



TERMS OF REFERENCE

PURCHASE OF MACHINERY AND EQUIPMENT (SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF 750 KVA STANDBY GENSET, TRANSFER SWITCHES, DISTRIBUTION PANELS, INCLUDING GENERATOR HOUSE AND UNDERGROUND CABLING)

I. BACKGROUND

The University's electricity is supplied by the sole electric power provider in the province. With the increasing power demand and due to the unreliable power supply and frequent interruptions, productivity of classes and office works are heavily affected; only the Administration Building has a stand-by generator. As such, continuous power supply is vital to support the electrical needs of classrooms and offices.

To address this problem, the University proposes to produce and install 750 KVA Standby Diesel Generator Set with Generator House.

II. PROJECT DESCRIPTION

The project: PURCHASE OF MACHINERY AND EQUIPMENT (SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF 750 KVA STANDBY GENSET, TRANSFER SWITCHES, DISTRIBUTION PANELS, INCLUDING GENERATOR HOUSE AND UNDERGROUND CABLING). The project duration is for a period of one hundred twenty (120) calendar days.

The Standby Genset will supply emergency power to selected buildings, viz: College of Business and Accountancy (CBA) Building, Entrepreneurship Building, College of Information and Communications Technology (CICT) Building, Motorpool, PG Tabuzo Building, College of Arts and Sciences (CAS) Laboratory Building, College of Arts and Sciences (CAS) Building A and B, Main Library, E-Library, College of Education Proper, College of Education- High School Building, Home Economics Building and with provision for future infrastructures to be constructed inside the University Campus.

III. SCOPE OF WORK

1. Supply, delivery, installation, testing and commissioning of one (1) unit 750 KVA Silent type Standby Diesel Genset complete with accessories. Standard accessories shall include but not limited to the following:
 - Heavy-duty steel skid type base frame
 - Subbase fuel tank (12 hrs. capacity)
 - Unit mounted tropical capacity radiator with engine driven blower fan
 - Electric starting systems complete with heavy duty lead acid type starting batteries, battery mounting frame and battery cables
 - High-capacity air, fuel and lubricating oil filters – all dry type
 - Exhausts muffler
 - Battery charging alternator engine driven
 - Lubricating oil and battery solution



- Complete set of operation and instruction manual engine, alternator and control panel
- 2. Supply, construction and installation of exhaust system for Generator set.
- 3. Supply and installation of Electrical writings from Generator set to Distribution Panels.
- 4. Construction of Generator house (see detailed scope of work).
- 5. Supply and installation of Transfer switches at selected buildings.
- 6. Supply, construction and installation of Underground Cabling system from Generator house to selected buildings (see detailed scope of work)
- 7. Supply of fuel for testing and commissioning of Generator set.
- 8. Testing and commissioning of Emergency Power Supply System.

IV. SPECIFICATIONS

1. Generator Set Specifications

GENSET	Prime Power (kW/kVA)	545kW/600kVA
	Standby Power (kW/kVA)	600kW/750kVA
	Rated Voltage (V)	230V
	Rated Frequency (Hz)	60
	Rated Speed (RPM)	1800
	Power Factor	.8LAG
	Dimension (mm) (L x W x H)	4300 x 1900 x 2300
	Genset Weight (kg)	6500
ENGINE	Number of Cylinders	6 in line
	Cycle	Four stroke
	Aspiration	Turbocharged, & air to air intercooled; direct injection
	Bore x Stroke (mm)	159*159
	Displacement (l)	18.9
	Starting method	24V Electric Motor Starters
	Speed Governor	Electronic
	Fuel Consumption @100% load, prime load	Water-cooled system
	Compression Rate	161L/h
	Lube Oil Capacity	13.1
ALTERNATOR	Cooling way	50
	Excitation way	Axial, Self-ventilated
	Connecting type	Self-excited, Brushless
	Insulator	H degree

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	Enclosure Class	IP23
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2. Operating Characteristics

The Generator unit shall be capable of providing the specified continuous power output under the most adverse ambient condition as specified in the technical specifications.

Speed and voltage control systems shall be designed to maintain the frequency and voltage within acceptable limits for the following loading conditions:

- a. Under steady state (i.e., slowly changing) conditions, the frequency and voltage within acceptable limits for the following loading conditions.
- b. At no time during any loading sequences shall the voltage fall below 85 percent of rated value and frequency fall below 95 percent of rated value.

3. Sound Control

The supplier shall ensure the sound level of equipment covered by this specification are within the permissible limits for personnel as defined in DOLE's Occupational Safety & Health Standards for Noise and contractual requirements for overall school noise levels.

The sound pressure level for the diesel generating set and auxiliary equipment shall not exceed 85dBA measure at 1 meter distance from any point around unit's enclosure or source.

Sound pressure levels shall be indicated in contractor's proposal for review and evaluation of CatSU.

If the supplier expects the maximum sound level of the equipment to exceed the specified level at a distance of 1 meter, the contractor shall use acoustical treatment features, subject to review of the university, to achieve the sound control design objectives.

V. CONTRACTOR'S ELIGIBILITY

The prospective bidder must possess the following **minimum** qualifications to be eligible to participate in this public bidding, to wit:

- (a) Duly licensed Filipino citizen/sole proprietorships;
- (b) Partnerships duly organized under the laws of the Philippines and of which at least sixty percent (60%) of the interest belongs to citizens of the Philippines;
- (c) Corporations duly organized under the laws of the Philippines and of which at least sixty percent (60%) of the outstanding capital stock belongs to citizens of the Philippines;
- (d) Cooperatives duly organized under the laws of the Philippines, ,sixty percent (60%) of the interest belongs to citizens of the Philippines; and
- (e) Supplier/contractor must have at least five (5) years' experience in the market of supplying generator set.



- (f) Supplier/contractor must have completed similar projects with the **same** rated capacity of the generator.
- (g) Supplier/contractor must have the following duly licensed key personnel:
 - Project Engineer and/or Civil Engineer (full time)
 - Safety Officer
 - Registered Electrical Engineer (REE)
 - Master Plumber

VI. CONTRACT PRICE AND PAYMENT

1. The Approved Budget for the Contract (ABC) is Thirty Million Pesos (P30, 000,000.00) inclusive of all applicable taxes, insurances/bonds, permits, licenses and/or other miscellaneous expenses and cost on the required works such as but not limited to civil works, mechanical works, electrical works, plumbing works.
2. An initial payment of fifteen percent (15%) of the contract amount is granted upon the supplier/contractor's presentation of a written request for an advance payment together with irrevocable Letter of Credit (LC) from a universal or commercial bank also equivalent to fifteen percent (15%) of the contract amount.
3. Catanduanes State University (CatSu) shall pay the supplier/contractor partial payments based on the value of goods delivered and services performed and accepted as certified by the Project Monitoring Office (PMO) and Project Monitoring Committee (PMC). In no case shall partial payment be made more than once every thirty (30) calendar days. Materials or equipment delivered on the site but not completely installed in place or used in the project shall be included for payment.
4. The first partial payment shall be paid by the CatSU to the supplier/contractor, provided that at least forty percent (40%) of the goods and services has been delivered and performed as certified.
5. Partial payment shall be divided in forty percent (40%), thirty percent (30%) and thirty percent (30%) accomplishment.
6. The supplier/contractor shall use the advance payment for mobilization, purchase of materials, and the like for the project. The amount shall be recouped pro rata in the progress billing.
7. The following documents must be submitted before processing of payments to the Supplier/Contractor can be made:
 - i. Progress Billing
 - ii. Detailed Statement of Works Accomplished
 - iii. Request of Payment by Contractor
 - iv. Pictures/ Photographs of actual site condition and works accomplished
 - v. Contractor Notarized Affidavit

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VII. TERMS AND CONDITIONS

1. All materials, equipment, devices and accessories to be supplied under this contract shall be new and unused, free from defects and imperfections and best suited for the purpose intended. Materials used in the manufacture and installation of all equipment to be furnished shall be of the required quality used in commercial products of reputable manufacturers.
2. The CatSU shall have the right to reject and return the items and cancel the corresponding contract if material delivered are defective and non-compliance with the specification.
3. Non availability of materials shall be made known to the procuring entity (CatSU) before the acceptance of Notice to Proceed (NTP).
4. Any and/or all expenses arising through the lack of knowledge or understanding regarding the existing conditions of the sites shall be responsibility of the contractor and no additional payment thereof shall be made by the University.
5. CatSU shall impose penalty of 1/10 of 1% of the total value of the undelivered order for each day as liquidated damages after the specified allowable number of days to deliver the project.
6. Amendment to Order. If any such order increases or decreases the cost of, or the time required for executing any part of the work under the original contract, the contractor may request for an amendment to order subject to the guidelines set forth in R.A. 9184 and its Implementing Rules and Regulation.

VII. OBLIGATIONS AND RESPONSIBILITIES

1. Undertake all works as stated in Item No. III - Scope of Work within the specified project duration.
2. The contractor shall be responsible for visiting the respective sites and thoroughly investigate and familiarize himself with all the conditions at site, the surrounding area and take particular reference to its accessibility, means of communication and transportation, and all other factors that hamper the smooth execution of the project.
3. The supplier/contractor shall comply with all applicable national and local codes, laws, regulations, statues and ordinances.
4. Secure all the necessary permits such as but not limited to Building Permit and Occupancy Permit (for Generator house), Environmental Compliance Certificate (ECC), Permit to Operate and Tree Cutting permit (if necessary).
5. Provide hands-on technical training of at least two (2) authorized personnel from the university on proper operation and preventive maintenance of the Generator set.

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IX. WARRANTY

1. All materials, services, deliverables, and/or work product under this Contract shall be warranted against defects in workmanship for at least 1 year, commencing upon the date of contract completion by the university.
2. The Generator unit, parts and accessories shall be warranted against material defects for at least 5 years, commencing upon the date of contract completion by the university.
3. A qualified factory-trained service representative shall provide warranty service.
4. A warranty security shall be required from the supplier/contractor for a minimum period of one (1) year, after acceptance by CatSU of the delivered supplies. The obligation for the warranty shall be covered by retention money in an amount equivalent to five percent (5%) of every progress payment. The said amounts shall be released after the lapse of the warranty period.

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