TENDER: Supply, Installation & Commissioning of DG at Jakar

Terms & Conditions:

Bhutan Telecom invites to quote ebid through eprocurement Systems subject to the following terms and conditions:

1. Performance Security

1.1 Upon receipt of notification of award, the successful Bidder shall furnish a "Performance Security" to the purchaser within two weeks from the date of issuance of Purchase Order (PO). " Performance Security to be submitted to nearest BTL, Office.

1.2 The amount of such "Performance Security" shall be not less than 10% (ten percent) of the total "Evaluated Price" of bidder's offer.

1.3 The "Performance Security" shall be denominated in the currencies of the contract and shall be in the form of Cash Warrant/Demand Draft/ an irrevocable Bank Guarantee to be given by any branch of scheduled banks in Bhutan.

1.4 The proceeds of this "Performance Security" shall be payable to the purchaser as compensation for any failure of the Bidder to complete his obligations stipulated in the contract.

1.5 If supplier fails to deposit "performance Security" within one week from the date of issuance of PO, the order shall be treated as cancelled and it shall be placed to the 2nd Lowest Bidder.

1.6 The "Performance Security" shall be discharged with or without deductions (as applicable) to the supplier upon his completion of performance obligations as described in the contract terms.

2. Payment Terms

6.1 100% payment shall be released within 10 days from the date of completion of the work order and no part payment whatever will be entertained during execution of the contract.

3. Liquidated Damages

7.1 Delivery to be completed within two months from the date of issue of our work order failing of which liquidated damages of 0.1% of the purchase order value for every day's delay will be levied subject to a maximum rate of 10%. Purchase order shall be treated cancelled thereafter and will be awarded to the next lowest bidder. In case of such event, the clause no.5 shall come into force/effect.

4. Prices

4.1 Price quoted by the bidder shall be **CIF , Bumthang.**

4.2 The bidder should quote as per the specification provided in Bid Form and delivery schedule

4.3 All prices quoted shall be on a per unit basis and valid till **for 12 months from the date of bid opening**. The selected bidders shall be contacted for additional supply of any enlisted item in future on repeat order basis for the entire contract period.

5. Purchaser's Right

5.1 Bhutan Telecom reserves the right to reject all or in part, the item supplied by the successful bidders during physical verification/technical testing if it believes that the goods supplied are non standard/non specific and unreliable in terms of quality.

5.2 Bhutan Telecom reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidders of the grounds for the purchaser's action.

5.3 Bhutan Telecom reserves the right at the time of the contract to increase or decrease the quantity of item tendered, without any change in price or other terms and conditions.

5.4 Bhutan Telecom also reserves the right to call quotations and receive the same in the form of email or fax, directly from the manufacturers in India and other countries and compare the rates with those offered by the local suppliers. If need be, Bhutan Telecom also reserve the right to purchase the items directly without assigning any reasons thereof.

5.5 If the selected bidder fails to supply the full quantity of the bid, Bhutan Telecom shall cancel the order for the quantity not supplied and place the order to the next bidder in succession. However, Bhutan Telecom shall recover as liquidated damages, the difference between the contracted rates and the actual price paid to the next bidder for the quantity not supplied.

6. Mandatory Documents to be submitted with the bid.

6.1 Bidders shall download Integrity Pact and resubmit/ upload duly filled, signed completed form in original scan. Failing to upload, tender shall be considered non-responsive.

6.2 Catalogue and other document to be submitted in the filled other document failing which bid shall be considered non-responsive.

7. Warranty

As per BOM

8. Scope of Work: As below:

1. TECHNICAL SPECIFICATION OF DIESEL ENGINE GENERATOR SET:

1.1 Scope of work:

Supply, Installation, Testing & Commissioning of 1X600 kVA (3 Ph. 4 Wire, 50 Hz) at Bumthang with Standard AMF Panel, Synchronizing kit, Power Command 3.3 Control System with sound proof canopy. The successful bidder should also interconnect the existing DG set with the features to operate in both single mode and parallel mode. Further, both the DG sets should have RMS facility for monitoring and controlling of the engine remotely from the centralized NOC, Thimphu.

1.2 The following are the detailed technical specifications of the Engine:

Technical Specifications		**Compliance**
Make:	JAKSON/CUMMINS	
Alternator Make	Stamford	
Model No	JSP 600Q	
Genset Serial No.	CIK-18120965	
Engine Model No.	QSK19-G6	
Generator Set Rating		
Engine Serial No.	25439219	
Alternator Serial No.	N181375300	
Rated BHP	782	
Rated KW	482	
Rated KVA	600	
Full Load Current	834.7	
Rated Voltage	415	
Rated Frequency	50 Hz	
Rated RPM	1500	
Starting Battery Voltage	24V	

PF	0.8	
Duty	Continuous	
Genset Max Weight	10600 KG	

1.3 General Requirements

	Compliance
The Diesel Engine shall be of 'Generator set' application type & shall generally confirm to ISO 3046 / BS 5514 / IS 4722/1992 with amendments respectively.	
The engine shall have Cold starting capability up to -5 deg Bumthang will have about -10 oC . C and shall have capability to start directly to RUN speed (1500 RPM) without any interim warm up speed (Idle speed).	
The Diesel – Generator set shall comprise of a Diesel Engine of specified capacity, directly coupled to an Alternator of specified capacity mounted over a common base frame with Anti-vibro-mounts (AVM pad as recommended by Engine Manufacturer). The diesel engine shall be of four stroke cycle multi-cylinder, water cooled, turbo charged with after cooler, developing required BHP @ 1500 rpm under NTP condition with an over load capacity of 110% for one hour in any specified 12 hrs of continuous operation.	

1.4 Acoustic Enclosure:

Sl.No	Description	Compliance
1	General The enclosure shall meet the stringent noise levels shall be **75 dB (A)** at 1 meter from the enclosure surface.	
2	The acoustic is composite in construction & is a fully assembled Integral unit. A tough glass is to be provided for viewing the set.	
3	The Acoustic enclosure parts will be powder coated after pretreatment Process. The powder coating shade shall be 'GENSET GREEN'. The common base frame will be epoxy painted black Shade in colour.	
4	Ease of access and serviceability.	
5	Insulation conforms to UL94-HF1 class for flammability.	

1.5 Base Frame

Sl.No	Description	Compliance
1	The diesel engine & alternator shall be perfectly aligned & assembled on Sturdily fabricated adequately machined integral base frame made out of high quality MS channels. The base frame shall be provided with lifting facility & predrilled foundation holes for installation on anti-vibration mounting (AVM	

	pads).	

1.6 Accurate digital display of engine parameters

Digital Display of engine parameters	Compliance
Battery Voltage	
Coolant temperature	
Lube oil pressure	
Engine speed	
Engine running hours	
Frequency	
Exhaust temperature	
AC Volts / Line to line & Line to Neutral	
AC Amps - 3 phase	
KW / KWH, PF and frequency	
%age of load	

1.7 Diagnostic and Engine Protection

Diagnostic and Engine Protection	**Compliance**
High coolant temperature (trip/alarm)	
Over speed (trip/alarm)	
Low oil pressure (trip)	
Battery Over/Under/Weak Volts	
Fail to start/crank,	
Sensor failure	
Low coolant level (trip/alarm)	
Low fuel Level	
Routine Maintenance Indicator	

1.8 Alternator protections

Alternator protections	**Compliance**
Over load / Over current / Short Circuit current	
Over and Under voltage	
Over and Under Frequency	
Earth Fault	

1.9 Facilities

Facilities	Compliance
Remote Start/Stop	
Panel Lights	
Emergency Stop Push Button	
Earth Fault	

1.10 Starting

Starting	Compliance
Mode of starting: by electrical +24V DC motor powered by Starting Batteries. Also the batteries should get charged through dynamo once the DG starts running.	
Battery Charger with adequate rating should also be supplied and have inbuilt charger in the AMF Panel.	

1.11 Fuel System:

Fuel System:	Compliance
No external tank is required. However, the successful bidder has to supply and lay out properly the fuel system from the existing external tank to the new DG set.	

1.12 Earthing System

Earthing Systems	Compliance
Two separate earthing (1 for body & 1 for neutral) must be supplied and installed.	

1.13 Cabling & Terminations

Cabling & Terminations	Compliance
Power cable from alternator to existing AMF panel shall be carried out by the successful bidder. All end terminations to be carried out by crimping type copper sockets/lugs.	

The power cable from alternator to existing AMF panel(in live condition) shall be carried out as per the site condition in consultation with BT"s site engineer after arranging all the necessary materials to avoid service outage.	

2.0 Tests and Inspections during Construction

Sl. No	Description	Specification	Compliance
1	Type of cooling	**Water cooled/Turbo charged**	
2	Direction Of Rotation (SAE Std) FW end	Clockwise	
3	Lube oil change period (HRS)	To be furnished	
4	Recommended Lube oil	To be furnished	
5	De-rating of the engine – Altitude @ 2800mtr	To be furnished	
6	Starting System	Electrical. 24V DC motor with starting battery arrangements	
7	Battery charger with built-in regulator	Yes	

2.1 Training & Documents

Sl.No	Training & Documents		Compliance
1	Training at works	For two persons (free of cost)	
2	Detail spare part catalogues & Price list	Two Sets (both in soft and hard copy)	
3	Operation, Maintenance & Trouble shooting Manual	Two Sets (both in soft and hard copy)	
4	Original factory test reports for each Gen. Set / Equipment.	Two Sets (both in soft and hard copy)	
5	One set of tools with box required for carrying out the maintenance of the DG.	1 set	

2.2 Submittals

Submittals	Compliance
Preliminary design review (PDR) document with Drawings (GAD) for laying of fuel tank with fuel lines, dimension of the DG, etc should be submitted to the	

project manager within a week of receipt of purchase order.	

2.3 Warranty

Warranty	**Compliance**
System supplied shall be covered under a warranty period of 24 months from the date of commissioning of the unit at site.	

2.4 Safety

Safety	**Compliance**
In the course of the work, personnel working in the system at site should take utmost care for their safety and work purely at individual's/ party's risk. BT will not be responsible for any untoward accidents for the party's working personnel.	

Other Terms and Conditions:

1. Before quoting, the bidder shall inspect the site, to fully acquaint himself about the actual requirement, condition in regard to accessibility of the site, working condition of site, locality including installations of tools and plants (T&P), conditions affecting accommodations and movement of personnel etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by BT in any circumstances.

2. BT does not bind itself to accept the lowest or any tender at all. BT also reserves the right to negotiate or partly accept any tender or all tenders received without assigning any reasons thereof.

3.0 Bill of Materials

Sl.No	**Item Description**	**Qty**	**Unit**	**Rate**
1	DG Set: 600 kVA, 3 Phase as per the specs provided in 1.2	1	Set	
2	Synchronization panel with required accessories-Please mention detail requirement	**1**	**Set**	
3	AMF Panel with RMS facility	**1**	**Set**	
4	Interconnecting cable- 4 Core, 300 sqmm armoured aluminum cable	**100**	**Meter**	
5	Earthing System (Maintenance free chemical earthing)	**4**	**Set**	
6	Installation Materials	**1**	**LOT**	
7	Transportation Charges CIF at Site	**1**	**LOT**	

9	Installation & Commissioning Charges	**1**	**LOT**	
	Total Amount			