



**REQUEST FOR QUOTATION (RFQ) FOR SUPPLY, INSTALL
AND COMMISSION OF A 1000KVA STANDBY DIESEL
GENERATOR AT SHOSHOLOZA MEYL JUNCTION,
JOHANNESBURG**



BACKGROUND OVERVIEW

1. Introduction

PRASA CRES Campus Facilities Management Department is responsible for ensuring that we maintain and ensure that there is constant source of electrical supply to our various buildings. One of the buildings we are responsible for is the Regional Office of PRASA Rail Gauteng. Which the primary electrical supply is from ESKOM Newtown Intake Substation. This supply is managed and maintained by PRASA Rail Gauteng Infrastructure department.

This facility requires 100% back up power because their operations are core to the business operationally. The objective is to ensure that operations at this facility is not disrupted by power outages that occur due to either load shedding or equipment failure.

It is therefore important that this facility be provided with a standby generator that will ensure continuous electrical supply for continuous operations.

2. Background information

a. STATUS QUO

The current state of the substation and infrastructure is old and has obsolete electrical equipment. Cable faults and theft also has a major impact on our electrical supply. The situation is further exasperated by loadshedding by Eskom current rate of failures is high in occurrence and renders our facility inoperable and non-functional. Operational activities at Shosholoza Meyl Junction require 100% constant power supply. As this building houses the Regional Joint Operation Center that operates on a 24-hour cycle. Electrical supply disruptions cost the organisation loss in productivity, which also can render as a security threat when the building has no adequate lamination.



SCOPE REQUIREMENTS

SPECIFICATION:

Supply, Install and Commissioning of a 1000KVA Diesel Standby Generator at Shosholoza Meyl Junction in Braamfontein, Johannesburg

1. Scope
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1. Scope Of Work

- 1.1. The scope of work entails Supply, Install and Commissioning a 1000KVA Diesel Generator per specified items in the Bill of Quantities. The location of installation is at Shosholoza Meyl Junction in Braamfontein, Johannesburg. The contractor shall supply and install a brand-new generator.
- 1.2. The contractor shall submit all tests pertaining to the installation and will issue a COC for the installation.

2. Definitions

- 2.1. *PRASA-CRES:* One of the subsidiaries of Passenger Rail Agency of South Africa (PRASA) group responsible for managing the property portfolio of the group and the maintenance thereof.
- 2.2. *Facilities Manager:* A manager of PRASA-CRES responsible of building and infrastructure portfolio or any person authorised to act in that capacity.
- 2.3. *Normal Working Hours:* Hours of work as determined by a wage regulating measure or statutory enactment for any trade or activity, during which the basic minimum rate of pay is applicable and excludes all time for which a higher rate of pay is obligatory. Where no wage regulating measure is in force, the hours will be 07h00 to 17h00 Mondays to Fridays excluding a daily meal break.
- 2.4. *Contractor:* Successful tenderer who is appointed by PRASA-CRES and will be responsible to carry out the works as per this specification.



3. Installation References

3.1. All electrical work will be in accordance with the following publications

- SABS 0142, SABS 1152 and SABS 0147 Code Of Practices
- SANS 10142-1/ 10142-2
- E7/1 or E7/2, E4E specifications
- OHS Act 85 of 1993 as amended and
- Other applicable Municipal By-Laws and Regulations

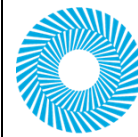
4. Standby generator standard

The Diesel Generators Units shall be designed, manufactured and tested in compliance with the latest versions of the following standards;

- IEC 60034: Rotating Electrical Machines
- IEC 60085: Thermal Evaluation and Classification of Electrical Insulation
- IEC 60529: Degrees of Protection provided by Enclosures (IP Code)
- ISO 10816: Specification for Mechanical Performance: Vibration
- ISO 3046: Specification for Reciprocating Internal Combustion Engines
- SI 426: European Commission (dangerous substances) (Classification, packing, labelling, and Notification of Regulations 1992.
- CIMAC: Congress International des Machines a Combustion Recommendations for Diesel Engine Acceptance Test.
- ISO 9000: Quality assurance

5. General Information

- 5.1. The contract shall be registered with the Electrical Contractors Board (ECB) as laid down in the Electrical Installation Regulations of the Occupational Health and Safety Act 85/1993, clause 5.
- 5.2. The electrical contractor shall be or have in his employment an accredited person. Proof must be supplied of the above requirements
- 5.3. The Contractor must have the capacity to be able to execute and complete the works within the delivery period as stipulated by PRASA-CRES
- 5.4. All material removed to be returned to PRASA-CRES unless otherwise stated.
- 5.5. All material used shall be of high standard (SABS approved)
- 5.6. Compliance certificates to be issued on completion of all new work done at no cost to PRASA-CRES. Compliance certificates required for existing installations to be priced out at the prescribed set rate.
- 5.7 Bidders shall include Operating instructions and maintenance manuals
- 5.8 The generator must be factory tested and proof thereof must be supplied



5.9 Bidder shall include a minimum of 12 month guarantee and warranty on all mechanical parts

5.10 Bidders shall include a product brochure and offer an induction to internal staff before the handover of the unit

6. Technical Specification

6.1 1000KVA Outdoor Diesel Generator Technical Specification

Features and benefits

- 1000KVA standby power at 230/400v @ 50Hz 1500rpm, Number of Phases 3 ph, 4 wire
- High-quality and reliable 12 or 16 cylinder 31.8l turbocharged diesel engine.
- Ideal for commercial and business applications
- Silent canopy which can stand outside with lockable doors
- Automatic changeover (ATS), maintenance free batteries and trickle charger included
- H-specification insulation, brushless alternator with AVR provides stable output
- High-temperature and oil pressure sensor to protect against engine damage
- Easy to use digital controller with auto/manual start options
- All sets undergo a comprehensive testing/pre-delivery inspection prior to delivery
- Peace of mind of earlier of one year/1000-hour warranty

Engine Specification

Displacement:	31.86L
Cylinder bore/Stroke:	150mm x 150mm /130mm x 150mm
Fuel system:	In-line fuel injection pump/ Spin on type
Governor	Electronic
Cylinders:	12/16 cylinders water cooled
Engine output power:	857kW/889kW
Turbocharged/normally aspirated:	Turbocharged
Cycle:	Four stroke
Combustion system:	Direct injection
Compression ratio:	15.7:1/ 16.5:1
Fuel tank capacity:	2000L
Fuel consumption 100%:	207.1 l/h/ 208l/h
Fuel consumption 75%:	155.3 l/h/161l/h



Fuel consumption 50%: 106.6 l/h

Fuel consumption 25%: 58.4 l/h

Oil type: 15W-40

Engine Specification

Engine oil capacity: 109l/ 130l

Cooling method: Water-cooled radiator/fan

Starter: 24V DC charger alternator/ 24V Electric

Engine speed: 1500rpm

Filters: Replaceable fuel filter/oil filter/dry element air filter

Battery: Maintenance-free battery including rack and cables

Silencer: Exhaust silencer

General Engine Specification

Structure type: Silent weather resistant enclosure

Dimensions Length x Width x Height: 4850mm x 2250mm x 2650mm/ 3465mm x 2056mm x 2140mm

Dry weight: +/- 8500kg

ATS unit included: Included

Four-way protection system included: Included

Alternator

Alternator make/type: Low Voltage Alternator – 4 pole or equivalent for the application

Standby power output: 1100kVA

Prime power output: 1000kVA

Insulation class: Class-H with circuit breaker protection

Type: Brushless

Phase and connection: Three phase/four wire

AVR: Included

AVR model: SX440

Voltage regulation: $\pm 1\%$

Voltage: 230/400V



Rated frequency:	50Hz
Voltage regulate change:	$\leq \pm 10\%$ UN
Phase change rate:	$\pm 1\%$
Power factor:	0.8 ϕ

Alternator

Protection class:	IP23 standard/screen protected/drip-proof
Stator:	2/3 pitch
Rotor:	Single bearing
Excitation:	Self-exciting
Regulation:	Self-regulating

Canopy Specification

- Ventilation parts are designed with modular principles
- Weather resistant and lined with sound reducing foam
- All metal canopy parts are painted with powder paint
- Panel window
- Lockable doors on each side
- Easy maintenance and operation
- Easy lifting and moving
- Thermally insulated engine exhaust system
- Exterior emergencies stop push button
- Sound attenuated

Chassis

- The complete generator set is mounted as a whole on a heavy duty fabricated, steel base frame
- Steel chassis and anti-vibration pads
- Base frame design incorporates an integral fuel tank
- The generator can be lifted or carefully pushed/pulled by the base frame
- Dial type fuel gauge on the fuel tank

Control Systems



Control supervision and protection panel is mounted on the genset base frame. The control panel is equipped as follows:

AUTO MAINS FAILURE CONTROL PANEL

- Controller with automatic transfer switch
- Electronic controller
- Emergency stop push button
- Static or equivalent battery charger for application
- Four-pole electrically and mechanically interlocked ATS

ELECTRONIC CONTROLLER

- This module is used to monitor a mains supply and automatically start a standby generating set
- Shutdown alarms
- STOP/RESET-MANUAL-AUTO-TEST-START

METERING VIA LCD DISPLAY

- Mains volts (L-L/L-N)
- Generator amps (L1, L2, L3)
- Generator frequency; generator (cos)
- Engine hours run; plant battery (volts)
- Engine oil pressure (psi and bar)
- Engine speed (rpm)
- Engine temperature (Degrees Celsius)

AUTOMATIC SHUTDOWN AND FAULT CONDITIONS

- Under/over speed; fail to start
- High engine temperature; fail to stop
- Low oil pressure; charge fail
- Under/over generator volts
- Under/over generator frequency
- Emergency stop/start failure



- Under/over mains voltage
- Charge failure

COMMISSIONING

- Carry out all commissioning tests necessary to put the system into commercial use and to approval before Practical Completion is granted.
- Each item of equipment individually and the complete system as a whole shall be checked and adjusted to achieve satisfactory performances.

MOUNTING

- Complete unit to be mounted on robust skid frame.
- Vibration mountings to be used where required.

7. Evaluation Methodology

Evaluation Process

Interested bidders for this project shall be evaluated in terms of their administrative responsiveness, substantive responsiveness, technical/functional (capacity testing) evaluation and preference points. The evaluation committee shall use the following Evaluation Criteria depicted in table below for the selection of the preferred bidder that shall render / deliver the required works, goods and / or services.

Evaluation Criteria:

Stage 1A: Compliance Checklist Requirements for all Services/Goods and works

If you do not submit the following mandatory documents your Proposal/Quote will be disqualified automatically:



No.	Description of requirement	
a)	BOQ/Price Schedule and Pricing form (Bidders must ensure that they Only include this financial document/ information in the second envelop) Failure to do so will automatically disqualify the Bidder.	
b)	Completion of ALL RFQ documentation (includes ALL declarations and Commissioner of Oath signatures required) (includes All declarations, All Standard Bidding Documents (SBD), Annexure's and Commissioner of Oath signatures required) Bidders must ensure all documents are completed in full and signed.	
c)	Joint Venture / Consortium agreement / Trust Deed/ JV or consortium agreement signed by all parties (if applicable)	
d)	Bidders must sign the correct Closing/ Submission register for the related RFQ on submission of tender documents.	

Stage 1B

The following documents are non-mandatory and where not submitted, PRASA may request the documents and must be made available at the time of request:

No.	Description of requirement	
a)	Company Registration Documents	
b)	Copies of Directors' ID documents;	
c)	Valid BBBEE Certificate from a SANAS accredited rating agency (Original or Certified) or affidavit signed by the Commissioner of Oath	
d)	Valid Tax Clearance Certificate (must be valid on closing date of submission of the proposal) and SARS Issued Pin	
e)	CSD report / CSD reference number (CSD must be tax compliant)	
f)	Valid Letter of Good Standing (COID)	

7.1 Technical Evaluation

Stage 2: Qualifying bidders shall be evaluated on technicality / functionality after meeting all compliance requirements outlined above. The minimum threshold for the technical/functionality requirements is 60%. Bidders who score below the minimum requirement shall not be considered for further evaluation in stage 3.

Table : Technical Evaluation Criteria

Technical / Functionality Requirements

- Qualifying bidders shall be evaluated on technicality / functionality after meeting all compliance requirements outlined above.
- The minimum threshold for the technical/functionality requirements is 60%. Bidders who score below the minimum requirement shall not be considered.

NOTE: The Technical or Functionality criteria must be guided by the project scope of works and area of focus.

Scoring of Functionality:

Responsive tenders will firstly be evaluated on functionality. The minimum score for functionality is 60% and a bidder who scores below this minimum shall not be considered for further evaluation in terms of the preference point systems.

CRITERIA	SUB-CRITERIA	SCORING	WEIGHT
Track Record of the Contractor on supply, install and commission of a standby diesel generator (4EP/EB or Higher) of projects previously executed. Proof of Projects executed prior CIDB regulation changes in October 2019 within level 4EP/EB or higher grading will also be accepted. Project must still fall within	Full points are allocated for track record of 5 projects of similar type and scale executed and completed by Bidder in consideration in the last 7 years (2016-2022). All the below items 1- 2 must be provided for all projects presented under the scoring. 1. Appointment letter/PO/Contract from client, on Client Letterhead 2. Reference Letter/Completion Certificate from the client, on Client	0 points = No proof or submission of projects within (supply, install and commission of standby generator per 1000KVA) 1 point = Proof of 1 within project within (supply, install and commission of standby generator per 1000KVA) 2 points = Proof of 2 projects within (supply, install and commission of standby generator per 1000KVA) 3 points = Proof of 3 projects within (supply, install and commission of standby generator per 1000KVA) 4 points = Proof of 4 projects within (supply, install and commission of standby generator per 1000KVA)	35



CRITERIA	SUB-CRITERIA	SCORING	WEIGHT
the 2016-2022 period.	Letterhead, signed or stamped with contactable references.	5 points = proof of 5 projects and more projects within (supply, install and commission of standby generator per 1000KVA)	
Key Staff (assigned site personnel) in relation to the scope of work	<p>List all Site Staff proposed for this Contract including experience with copies of CV's, Trade Test / Certificates.</p> <p>(A Contractor is required to have a minimum of 2 trade tested electricians (Artisans))</p>	<p>0 point: No submission or no proof of key staff CVs provided.</p> <p>1 point: less than 1 years' average experience of all (Artisan/s) Electrician with Trade Test Certificate</p> <p>2 points: More than 1 to 3 years' average experience of all (Artisan/s) Electrician with Trade Test Certificate</p> <p>3 points: More than 3 to 5 years' average experience of all (Artisan/s) Electrician with Trade Test Certificate</p> <p>4 points: More than 5 to 7 years' average experience of all (Artisan/s) Electrician with Trade Test Certificate</p> <p>5 points: More than 7 and above years' average experience of all (Artisan/s) Electrician with Trade</p>	35



CRITERIA	SUB-CRITERIA	SCORING	WEIGHT
		Test Certificate	
Resource Availability	<p>The bidder to submit proof of ownership or rental agreement of the below list of plant equipment suitable for the execution of the work.</p> <ol style="list-style-type: none"> 1. 2 x Bakkies 2. LDV 1Ton 3. Low Bed Truck 4. 30 Ton Crane Truck <p>Note:</p> <ul style="list-style-type: none"> • For rental of plant and equipment a letter of intent on the letter head of the rental company or rental agreement will be sufficient. • For ownership of plant and equipment a list on a company letter head and signed by the company director will be sufficient. <p>With proof from Traffic Dept of ownership of a bakkie, LDV, Low Bed Truck and 80 Ton Truck to be attached</p>	<p>0 Point – No proof of ownership /rental agreement provided, or irrelevant submission provided</p> <p>1 point: a list of 1 plant and equipment listed with proof of ownership or rental agreement.</p> <p>2 points: a list of 2 plant and equipment listed with proof of ownership or rental agreement.</p> <p>3 points: a list of 3 plant and equipment is provided with proof of ownership or rental agreement.</p> <p>4 points: a list of 4 plant and equipment is provided with proof of ownership or rental agreement.</p> <p>5 points: a list of 5 or more plant and equipment is provided with proof of ownership or rental agreement.</p>	30
TOTAL			100



8. Bill of Quantities

Shosholoza Meyl Junction

Item	Description	Unit	QTY	Local Content Threshold	Rate Excl Vat	Total
1.	Removal					
1.2	Removal of 650KVA Generator container enclosure	Ea	1			
2	Standby Generator					
2.1	Supply, Install and commissioning 1000KVA Diesel generator plant complete as per technical specification.	Ea	1	N/A		
3.	Electrical Cables					
	<i>Supply and install medium voltage 600/11000V SWA insulated cable for generator with the following spec:</i>					
3.1	Supply and install 185mm ² 4-core armoured copper cable with accessories,	Meters	1000	90% Electrical Cable		
3.2	Supply and install 95mm ² 4-core armoured copper cable with accessories.	Meters	500	90% Electrical Cable		
3.3	Supply and Install 95mm ² insulated earth cable.	Meters	500	90% Electrical Cable		
4.	Circuit Breaker and Accessories					
4.1	Supply and install 1600 A air circuit breaker with complete accessories	Ea	1			

Supply, install and commission of a 1000KVA Standby Diesel Generator at Shosholoza Meyl Junction



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5.	<i>Commissioning</i>					
	Test and Commission after completion of all related installation works and final handover	Ea	1			
6.	<i>Ps and Gs</i>					
	Provisional Cost for Preliminaries and General					
Total EXCLUDING VAT						
VAT @ 15%						
5% Contingencies						
Grand Total						

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