

CAMEROON DEVELOPMENT CORPORATION
GROUP BANANA

LOT TWO

SUPPLY OF 1No. 50KVA STANDBY GENERATOR-SET AND ASSOCIATED
COMPONENTS FOR THE MEDICAL THEATER, CAMP 7 CLINIC

S/N	DESCRIPTION	UNIT	QTY	UNIT PRICE (FCFA)	AMOUNT
1	50KVA Generator - set (see technical specification)	No	1	9,000,000	9,000,000
2	Automatic Load Transfer Switch (see technical specification)	No	1	1,500,000	1,500,000
3	Protective Switchgear (see technical specification)	No	1	506,958	506,958
	TOTAL				11,006,958



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TECHNICAL SPECIFICATIONS FOR MEDICAL THEATRE, CAMP 7 GROUP BANANA GEN-SET

1.0 INTRODUCTION

The Cameroon Development Corporation is in process to install a back-up generator-set for standby power at her Medical Theatre, Camp 7 Clinic Group Banana to back-up the frequent interruption of power supply due to medium voltage network breakdown as a result of unattended rotten poles, sub-station equipment breakdowns and load shedding which have had a devastating effect on the process system in Group Banana. It is for this reason that is imperative to back-up the Mains Power Supply with an alternative Back-up Power Supply which therefore requires the acquisition of the following:

1.1 Back-up Generator-sets

1.1.1 1No. 50KVA Diesel Engine Generator-sets

1.2 Associated Installation Components

1.2.1 1No. Protective Switchgear

1.2.2 1No. Automatic Transfer Switch (ATS)

2.0 DESCRIPTION

The project entails the procurement of diesel engine generator – set and associated installation components (protective switchgears and automatic transfer switches). The purpose of this procurement is to expediently obtain critical power equipment, in order to support / back-up mains power supply to Medical Theatre, Camp 7 Clinic Group Banana.

2.1 ENGINE GENERATOR-SET

The generator shall be a prime power rated engine generator set, including: prime power, directly coupled shaft, engine generator set. The unit shall be configured to consist of a liquid cooled engine and a conventional alternator and an electronic governor. The unit shall be manufactured complete with system controls and all necessary accessories to make the generator set fully operational. All equipment shall be as specified but shall not be limited to the items specified herein.

1	Diesel Engine Generator-set	Closed type model
2	Prime Power:	
A	Apparent Power	50 KVA
B	Active Power	40 KW
3	Power Factor	0.8
4	Phase	3



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prevent corrosion and all wiring to be run in flexible conduit for mechanical protection and environmental protection.

2.4 ALTERNATOR

AC GENERATOR

Excitation.....	Self-Excitation
Number of poles.....	04
Number of bearings.....	Single Bearing
Number of Leads.....	012
Insulation.....	Class H with tropicalization and anti-abrasion
IP Rating.....	Drip Proof IP22
Alignment.....	Pilot Shaft
Over-speed capability.....	180
Wave form Deviation (Line to Line).....	Less than 5% deviation
Voltage regulation.....	Less than +/- 1/2% (steady state) Less than +/- 1% (no load to full load)

2.4.1 The alternator shall be a multi-pole revolving field type, wire for 400 / 240 V, 3-phase, 50 Hz, 4-wire, with a brushless, static exciter. Generators shall be Prime rated. The stator shall be directly connected to the engine flywheel to ensure permanent alignment. The generator shall meet temperature rise standards for class "F" varnish, type "M" class 155. All leads shall be extended into the AC connected panel. The alternator shall be protected by internal thermal overload protection and an automatic reset field circuit breaker. One step load acceptance shall be 100% of nameplate KW rating and the generator shall return to normal operation within 15 seconds.

2.4.2 The engine-generator set shall be so designed that voltage dip upon application of nameplate full load shall not exceed 30% with recovery to stable operation within 15 seconds.

2.4.3 The solid state voltage regulator shall control output voltage by varying the exciter magnetic field to provide plus or minus 1% regulation during stable load conditions. The regulator shall have a voltage droop characteristic of 4 volts per cycle to maximize motor starting capability in the event an extremely heavy load drops the output frequency. The generator set to be properly matched to the load characteristics ensuring optimum system performance.

2.4.4 The voltage regulator shall contain a limiting circuit to prevent output surges in excess of 110% of rated voltage during generator set operation. On a loss of the sensing signal, the



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Generator – Set Principal Eliminary Criteria

1	Prime Power	50 KVA
2	Rated (Nominal) Voltage	400 / 240 V
3	Rated (Nominal) Frequency	50 Hz
4	Front Mount Circuit Breaker	100 A
5	Prime Mover Cooler	Liquid
6	Fuel Type	Diesel
7	Fuel Tank	In-built
8	Engine Design	Turbo Charge

Automatic Transfer Switch (ATS) Principal Eliminary Criteria

1	Contact Type	Motorise
2	Rated (Nominal) Voltage	400 V
3	Rated (Nominal) Current	500 A
4	Rated (Nominal) Frequency	50 Hz
5	Complete Unit	Standalone (Independent)
6	Transfer Time (Source – to – Source)	30 s
7	Pole	4

Protective Switchgear Principal Eliminary Criteria

1	Main Circuit Breaker	100 A
2	Control Circuit Breakers	
3	Phase Sequence / Phase Control Relay	
4	On – Delay Relay	
5	Over / Under Voltage Relay	
6	Lightning / Surge Arrestor	
7	Voltmeter and Ammeter Displays	
8	Complete Unit	Standalone (Independent)



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