



**TERMS OF REFERENCE FOR
SUPPLY AND INSTALLATION OF GENERATOR SET**

Project : **SUPPLY AND INSTALLATION OF GENERATOR SET**
Location : School of Health Sciences
Baler, Aurora
University of the Philippines Manila



I. Introduction

SHS Baler Aurora is one of the three (3) campuses of the School of Health and Sciences, the two other being SHS Palo, Leyte, the main campus, and the SHS Koronadal in South Cotabato.

Establishment of the School of Health and Sciences in these locations addressed the geographical distribution of the school to make it accessible to communities that need health professionals. This project aims to provide continuous power supply for two building: the Academic Building and the Administration Building.

II. Project Description

Project Name : SUPPLY AND INSTALLATION OF GENERATOR SET
Location : School of Health Sciences
Baler, Aurora
University of the Philippines Manila

Floor Area

Main Building : 674.28 square meters
Extension Building : 1,238.75 square meters
Owner : University of the Philippines Manila
Implementing Agency : CPDMO, University of the Philippines Manila

Project Cost : PhP 7,067,171.91 (Seven Million Sixty Seven Thousand One Hundred Seventy One and 91/100 Pesos Only)

III. Project Requirements

- Supply, Delivery, Installation, Testing and Commissioning of Generator Set
- Load Test Report
- As Built Plans (3 sets)
- Schedule of Maintenance/Monitoring Activity

- Warranty Certificate
- Guarantee Certificate
- Certificate of Compliance
- Mechanical Permit
- Manuals
- Permit to Operate

Qualification and Documentary Requirements:

Qualification Requirement	Documentary Requirement
1. The engine of the quoted brand/model of prospective Genset contractor shall be manufactured from any member countries of Organisation for Economic Co-operation and Development (OECD)	Submission of related documents indicating the origin of the engine of the quoted brand/model of Genset.
2. The quoted brand/model of prospective Genset contractor shall be in the Philippine market for a minimum of two (2) years	Submission of related documents (e.g. previous Purchase Orders, Contracts, or Certificate)
3. The Genset contractor shall provide Satisfactory Service to its customers	a. Satisfactory rating issued by at least three (3) previous clients of the prospective Genset contractor
4. The Genset contractor shall have the following mandatory requirement: a. In-house electrical & mechanical shop; b. In-house load bank; c. Parts inventory for consumables & emergency repair/major overhauling; d. 24 hours service crew for emergency repair	Certification that the prospective Genset contractor has the said requirements
5. The Genset contractor shall have highly trained technicians who are its regular employees	List of at least 3 highly trained technicians with their respective bio-data
6. List of quoted brand/model shall have authorized service center located within the area of the project site/s. (NCR)	List of at least one (1) service center in Area (with complete address and contact numbers).
7. The contractor must be an authorized distributor of the offered product	Manufacturer's Authorization or Back-to-Back Certification
8. The offered product must have brochures showing the product complete specifications	Official brochure of the offered brand/model (colored computer print-outs shall not be allowed)
9. The offered product or its manufacturer must be authorized and certified by the approving/governing body	Bureau of Product Standards (PS), Underwriters Laboratories (UL), European Conformity (CE) or ISO certifications, whichever is available
10. The Generator Set being offered by the supplier contractor should be Original Design Manufacturer (ODM) or Corporate Set	Certification from the principal confirming that the offered genset is an Original Design Manufacturer (ODM) to be submitted by the prospective bidder/contractor
11. The engine of the Generator Set origin being offered by the supplier/contractor should be from OECD	Certificate of Origin issued by the engine manufacturer to be submitted by the prospective bidder/contractor.
12. The Generator Set being offered should have local representative with certified technician and spare parts available for the next five years.	Certification from principal or Agreement between the principal and prospective bidder/contract must be submitted.

13. The Generator Set supplier/contractor should have special tools to configure and repair engine/genset.	Certification from the prospective bidder/contractor that special tools for the repair and configure the engine/genset are available in their workshop
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IV. Definition of Terms

- a. OWNER and End User shall mean the University of the Philippines Manila.
- b. IMPLEMENTING AGENCY shall mean the CPDMO.
- c. CONTRACTOR shall mean the exclusive or authorized dealer and service center of both engine of the offered generator set and the offered generator set itself, ISO certified or at least a holder of ISO Attestation certificate and a PCAB License holder. The CONTRACTOR shall be owned and managed by professionals qualified to undertake work in the fields of engineering and allied services, engaged by the University for the PROJECT.
- d. DESIGN BRIEF shall mean the document containing all design parameters, design definitive, design guidelines, spatial requirements, schematic designs, massing studies, outline specifications and other relevant data pertaining to the architectural and engineering design of the PROJECT.
- e. CONTRACT shall mean the written agreement entered into between the OWNER, the DESIGN CONSULTANT, or individuals or companies, for the purpose of planning, designing and/or constructing the PROJECT.
- f. CONTRACT DOCUMENTS shall mean the agreements or CONTRACTS, including General Conditions, Special Conditions and the drawings, plans and specifications for the execution of the work, as well as any and all documents which are referred to in the CONTRACTS as CONTRACT DOCUMENTS, or any modifications, revisions or alterations authorized by the OWNER and agreed to by the CONTRACTOR/SUPPLIER during the negotiation.
- g. CONSTRUCTION MANAGEMENT TEAM shall mean the construction management consultant authorized by the OWNER to oversee the execution of the PROJECT. The CONSTRUCTION MANAGEMENT TEAM shall be composed of personnel who are responsible for the management and execution of its duties and responsibilities in relation to the PROJECT.
- h. PROJECT or WORK shall mean all the works/activities and/or scope of works to be performed and completed as well as any revisions, alterations and any extra work ordered to be done by the OWNER under the CONTRACT.
- i. PROJECT SITE shall mean the place or area where the WORK is or will be carried out.

V. Scope of Services

1. Supply, delivery and installation	<ul style="list-style-type: none"> • Mobilization of manpower and equipment/tools on the above mentioned UP Manila Buildings • 345KVA, Three Phase, 80% PF, 1800 rpm, 230VAC, Diesel Generating Unit
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	<ul style="list-style-type: none">• Appropriate length of wires per line, size of wire mm² THHN and mmØ dia liquid tight Flexible Metallic Tubing• Installation, testing and commissioning• Cleaning-up works and demobilization	
2. Installation Schedule	Any day and time or per coordination with end-user/s	
3. Installation Period	Thirty (30) calendar days per building upon receipt of Notice to Proceed (NTP) or availability of project site whichever is applicable	
4. Documentary Requirements		
Document	Description	Due Date of Submission
a. Load Test Report (Annex A)	Duly accomplished form showing the electrical and mechanical parameters of the generator set	Upon Completion
b. As-built plans (signed and sealed by PME) – 3 sets	Plans showing the locations of generator set	Upon Completion
c. Schedule of Maintenance/ Monitoring Activities	Schedule for preventive maintenance	Upon Completion
d. Warranty Certificate	Warranty Certificate with inclusive date	Upon Completion
e. Guarantee Certificate	Certificate that the spare parts and components including the aftersales services/supports that may be required by the UPManila to ensure the continuous and normal operation of the equipment shall be available in the next five (5) years from the date of commissioning	Upon Completion
f. Mechanical Permit	The supplier/contractor shall be the one to secure the Mechanical Permit.	Upon Completion
g. Photocopy of Certificate of Compliance (COC) and Official Receipt (OR)	Photocopy of the duly accomplished form and OR as submitted to the Energy Regulatory Commission (ERC) as proof that the supplier has filed the said COC as required by ERC, secure certificate/clearance from EMB as deem required before the installation	Upon Completion
h. Manuals	Operation and Preventive Maintenance Manual	Upon Completion
5. Training	Conduct familiarization seminar/training to orient the end-user on the basic concept, functions and operation of the equipment installed	
6. Warranty	One (1) year warranty against factory/manufacturing defects on equipment, components and parts supplied and against faulty workmanship to commence upon receipt of final turn-over and acceptance documents. All equipment, parts and components found defective during and within the warranty period shall be immediately replaced without additional cost to UPManila.	
7. Maintenance	At least twice a year within the warranty period, the Genset contractor shall provide the standard warranty servicing for the installed equipment and its components (check-up and general cleaning of Genset which includes change oil, filters, other consumables, etc. incl. the unit's	

	mechanical/electrical components as recommended by the genset manufacturer).
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Technical and Other Requirements:

ENGINE SPECIFICATION

Particulars	Unit	
Fuel Type		Diesel
Engine Model		6090HFU84
Constant Power		286kw/384 BHP
Maximum Power		315kw/422 BHP
Engine Speed		1800 rpm
Engine type		4-cycle Direct
Cooling		Water Cooled
Aspiration		Turbo, Air – Air
Cylinder Arrangement		6 cylinders, in-line
Displacement		6.81
Bore and Stroke		106 x 127 mm
Compression ratio		16.0:1
Governor Type		Electronic
Governor Regulation		0%

COOLING SYSTEM

Ambient design, °C		40
Radiator Capacity		44.61
Engine Jacket Capacity		44.01
Total Coolant Capacity		88.61
Thermostat		82° - 94° C
Max Top Tank Temp		110° C

FUEL AND LUBRICATION SYSTEM

Fuel Pump		HP4
Fuel Consumption		
110% (ESP) Load		75.3 l/hr
100% (PRP) Load		69.9 l/hr
75% (PRP) Load		59.2 l/hr
50% (PRP) Load		42.4 l/hr
25% (PRP) Load		21.1 l/hr

AIR INDUCTION AND EXHAUST SYSTEM

Intake Air Flow		24.2 m³/m
Exhaust Air Flow		58.6 m³/m
Exhaust Temperature		499° C

ELECTRICAL SYSTEM

Battery Charging alternator		
Ground		Negative
Volts (DC)		24 V
Ampere Rating		750 amp
ALTERNATOR SPECIFICATION		
Alternator Model		HC144C
Exciter type		Brushless Self Excited
Power Factor		0.8
AVR Model		AS440
Voltage Regulation		±1.0%
Type		4 poles
Insulation Class		H
Drip Proof		IP23
Number of terminal		12
Altitude		≤1000 m a s l
Winding Pitch		2/3
Max Over Speed		2250
Number of Bearing		2
Telephone Interference TIF		<50
Recovery Time		≤.5
Total Harmonic		≤2%
Air Cooling Flow		.99 m³/s
HOUSING /ENCLOSURE TYPE		
		Soundproof & weather proof,GA#14 GI/BI plate
		sound absorbing, heat retardant rebounded foam
		Oil resistant & heat retardant polyurethane foam
		Finished in green and yellow baked/powder coat
		Finished, with no accessible metering control
		Outside except for the emergency push button
		Engine stop
CONTROL PANEL TYPE		
		Deepsea DSE6020 is an Auto Mains (Utility) Failure Control; Module. Monitoring Speed, frequency, voltage, current, oil pressure, coolant temperature and fuel level, the module will display warnings, shutdown and engine status information on the back-lit LCD screen and illuminated LED
DIMENSION AND WEIGHT/HOUSING		
Overall Size:		4460 x 1100 x 2200 (mm)
Dry Weight		4300 kg
Noise Level		≤72 dBA at 7 meters
Fuel Tank Capacity		515 liters
Enclosure		Soundproof Type
EXHAUST SYSTEM		
		Heavy duty residential capacity exhaust silencer
		muffler with suitable flanges and flexible

	section
	To connect between engine outlet muffler or
	Standard absorption type and flexible exhaust
	Pipe supplied loose
STANDBY GENERATOR	Applicable for supplying electrical power
	(at variable load) in the event of public supply
	Failure for the duration of the emergency.

VI. Contractor's Qualifications

- Prospective bidders/contractors must be an exclusive or authorized dealer and service center of both engine of the offered generator set and the offered generator set itself.
- Prospective bidders/contractors must be a PCAB License holder.
- Prospective bidders/contractors must be ISO 9001:2015 certified or at least a holder of ISO Attestation certificate.

VII. Proposal Structure and Evaluation

The procurement of the consulting services, including its processes, requirements for eligibility, bid proposal structure and evaluation by the infrastructure Bids and Awards Committee of the University of the Philippines Manila (UPM-BAC2), shall be governed by RA 9184, otherwise known as the Government Procurement Reform Act, and its implementing rules and regulations and amendments.

Prospective bidders must therefore prepare their respective technical and financial proposals accordingly.

Eligibility of prospective bidders shall be checked using non-discretionary "pass/fail" criteria. Short listing of eligible consultants will be done based on the following criteria: experience of the consultant, qualification of personnel and current workload. Only five (5) eligible bidders shall make up the shortlist.

The eligible bidders technical proposal shall be evaluated by the Technical Working Group created for this specific project. The criteria for evaluation is enumerated in the architects brief.

The evaluation should not exceed 15 calendar days. The evaluation procedure to be adopted for shortlisted bidders shall be Quality-Cost Based Evaluation/Selection (QCBE/QCBS).

The OWNER shall indicate the numerical weights to be allocated for the Technical and Financial Proposals.

VIII. General Design Description

One (1) unit – Supply, Delivery, Installation, Testing and Commissioning of 345kva/276kw three phase, 80% PF, 1800 rpm, 230VAC, Diesel Generating Unit complete with standard accessories per manufacturer's standards for SHS Campus Baler Compound, University of the Philippines, Manila.

IX. Overall Project Time Schedule

The CONTRACTOR shall fulfill the Supply, Delivery, Installation, Testing and Commissioning of the PROJECT in **Thirty (30) Calendar Days** from the date of the issuance of the Notice of Award.

X. The Contractor's General Responsibility

- a. The CONTRACTOR are encouraged to inspect, verify and assess the condition, location and details of the project;
- b. All works shall conform to the provisions (latest edition) of the Philippine Mechanical, Electrical and Building Codes, the Clean Air Act, Environmental Laws and other applicable laws and regulations;
- c. In line with the UP Manila Environmental Management System (EMS) program, the CONTRACTOR are required to use appropriate equipment, hand tools and personal protective gears and equipment during the implementation of PROJECT;
- d. Generator set shall be installed in approximate location as shown in the mechanical/electrical layout supervised by licensed engineer knowledgeable and with experienced in installation of Gen-Set;
- e. Any proposed change or deviation from the original mechanical/layout plans or specifications either initiated by the mechanical CONTRACTOR, the End-user or due to actual site condition, must be submitted to IMPLEMENTING AGENCY (in the form of shop drawings) for approval prior to implementation;
- f. The CONTRACTOR should coordinate his works closely with the works of other trades concerned;
- g. Installation of works shall be done in neat workmanship and like manners. All improperly set works, rough finishes or other works not in accordance with the approved layouts and scope of works as determined by the IMPLEMENTING AGENCY engineer or technical representative/s shall be removed and replaced within seven (7) calendar days by the CONTRACTOR at no extra cost;
- h. The CONTRACTOR shall provide all the necessary components or accessories, e.g., brackets, clamps, fasteners, etc., to ensure the safe, normal and efficient operation of the installed Genset;
- i. The CONTRACTOR shall properly account and turn-over all dismantled/ replaced materials to the IMPLEMENTING AGENCY or its authorized representative/s;
- j. The CONTRACTOR shall exercise extreme caution and be responsible in the hauling/transfer, installation, testing and commissioning of the equipment to prevent damage to OWNER's properties. The corresponding cost to repair or replace the OWNER's equipment, facilities including parts and components damaged or lost by the CONTRACTOR or its workers during the course of the project shall be deductible/chargeable to the CONTRACTOR;
- k. The CONTRACTOR shall be liable for any harm, damage or injury that may be sustained or suffered by its own crew/workers while in the performance of their duties/job under this project;
- l. The CONTRACTOR shall be held directly responsible for any injury to person and/or damage to OWNER's property arising from the act, whether partial, contributory, or due entirely to the fault, negligence and/or dishonesty of the contractor's personnel in the course of their duties;

- m. The CONTRACTOR shall maintain cleanliness of all workplace at all times. They shall clean the affected areas immediately after each workday;
- n. The CONTRACTOR shall conduct familiarization seminar/training to orient the end-user on the basic concept, functions, operation and maintenance of the equipment installed;
- o. The CONTRACTOR is required to submit the names of its worker who will conduct or inspect the installation. As maybe required, identification cards shall be presented;
- p. The CONTRACTOR or its engineer/foreman shall coordinate with the IMPLEMENTING AGENCY or its authorized representative/s to discuss the work activities prior to implementation of this project;
- q. The CONTRACTOR shall strictly observe the UP Manila existing rules and regulations and shall be subject to the UP Manila standard security policies and procedures while inside the UP Manila premises;
- r. The following set of tools shall be given by the CONTRACTOR to the UP Manila per project:
 - One (1) set of adjustable wrench (open);
 - One (1) set screwdriver (flat and cross);
 - One (1) set pliers (flat and longnose);
 - One (1) vice grip;
 - One (1) filter wrench
- s. Payment of construction bond (if applicable) shall be charged on the account of the CONTRACTOR; shall make available its engineer/technicians on site within three (3) calendar days upon receipt of telephone report by the UP Manila representative concerned at no extra cost on the part of the UP Manila;
- t. In the event that the CONTRACTOR fails to perform the services indicated in the maintenance schedule during service calls, the OWNER may engage the services of other CONTRACTOR to perform the job. The corresponding cost that will be incurred for the servicing shall be deducted from the CONTRACTOR's retention money. This however, shall not void the warranty of the Genset unit supplied by the CONTRACTOR.
- u. Only the plans approved by the University shall be signed and sealed by the CONTRACTOR and thereafter shall be the plans used for the PROJECT.

XI. The Implementing Agency's General Responsibility

- a. The IMPLEMENTING AGENCY, with the assistance of the END-USER, shall provide the CONTRACTOR with full information regarding the requirements of the PROJECT.
- b. The OWNER, through the facilitation of the IMPLEMENTING AGENCY, shall ensure the availability, programming and allocation of funds for the payment of the services of the CONTRACTOR.

- c. The IMPLEMENTING AGENCY shall coordinate with the CONTRACTOR, the END-USER and the OWNER in regard to the design and implementation of the PROJECT.
- d. The IMPLEMENTING AGENCY shall assist in the coordination of the CONTRACTOR with various utility agencies in regard to the design and subsequent construction of the PROJECT.
- e. The IMPLEMENTING AGENCY shall assist in the evaluation of technical and financial bids for the engineering design of the PROJECT.
- f. The IMPLEMENTING AGENCY shall facilitate the proper implementation of the PROJECT, in coordination with the CONTRACTOR, the END-USER and the OWNER, in compliance with approved construction plans, specifications and budget.

XII. Codes and Standards

The PROJECT shall be designed, engineered, installed, tested, commissioned and turned over in conformity with the general policies of the University of the Philippines Manila and with the provisions (latest edition) of the Philippine Mechanical, Electrical and Building Codes, the Clean Air Act, Environmental Laws and other applicable laws and regulations.

XIII. Mode of Payment

1. Request for payment shall be processed after the final turn-over and acceptance of the project and upon submission of complete billing documents required by the UP Manila Procurement Department.
2. Partial payment may be allowed upon request of the supplier stating justifiable reason/s subject to evaluation and recommendation of CPDMO.

XIV. Submission Information

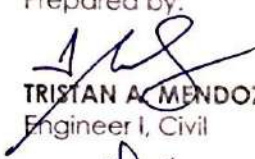
The BAC Activities for this PROJECT's procurement, in accordance with these Terms of Reference, shall be as follows:

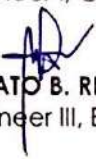
<i>Pre-bid Conference</i>	:	_____
<i>Receipt of Technical and Financial Proposals</i>	:	_____
<i>Opening of Technical Proposals</i>	:	_____
<i>Opening of Financial Proposals</i>	:	_____

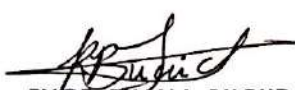
The Pre-bid Conference, as well as all pertinent submissions, shall be at the 8th Floor, PGH Building, U.P. Manila BAC 2 Secretary Office, Taft Avenue, Manila, University of the Philippines Manila. All payments shall be made at the UPM Cashier.

The University of the Philippines assumes no responsibility whatsoever to compensate or indemnify bidders for any expenses incurred in the preparation of their bids.


Prepared by:


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
Recommending Approval:

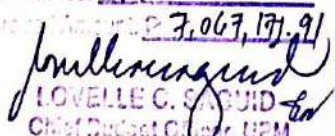

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 **MAR 04 2019**

BUDGET CLEARANCE
Fund Source: <u>RF</u>
Amount: <u>P 7,067,171.91</u>
 LOVELLE C. SANGUID Chief Budget Officer, UPM
Date: <u>2/21/19</u>

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