

CORRIGENDUM & REPLIES TO THE QUERIES RAISED BY VENDORS AGAINST NIT No: NU/ENGG/50/3B/NIT/2019-20/Re02/NIT09 dated 23.11.2021, for **Design, Supply, Installation, testing & commissioning of Bio Gas Based Co Generation Engine and Bio-methanation Plant along with the comprehensive Operation & Maintenance work initially for five years at permanent campus of Nalanda University (NU), Nalanda, Rajgir, Bihar** (Package -3B)

Date & Time: 03.12.2021, 3.00pm

Prospective Bidder-1

Item No.	Query	Comments/reply
1	We would like to know how much assured supply of Waste.	As specified in the tender that both the parties shall conduct site visit and check the available feed material to generate required quantity of biogas. Depending on the available seasonal feed material in the vicinity of 150 Km from NU campus waste collection and transportation bidder will supply the feed material for biogas generation. A site visit certificate is mandatorily required to be submitted along with your bid.
2	Kindly Clarify on JV on Term. Is it allowed or not?	JV is allowed in this tender. Two parties with their experience and expertise can bid jointly.
3	Kindly Clarify the Plant Size.	2500 cum biogas output required with 110 cum for 24 h approx. which will be required to run 200 KWe CHP engine.

Prospective Bidder-2

Item No.	Query	Comments/reply
1	As the criteria mentioned is requirement for the 100 tpd project and MNRE and MoPNG is very specific, & not all bidders qualify for the same. As per the rules, the criteria should be from 30% to 80% of the project capacity, which is from 1500 m3/day to 4000 m3/day Biogas generation & 25TPD & 60TPD substrate used / treated per day respectively So we kindly request you to relax these criteria & make it 40 TPD Organic Waste.	Kindly refer to the Modified /revised NIT
2	Also, there are very few projects that are similar to this big scale in India, many of those projects are not approved by MNRE & MoPNG. But still, they are functional and working. Hence, we kindly request you to relax the criteria of MNRE & MoPNG approvals &	The govt recognised projects will be considered. Kindly refer to the modified/revised NIT dated 22.12.2021

	consider the existing operational projects running world-wide and in India eligible for the projects made in the private sector / private clients too located in India and abroad.		
3	Very few bidders are having experience in the government and PSU sector. also, this scale project in government and PSU are very restricted and also not operational. We are having broad experience in the Biogas projects which are executed in India and Abroad. We request you to waive the criteria of the selection procedure of selecting the bidders who have executed the projects in Govt / PSU's.	The govt recognised projects will be considered. Kindly refer to the modified/revised NIT dated 22.12.2021	
Prospective Bidder-3			
Item No.	Tender Specifications	Query	Comments/reply
1	The contractor whose bid is accepted will be required to furnish performance guarantee of 2% (Two Percent) of the tender amount	Nalanda University (NU) to specify validity of Performance guarantee 2%	PGB 3% , Validity for the execution period - 12 months, kindly refer to the modified/revised NIT dated 22.12.2021
2	PERFORMANCE GUARANTEE DURING O&M PERIOD:	Performance guarantee amount shall be 5% of O&M cost for 1st year and shall be renewed every year during O&M period. Nalanda University to confirm.	It will be 10% of the O&M cost. Kindly refer to the modified/revised NIT dated 22.12.2021
3	k) All civil works for Bio-methanation plant as per detailed specifications	NU is requested to provide Soil test report and Civil survey report with key plan	The tentative soil test report is already published with NIT, kindly refer to the website : https://nalandauniv.edu.in/tenders/
4	c) Uptime during maintenance contract i) 99% uptime of all systems under contract.	NU is requested to consider uptime guarantee 90% for the plant as there are many variables	Kindly refer to the revised NIT.
5	The contractor shall ensure that all DG sets comply emission norms notified by MoEF.	We understand only Gas Genset to be supplied and No DG set is included in the scope. NU to confirm.	The DG for perment and beneficial use of the University is not required to be supplied by the bidder. However, the construction power is included in the scope and same will be treated as included in the bidder offer. However, the contractor has to ensure the CPCB and others govt norms will be followed.
6	1000KWe– Dual fuel based (PNG & Biogas both)	We understand minimum 1000 Kwe is required on both PNG and biogas fuel.	Both the fuel PNG & biogas shall be used in different train to produce 1000KWe

		Hope our understanding is correct.	
7	Biogas Plant /Digester System including feed handling in the University Campus based plant designed and developed by the successful bidder.	NU to clearly define details of feed, how it will be collected, quantum of feed, collection facilities, storage facilities etc. Bio gas generation shall depend of quality of feed.	As per the tender condition for waste collection and transportation, the bidder shall provide feed material with proper quality and quantity under package 3B1. Project Officer will monitor the quality and quantity of the waste supplied.
8	Ambient temperature: 50 degree Celsius	NU to clarify whether Wet ventilation system and cooling tower is acceptable for Genset plant room	Tender condition prevails.
9	NCV for Natural Gas is considered at 8500 Kcal/m3.	NU is requested to provide Gas composition for Natural gas for selection	As per the standard provided by CGD supplier
10	CHP should run with 100% efficiency on 40% to 65% of methane gas content in biogas	The offered Genset shall be capable to operate on 40% to 65% methane content. However, NU to specify at what methane content performance data to be calculated.	Performance data to be calculated on min. to max. methane content
11	The unit of horse power as defined in this specification is the metric horse power equivalent to 4,500 n-Kg/Min. The horse power in F.P.S. system is equal to 1.014 metric horse power.	This requirement is not clear. NU to clarify.	This is the general terms and definitions provided in the tender specifications for consideration.
12	Total output with a tolerance of $\pm 5\%$.	From this statement we understand that accepted output at alternator terminal shall be 190 Kwe - 220 KW (for 200 Kwe Genset) and 950 Kwe to 1050 Kwe (for 1000 Kwe Genset). NU to confirm. NU to also confirm in case output is more than tolerance limit mentioned above, it is acceptable to NU	Tender condition prevails
13	Exhaust gas temperature with a tolerance of $\pm 2\%$.	Exhaust gas temperaure tolerance shall be ± 25 deg C. NU is requested to accept	Tender condition prevails
14	Standard conditions (Vxx) - If the turbocharger design is done for air intake temperature > 30°C w/o de-	Turbocharger and Intercooler design for Gensets shall be as per OEM standard only. NU to confirm.	Tender condition prevails

	<p>rating, the intercooler heat of the 1st stage need to be increased by 2%/°C starting from 25°C. Deviations between 25 – 30°C will be covered with the standard tolerance.</p> <ul style="list-style-type: none"> • Hot Country application (Vxxx) - If the turbocharger design is done for air intake temperature > 40°C w/o de-rating, the intercooler heat of the 1st stage needs to be increased by 2%/°C starting from 35°C. Deviations between 35 – 40°C will be covered with the standard tolerance. 		
15	Performance gas Standard reference conditions: b. Air temperature: 25°C (77°F) or 298 K	We understand performance data to be specified at 25 deg C air temperature. NU to confirm.	Agreed
16	Hot water Output : 90 Deg C (Supply Water) & 85 deg C (return water)	Hot water output shall be approx.. 85 deg C from Jacket water. NU is requested to accept.	Tender condition prevails
17	The gas engine rating shall be the net output in Kilowatt, which the engine is capable of delivering continuously at the stated crank shaft speed under the conditions specified, provided the engine is maintained in good operating condition and is service/ overhauled regularly as per the schedules laid down by the Manufacturer.	NU is requested to clarify meaning of "engine net output". Does it mean Net of auxiliaries like pump, radiator? Cooling tower and other genset auxiliaries or just net power to drive alternator capable of delivering 200 KW / 1000 KW output at alternator terminal?	Net power required to drive alternator capable of delivering 200 KW / 1000 KW output at alternator terminal
18	The Gas engine offered shall be of the regular production models of the manufacturer for industrial applications and already type tested either at the manufacturer's works or outside. The type test report shall be furnished to	Bio Gas engines are not type tested. Routine test for engine shall be conducted before dispatch. NU to confirm.	As per the CPCB, Govt Guidelines, and preferred manufacturer practise.

	the purchaser for his review if so desired.		
19	Unless otherwise specified in the equipment data sheets, the gas engine shall be provided with class A2 governing as per the latest edition of B.S. 5514.	Governing system shall be G1 / G2 class as per ISO norm. NU to confirm	Tender condition prevails
20	The "Cyclic irregularity" of the gas engine for direct coupling to an electric CHP, "angular deviation of p73 A. C. CHPs" driven by gas engine for parallel operation, and the "engine governor speed droop characteristics", shall be restricted to the values specified under the latest edition of B.S.-5514.	This requirement is not understood. NU is requested to clarify.	This is the general design and construction of the CHP specified under the latest edition of British Standard – 5514.
21	Vendor shall indicate in the bid, the ISO Noise Level rating i.e. 83 dB at 3-meter distance from the surface of Acoustic Enclosure, of the gas engine with the offered exhaust silencer/s.	From this statement, we understand gensets to be offered within acoustic enclosure. NU to confirm. NU is also requested to clarify whether acoustic enclosure shall be located outdoor or indoor within plant building.	As per the suitability, vendor to specify.
22	Where the gas engine is specified / offered with compressed air starting, the Vendor shall also provide the air compressor driven by a gas engine / electric motor and equipped with necessary instruments and controls as specified in the equipment data sheets.	Gas Engines shall be Battery starting. NU to confirm.	Tender condition prevails
23	A bio-gas float (surge) tank if recommended by the manufacturer, shall be supplied with the gas engine along with its interconnecting piping / hoses.	NU to note that Gas engine manufacturer specifies only the Gas engine package which is impored scope. Any additional auxiliaries, tanks etc. shall be as per bidder's / client's discretion	Tender condition prevails

24	Biogas holder of suitable retention time shall be provided.	Bio gas holder shall be out of Gas engine package. Bidder / Client have to decide on capacity of gas holder. NU.to specify the gas holder volume required	Tender condition prevails
25	The Synchronising Panel as a System shall be provided with Synchronizing Relay & Load Sharing Relay & all required accessories including digital meters, transducers, sensors, sensor cables, control cables, hardware, software etc which shall facilitate Synchronizing & load sharing of Power between Local Sources (i.e. Grid, DG, Solar etc) & the CHP.	NU is requested to share Electrical SLD of the plant	Bidder need to provide the complete detailed engineering for the plant
26	(Note: Logic shall be set so in normal mode if load is up to capability of CHP than only CHP shall supply the power, if load increases than CHP + GRID shall supply the power in synchronizing & in case of grid failure based on load either (in priority) CHP shall feed the power or Dg Set + CHP shall feed the power in synchronizing to the load)	Is there any DG to be supplied by bidder? What is the capacity? NU to clarify.	<p>The DG will not be supplied by the bidder.</p> <p>The existing DG set for 200KW CHP is 200KVA X2 + Transformer size 500KVA x2,</p> <p>Whereas, the DG set size 1250KVAX2 + 250KVAX1 + 1250KVAX2 wherein 1000KW CHP is proposed. In order to meet the control logic requirement, whatever will be the software & hardware requirement for the plant, shall be in the scope of bidder unless, specified clearly.</p>
27	All control valves & accessories should be BMS compatible.	This requirement is not clear. The control valves for Engine is controlled by Engine controller and other control valves as required for CHP package shall be controlled by PLC provided by bidder. NU can take data from the PLC to their BMS if required. NU to confirm.	Tender condition prevails
28	Exhaust Silencer, Exhaust piping from CHP to stack / chimney via silencer,	Chimney shall be structurally supported within common M.S structure duly painted.	Tender condition prevails

	Support structure for the piping, Condensate drainage at silencer and system low points, structurally supported 30.5 m high exhaust gas Stack / Chimney with Aviation Light and Lightening arrestor arrangement. Chimney/ Stack shall be with Hot Dip Galvanized MS pipe and with Acoustic Layer to provide sound insulation.	Hot dip galvanization on chimney is not required. The exhaust duct and silencer upto chimney shall be insulated with LRB to avoid risk of high temperature. Acoustic insulation of chimney is not required. NU to confirm.	
29	Scope of cables including laying and terminations from output of CHP engine up to Sync. Panel. Synchronisation Panels as required shall be supplied by the CHP Vendor. Cabling from the CHP output to the nearest substation shall be in the contractor's scope including power and control cable laying, terminations, glands, clamping, trenching/ refilling etc.	NU to clarify cable distance between CHP and nearest substation. Also NU to specify in SLD how connection between Incomer breaker of Genset and substation to be made.	Kindly refer to the SLD/Drawings and ensure the site visit to understand the works.
30	1. Supplying, installation testing and commissioning of ester oil transformers or dry type transformers for: • CHP Step Up Transformer	NU to specify in SLD the requirement for Step Up transformer.	NIT conditions prevails. The requirement for the plant shall be the scope of bidder and required to provide all the details for the completion of plant in all aspects satisfactorily.
31	Flux density at rated voltage shall be limited to 1.6Tesla (max)at rated voltage and frequency.	Flux density and other related parameters shall be as per Transformer manufacturer's standard design. NU to confirm.	Tender condition prevails
32	The stators windings shall be brought out to four insulated terminals in two separate terminal boxes	The stator windings shall be brought out to one terminal box as per OEM standard design. NU to confirm.	Tender condition prevails
33	n. The CHP shall have the exhaust gas confirming to CPCP emission norms for Bio-Gas engines.	There are no norms for Bio gas genset emission as per CPCB norm. However, in our Genset, Nox shall be less than 500 mg/NM3 at 5% O2 dry. NU to confirm.	Acceptable

34	Service Prime power.	NU to note that offered gas engines are for continuous duty and Prime power is not applicable. NU to confirm.	Agreed
35	Type: Radiator cooled set.	NU to clarify design temperature for Gas Genset	Bidder to specify the details
36	Specific bio-gas oil consumption (gm/BHP/hr)	Bio gas is gas and not oil and is measured in Nm3 / Hr. Hence the given unit is not applicable. NU to specify the methane content in bio gas to calculate bio gas consumption.	Accepted
37	Bio-gas Consumption at full load At 75% / 50% / 25% in Ltrs / Hr. including bio-gas required	NU to note that Gas genset data is provided at 100% load, 75% load and 50% load. Data at 25% load is not applicable. Also, unit of measurement shall be NM3/Hr. NU to confirm.	Acceptable
38	Qty of Lub. Oil required	Whether NU is asking for sump quantity for Lube oil? NU to clarify.	Vendor to specify the details as per the requirement
39	Class of insulation - A) Starter – F, B) Rotor - F	Insulation class shall be class H for 415 V genset. NU to confirm.	Tender condition prevails
40	Degree of protection: Screen protected, drip proof.	Degree of protection shall be IP 23. NU to confirm.	Tender condition prevails
41	DD. Synchronizing / AMF Panels	We shall provide synchronizing relay having AMF facility. NU to confirm	Tender condition prevails
42	Guarantee	NU is requested to consider the term "Warranty" in place of Guarantee	Tender condition prevails
43	If there is a downtime in the system then the contractor shall be liable to pay a penalty of Rs 1500 per hour for every hour of downtime other than for regular maintenance after 5000 hrs.	The bio gas generation shall depend on availability of feed materials and quality / quantity etc. which are not in bidder's control. Hence NU is requested to waive off penalty clause. NU to confirm.	Tender condition prevails
44	The Gas cascade system shall comprise of Gas cylinders, interconnecting pipes, Cascade Frame, Base Support, Lifting	Requirement of this system is not understood. NU to clarify.	The multipurpose aim especially for the exigency circumstances are: I. Mainly for the transportation of CNG/PNG gas from nearest /suitable station, II.

	arrangement for Cascade, Necessary pressure gauges, Valves, inlet and outlet manifold in SS 316 / Brass material, etc. The Cylinder shall be made out of High Pressure seamless steel and the cylinder shall confirm to IS: 7285 Part II- Latest revision. All the tests mentioned in the IS code shall be done during manufacturing and shall be submitted along with the invoice. The Cylinder shall be coated with epoxy paint of approved quality to safeguard the cylinder from rusting.		Otherwise also for the storage of gas, and III, change of sources in case of dual system especially for 1000KW CHP,
45	Biomethanation plant a. Nominal system voltage - 110V bipolar DC b. Rated system voltage - 1.8kV c. Frequency - 50Hz \pm 3% d. No. of phases – 2pole + earth e. System neutral - Solidly earthed	NU to clarify where 110 V DCDB system is required. NU is requested to provide SLD highlighting connection point.	Vendor to specify the details as per the requirement
46	The UPS system shall be of microprocessor based and so carefully designed to maximize the availability of power for critical loads	NU to specify UPS capacity and back up time	Bidder to decide the capacity. 200KWe CHP engine shall run for 24 h
47	CIVIL WORKS SPECIFICATIONS Air - Washer: Eminent Engineers	NU is requested to include Air washer makes as per bidder's standard supplier (Waves / Zeco / S.N Air / Ventech/ Equivalent)	Tender condition prevails
48	Lube Oil Transfer Pump	NU is requested to include PEC make pump	Tender condition prevails
49	General	NU is requested to provide key plant layout showing location and distances of all equipment and building	Kindly refer to the published SLD and Drawings. Ensure site visit to understand the requirement and scope of work. Submit form G.
50	General	Whether Lodging, Boarding of Operation / AMC personnel shall be provided by NU or in bidder's scope?	Scope of bidder

51	General	Operation philosophy and operating hours to be considered for 1000 KW and 200 KW gensets	Bidder to provide the details
52	Technical Eligibility: The Bidder should have successfully executed job as, Engineering, procurement, and construction (EPC) / Licensor, engineering, procurement, and construction (LEPC) / Engineering, procurement construction management (EPCM) contractor for <ul style="list-style-type: none"> • Biogas plant which includes Digester or tanks 	The eligibility criteria is very stringent, hence requested NU to relax the criteria for competitive bidding as under - Bidder should have successfully executed (supply, Installation, Tested and Commissioned) 1 no. bio gas-based power plant of minimum 1200 KWe and the same should be in successful operation in India. The biogas plant should comprise of biogas genset, its BOP with heat recovery and other accessories. Heat Recovery can be in the form of steam generation or with VAM or Hot water generation. We hope our request for providing relaxation in BQC will be considered.	Kindly refer to the revised NIT
Prospective Bidder-4			
Item No.	Tender Specifications	Query	Comments/reply
1	Last time and date of submission of bid: 03.12.2021 up to 3.30 pm	This looks like a Typo mistake. This should be read as Online by: 23/12/2021 up to 3:00 PM	Please refer to the web-portal and modified/revised NIT with extended date/corrigendum, the last date and time of submission of bid is 24.01.2022 up to 3.00 pm
2	Gas generation this includes the segregation and processing of Organic feed for the Bio-methanation plant at the digester site, operation and maintenance to undertake the biogas generation of requisite quality	Segregation shall be the scope of waste supplier. At least 90% of the raw material shall be segregated and supplied at site for smooth running of the biogas plant by waste supplier.	NIT condition prevails
3	While submitting the offer, the intending bidder has to consider the co-ordination and providing requirement	The change in feed material types on seasonal basis shall be informed to the bidders before the award of contract.	NIT condition prevails.

	of feed in different combination in consultation with the feed collecting mechanism considering seasonal and impact for waste/feed viability in local vicinity for optimal generation of the gas.		As specified in the tender that both the parties shall conduct site visit and check the available feed material to generate required quantity of biogas. Depending on the available seasonal feed material in the vicinity of 150 Km from NU campus waste collection and transportation bidder will supply the feed material under sperate tender package 3B1 for biogas generation. A site visit certificate is mandatorily required to be submitted along with your bid.
4	For the submission of the hard copy by the 24.12.2021. 3:00 PM,	The submission date for physical copy should be extended by one week for submission of hard copies. i.e., Up to 31.12.2021	Tender condition prevails. The physical /hard copy of the technical bid with ink sign in a sealed envelope should be submitted by 3:30PM, 28.01.2022.
5	FINANCIAL INFORMATION The bidder shall furnish the Annual Financial Statements for the last five (5) years ending 31st March 2020 in "Form A".	This may be read as "ending 31.03.2021"	As per CPWD rules and guidelines
6	Requirement of technical Staff	As it is only 5000 cum plant one Graduate Mechanical Engineer and One Graduate Electrical Engineers are sufficient instead of 2 each in both the categories asked.	Changes are accepted
7	Total Time allowed for execution of work – 12 months	Total time shall be allowed up to 14 months	Tender condition prevails.
8	Page No.165, Payment terms	The payment terms of All other items shall also be considered same as Machinery & Equipment with 80, 10,5 &5%, respectively instead of 70,20,5&5%.	Tender condition prevails.
9	The Owner shall release 75% of the value of the interim bill submitted by the contractor immediately on adhoc basis on preliminary scrutiny of the bill by Engineer-in-charge. Such adhoc payment shall be regarded as the	The payment against each stage of work shall be released within seven days of submission of bill.	Changes are accepted.

	advance payments against the submitted bill. The balance amount shall be released within 15 (Fifteen) working days after the verification in detail by the Engineer-in-charge		
10	CAMPUS WASTE MANAGEMENT: The successful bidder will design and formulate the campus waste management required for the bio digester feed as much as possible from the University campus.	It shall be the scope of waste supplier and segregated waste shall be supplied to the plant location in the campus.	As per the Waste Collection and Transportation tender under tender package 3B1 , the successful bidder has to collect segregated waste from university campus and provide at dedicated location at Biogas site.
11	General	1. Waste material supply and its characteristics define the output of biogas on daily basis. Hence the supply of raw material supply shall be on daily basis without any interruption. It is not clear in tender the quantity that to be supplied to the biogas plant. Quantity helps to design the size of the plant.	As specified in the tender that both the parties shall conduct site visit and check the available feed material to generate required quantity of biogas. Depending on the available seasonal feed material in the vicinity of 150 Km from NU campus waste collection and transportation bidder under tender package 3B1 will supply the feed material for biogas generation. Depending on the site survey and available seasonal feed material, bidder should design their biogas plant accordingly under tender package 3B .
General			
01	Integrity Pact – Conflict of Interest	Integrity Pact – Conflict of Interest	The conflict of Interest must be avoided in any means by the participating/intending bidders. The influence /intervention in the bidding process shall not be acceptable in any means.