissioning spares are required and not considered by us in our offer. However, if due to any reason there is delay in commissioning of the DG set beyond this testing period, any item/ required for commissioning shall be provided by purchaser and shall not be covered in our scope.	All Commissioning Spares shall be in Bidder's scope irrespective of time of commissioning.
51	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 35 of 45	29.0 SPARES	29.3 Recommend 2 years Operational Spares (other than mandatory spare) along with recommended quantity & item-wise unit price shall be furnished.	We do not recommend stocking the spare as all the spares are readily available at nearest authorized Sales & Service dealers. Moreover the shelf life of spare is 6 months. Also note that spare required are depend on number of operation hours	Noted.
52	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 35 of 45	30.0 PACKING	30.2 The equipment shall be wrapped in polythene to make it water proof. Bags of silica gel shall be kept inside to absorb moisture present during transport and storage. An additional wrapping with bitumen paper shall also be provided before the equipment is packed in wooden crates	As per standard practice DG set shall be dispatched packed in polythene whereas panel shall be dispatched packed in wooden crate.	Noted.
53	SECTION: VI - 3.1 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 1to 12	SECTION:VI	3.2.1DESIGN PHILOSOPHY - EOT CRANE & HOIST	Not in our scope.	All EOT Crane works within Battery Limit shall be in Bidder's scope. NIT shall prevail
54	Kindly provide detailed BOQ of DG set.					Being, Single Point responsibility, BOQ of NIT shall prevail.